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*Official Publication of*  
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## Editorial

Health Education Association of Nepal (HEAN) expresses its immense pleasure to publish Journal of Health Promotion (JHP) 7th volume in print copy and online version via (<https://www.nepjol.info/index.php/jhp>). HEAN was established three decades ago by some health education lovers and professionals connected to Faculty of Education, Institute of Medicine, Tribhuvan University and Health Department, MoH. aiming at developing common understanding and increasing cooperation among health education professionals. It was formed as a non-profit professional organization in order to create professionals' integrity and unity. One of the main objectives of HEAN is to make people aware of health problems and ways for promoting health through health education. In this connection, HEAN has been publishing academic and professional journal since 2005, which aims at providing opportunity to health education professionals and researchers to explore their latest research developments in health education and health promotion. Publishing a scholarly journal on health-related issues not only contributes to strengthening public awareness on health but also helps policy makers formulate policies to promote health and create healthy citizens.

Nepal has significantly improved some health indicators such as on safe motherhood, infant mortality, child mortality, U5 child mortality, life expectancy, child nutrition and health institutional delivery. However, low per capita income, social cultural taboos, lack of awareness, and poor access and use of health service among others resulted to bear several health problems and social problems. They include early marriage, early pregnancy, poor safe motherhood care, malnutrition, unsafe abortion, having too many children, highly disadvantaged group and so on. Eventually, formal as well as non-formal health education can play crucial role to change peoples' health behaviour and their access to better health care and basic health service.

Health education is a cost-effective approach to promote health status of people by improving health literacy, preventing different diseases, and maintaining and developing the level of health status. Health education has been considered as a valued part of schools and universities. It contributes to improving health status of people by increasing knowledge, awareness, skills and changing positive health behaviour. It motivates and encourages school children and youngsters to prevent diseases and reduce risky behaviours, which ultimately assist in developing and maintaining their good health. It helps students modify their behaviour and make health choice throughout their life. Therefore, every nation frame health policies and strategies and implement them to prepare healthy citizens. Health education has lot to offer in maintaining and promoting health of people.

HEAN is a common platform of health education professionals for performing academic exercise including discussing and sharing issues and challenges of health and health education, health education profession, new innovation in health, health education curriculum at schools and universities, pedagogy, school health, sexual and reproductive health, environmental health, nutrition, community health, public health and many more. There are 12 articles in this issue based on primary and secondary data in different areas of health promotion and health education.

This peer-reviewed journal has been published with great efforts and contribution of the authors and outstanding reviewers from Nepal and abroad. With a view to enhance quality of articles, comments provided by reviewers and editors have been incorporated. We hope this journal is not only helpful to health education professionals and researchers but also to the teachers and students to enhance understanding of health education as well as health promotion. We always welcome genuine, creative and valuable suggestions from readers to make this journal a more precious resource and to broaden knowledge on health education. Finally, the editorial board would like to extend sincere gratitude to language editor, peer reviewers and authors for their contributions.

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## Child Marriage in Nepal: Stakeholders' Perspective

Kamal Gautam, PhD\*

### ABSTRACT

This study is about child marriage in Nepal from stakeholder's perspective. It includes school going girls, women, teachers, health post staffs and local politicians as stakeholders and intends to find the situation, effects and perspectives of stakeholders on child marriage in Nepalese context. It comprises both qualitative and quantitative aspects followed by interview schedule and FGDs as tools. Fathers, relatives and friends were responsible for the incidence of early marriage in study site. Regarding effects, problems to become self-dependent and deprivation of opportunity are the major effects that respondents had to face in their life. Workload in the families seems another effect to be faced followed by health problems to be experienced. Bleeding during pregnancy, low count of RBC, weakness, postpartum complications were seen in mothers during and after child births. Teenage mothers being more likely to experience complications during pregnancy and less likely to be emotionally, physically and psychologically prepared to deal with pregnancy related challenges, which often leads to maternal illness and consequently death was seen as the main conclusion of this study.

**Keywords:** Child marriage, complications of child marriage, stakeholders' perspective

### Introduction

Child marriage is a global problem which affects millions of people across the world. It is considered a human right violation because it deprives especially girls of education and health services, the chance to learn skills and develop their potentialities, and leaves them vulnerable indeed (World Vision International Nepal, 2012). Bajracharya (2014) opines that child marriage restricts children's choice, changing their course in life, and putting them at significant risk of abuse and violence.

Marriage occurs relatively early in Nepal. According to a report of MoHP (2011), 55 percent girls are married by age 18 and 74 percent are married by age 20. The median age at first marriage among women age 25-49 is 17.5 years. The proportion of women married by age 15 declines from 24 percent among those age 45-49 to 5 percent among those age 15-19 indicating clear evidence of a rising age at first marriage.

Nepal is one of the highest rates of child marriage in Asia. Although the legal age of unions for both sexes is 20 years, the report of CSB (2015) shows that more than a third of young women are married at the age of 18. The concept of early marriage as Ahmad (2012) states, is synonymous with the women's new gender-defined role of motherhood which is a cultural expectation emanating from the husband and the in-laws and often women's own parents. He

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has mentioned that nearly one quarter (23%) of the women by the age of 19 years is child-bearing in the world. He further has added that high rate of early age marriages is compounded with the common practice of early conception of the first pregnancy, which is culturally considered to be a sign of fertility.

A child education is also significantly affected with married girls in Nepal 10 times more likely not to be school than their unmarried peers (MoHP, 2012). The same report discloses that girl's right to health also comes under threat stating that just over one in eight Nepali women had babies before the age of 18 which puts them at a higher risk of death or injury during child birth. However, as UNICEF report (2017) states, poverty, the low value attached to daughters and lack of access to education are contributing factors behind it.

The study site of this research is a village situated at western part of Nepal. It falls under Panini Gaunpalika of Argakhanchi district and is known as Sadhanbutta. The village is surrounded by Debalchour in east, Khulaule in west, Dhairchaur in the south and Dhaba in the north. It lies in province no. 5. According to its ward profile of 2074 B.S. as maintained by local mother's group, it has 109 households and 676 populations in total. The major caste people are Brahmin, Magar and Dalits. Like in other parts of the country, prevalence of teen age marriage is still found in the village though it is known somehow as an educated place in the district.

### ***Rationale of the Study***

Child marriage has numerous adverse effects on the overall wellbeing of children who are mentally, psychologically, emotionally and physically unfit for married life. But in Nepal, child marriage is a customary, socially established practice that has been carried on for generations. According to World Vision International Nepal (2018), only 48.84% female and 59.63% male are literate in Nepal that means still significant portion of population is illiterate. Ignorance, old-age tradition and customs are not easy to do away with. Unless people are made aware of the devastating multi-pronged effects of early marriage, they will not strive to eliminate it from society. This situation clearly demands stakeholders' perspectives on early marriage in Nepalese context and this has led me to choose this area for the study. The study aimed to find out the situation of child marriage at study site and explore the perspective of survivors about early marriage.

### **Methods**

The study was based on mixed design. The researcher had used both qualitative and quantitative methods to collect information required for this study. The study populations for this study were mainly the school attending girls and the married women who were 15 to 24 years of age. Moreover, some other stakeholders like school teachers, elected local politicians and the in-charge of the local health post were interviewed. The total number of respondents were 114, out of which 100 girls and women of 15 to 25 years of age, 08 school teachers from local school, 2 staffs (male and female) from local health post and 03 elected ward members including the ward chairperson were chosen by purposive sampling technique.

Required information was taken by applying interview and FGD. The respondents were taken individual interview and four FGDs among girls and women, school teachers, and health post

staffs and newly elected politicians at ward level. Before making final tools, sample of interview schedule was developed and administrated among 20 respondents as pre-test and was analyzed minutely. It was then improved as per need and FGD guideline was prepared upon objectives to be achieved. To ensure rapport relationship, an informal sharing with different stakeholders was organized to develop the understanding of the whole process of data collection.

The data collected from the respondents were entered in SPSS program. Then the data were tabulated and calculated using SPSS and MS Excel program. However, for qualitative data, thematic analysis was used.

Under ethical consideration, working relations with stakeholders was strictly maintained. Privacy, use and protection of information, respect to different customs and culture were strictly maintained within the premises of research ethics.

## Results

### *Information Regarding Marriage*

The married respondents were asked individually at what age they were married themselves. Out of 78 married respondents, 39 respondents said that they were married before 18 years of age, 19 respondents before 20 and about 19 after 20 years. It shows that majority of respondents themselves were married before legal age as declared by Nepalese law. Regarding the persons who were responsible behind marriage as respondents told was as following:

Table I  
*Responsible Person for Early Marriage*

<b>Responsible Person for ECM*</b>	<b>Number of respondents</b>	<b>Percent</b>
Father	29	42.64
Mother	12	17.64
Self-eloped	14	20.58
Lover	03	4.41
Friends	17	25.0
Other relatives	19	27.94

\* Multiple responses

The above table shows that fathers, relatives and friends were responsible for their early marriage. It also shows reality of power dynamics in the families and community. While doing FGDs the women respondents who were compelled to do marriage against their intension expressed that:

*We were not even informed about our marriage. It was decided by our family members. We did not have even choice to refuse the proposal. This happens even now in most of the families though it seems decreasing.*

School teachers in the same regard said that they always tried their best to postpone marriages and even got success in some cases but for this they had to be informed prior to

marriage. However, they opined that the trend is decreasing day by day. Regarding same perspective, school girls said that:

*Time has changed now and nobody can impose us to do against our wish. However, we have to be careful to convince our parents that early marriage causes several damages in our life.*

The staffs of local health post and locally elected members in the same regards viewed that it used to happen in the past but now it has become liberal and parents seen less dominant to their siblings. Pressure groups in the community have played worthy role to convince parents in need.

### **Effects of Child Marriage**

In order to find effects of child marriage, the respondents were asked about types of effect that they had to bear at personal level. They responded as following:

Table 2

#### *Effects of child marriage*

<b>Effects of Child Marriage</b>	<b>Number of respondents</b>	<b>Percent</b>
Health problem including sickness and injuries	28	41.17
Problem during pregnancy	17	25.00
Workload in the families	42	61.76
School drop-out	06	08.82
Deprivation of opportunity	49	72.05
Problems in self-dependent	56	82.35

\*Multiple responses

If we see the response that is shown in table no. 2, it is seen that problems to become self-dependent and deprivation of opportunity are the major effects that respondents had to face in their life. Workload in the families seems another effect to be faced followed by health problems to be experienced.

Pregnancy related complications seem another risk that happened among significant number of respondents. It indicates that the respondents, who got early marriage for various reasons, had to face many challenges at personal level and in the families. While doing FGD these school girls said,

*We have witnessed several problems among those who were either compelled to do marriage against their will or did marriage on their own. Problem ranges from dependency to various health problems. Some cases even have to face domestic violence and breakups. Problems are most visible in poor families.*

This version reveals about various effects caused by early marriage in study area. Regarding maternal morbidity in the household, 51.28% said that they had to face bleeding during their pregnancies, while 10.25% reported postpartum bleeding and 16.66% complications during pregnancies. Likewise, 37.17% reported less RBC and weakness during pregnancy. This shows that early marriage can contribute to maternal morbidity in many ways.

Regarding child morbidity, 26.92% respondents said that they had to bring their children to health facilities for treatment for different diseases. For them, it was due to their workload in

the families that caused less focused on their children. Out of total mothers, 5.12% had to face even miscarriage during their prenatal periods.

#### Respondent's perspective

Incidence of teen age marriages and pregnancies continue to be significant among all the caste groups. Although the government of Nepal considers 20 as an eligible age for marriage among couples, there were incidences where couples in all caste communities got marriage before they turned to 20 years. Teenage marriages and pregnancies were found prevalent among all caste groups though it seemed more or less among them. However, the practice as said by the respondents was on downwards. They opined that the situation still warrants continuing attention and intervention.

Regarding the perception on age of marriage, Dalit and Magar informants were found to be in favor of early marriage in comparison to the Brahmin informants. In addition, the Dalit informants preferred certain age difference between couples about to get married. The scenario was somewhat different in Brahmin and Magar communities, as they were found to accept same age marriage partner. However, one thing to be noted from the finding is that the young informants of all the ethnic communities seemed increasingly to be in favor of delayed marriage. This was an indicator of a progressive trend towards delayed marriage.

#### Discussion

The highest rate of early marriage is seen in Southern Asia. UNICEF (2014) states 56% in Southern Asia, 46% in Central and Western Africa and only 14% in Central and Eastern Europe. The report of this scenario is 52% in Nepal. Gautam (2016) states that women with no or less education and living in rural areas are more likely to be married as compared to those living in urban areas. However, a research conducted on behalf of Plan Nepal, Save the Children and World Vision International Nepal (2012) presents a bit different situation. The report shows average prevalence of child marriage among both sexes less than fifty percent (46.2%). It is perhaps due to the different contexts of study. However, the report states similar finding of high prevalence of early marriage among Janjatis and dalits.

Gangoli and Chantler (2009) find families and belonging communities as decision makers behind child marriage incidence. However, Danna (2009) sees the eligibility requirement of marriage contextual to belonging culture, country or even regions.

Winkiest and Akhtar (2000) view early marriage from high fertility perspective adding that age at first marriage has a marked effect on childbearing because women who marry early have, on average, a longer period of exposure to the risk of becoming pregnant and a greater number of lifetime births. Silwal (2011) point outs the complications to be faced by mothers stating that some women lose the fetus even before being born or shortly after birth, while some lose both their life and that of the baby.

Ahmad (2012) states early age at child-bearing has negative ramifications on the women's and child's health. These factors are known to be associated with multiple adverse health conditions both for the women in this age group and for the newborns.

## Conclusion

The issue of child marriage at present is still seen critical. Early age at child-bearing has negative ramifications on the women's and child's health. These factors are known to be associated with multiple adverse health conditions both for the women in this age group and for the newborns. The adverse health conditions include, first children born to young mothers being more predisposed to illness and death. Second, teenage mothers being more likely to experience complications during pregnancy and less likely to be emotionally, physically and psychologically prepared to deal with pregnancy related challenges, which often leads to maternal illness and death. Third, their early entry into reproduction and child bearing denies them the opportunity to pursue academic and/or professional goals and is simply inhibitive to any prospects of professional careers. This conclusion reveals that though the informants' beliefs are becoming increasingly progressive on marriage and pregnancy, the practice of child marriage is still prevalent in the study site.

## References

- Ahmad, A.M. (2012). *Primary antenatal care services, maternal health and birth outcomes in rural Pakistan*. A PhD dissertation submitted to the Faculty of Medicine, Dentistry and Health Science. Australia: The University of Melbourne
- Bajracharya, (2014). *Nepal adolescent's development and participation baseline survey*. Final report, Population Council. New York, 2014
- Central Bureau of Statistics (Nepal) and UNICEF, Nepal (2015). *Nepal Multiple Indicators Cluster Survey, 2014: Final report*. CBS, Kathmandu.
- Danna, D. (2009) from [http://ijfs.padovauniversitypress.it/system/files/papers/20\\_I\\_03.pdf](http://ijfs.padovauniversitypress.it/system/files/papers/20_I_03.pdf)
- Gangoli, G. & Chantler, K. (2009). Protecting victims of forced marriage: Is age a portative factor? *Feminist Legal Studies*, 12(17) 266-288
- Gautam, K. (2016). *Practice and perception of people on maternal health*. An unpublished PhD dissertation submitted to the Faculty of Education, Tribhuvan University, Nepal.
- Maharjan, R.K., Karki, K.B., Shakya, T.M. & Aryal, B. (2012). Child Marriage in Nepal. Retrieved from [https://www.wvi.org/sites/default/files/Child%20Marriage %20in%20Nepal-%20Report.pdf](https://www.wvi.org/sites/default/files/Child%20Marriage%20in%20Nepal-%20Report.pdf)
- MoHP (2011). *Annual report: Department of Health Services 2066/67 (2009/2010)*. Kathmandu, Nepal: Ministry of Health and Population.
- O'Hara, K.J. (2019). Literacy Rates are improving in Nepal. Retrieved from <https://www.worldvision.org/education-news-stories/literacy-rates-improving-nepal>
- Silwal, M. (2011). *Maternal health care practices among indigenous people of Nepal: A case study of the Raute community*. Master of Philosophy in Indigenous Studies, Faculty of Humanities, Social Sciences and Education University of Tromsø.
- UNICEF (2014). *Ending child marriage: progress and prospects*. New York: UNICEF
- UNICEF (2017). *Effect of child marriage on girls, dropouts in Nepal: analysis of data from the multiple indicators clusters survey*. UNICEF Nepal working paper series, 2017.
- Winkvist, A. and Akhtar, H. Z. (2000). "God should give daughters to rich families only: Attitudes towards childbearing among low-income women in Punjab, Pakistan." *Social Science and Medicine* 51: 73-81.

## Factors Associated with Non-Use of Contraceptives among Married Women in Nepal

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### ABSTRACT

Most of the family planning services are being provided free of cost in Nepal however the rate of service utilization appears unsatisfactory. This paper aims to assess the factors that are associated with non-use of family planning services among currently married women of reproductive age. The data for this paper are extracted from the Nepal Demographic and Health Survey (NDHS), 2016. Altogether 9875 currently married women of reproductive age were included in this analysis. Bivariate and multivariate analysis were performed to explore the association of socio-demographic characteristics with non-use of contraceptives. Almost a half of the sampled currently married women (47%) were non-users of contraception. Married women aged below 25 years (aOR=2.07, 95% CI 1.75-2.44) and aged 25 to 34 year (aOR=1.15, 95% CI 1.02-1.29) were more likely to not use contraceptives compared to women aged 35 or above years. Janajati were less likely to be non-user of contraception compared to Brahmin/Chhetri (aOR=0.73, 95% CI 0.64-0.83). Muslim women were less likely to use contraception (aOR= 2.45, 95% CI 1.9-3.2) compared to Hindu women. Likewise, women who did not work currently were more likely to not use contraceptives compared to currently working women (aOR=1.47, 95% CI 1.32-1.63). Similarly, poor women were less likely to not use contraception compared to rich women (aOR=1.15, 95% CI 1.01-1.32). Similarly, women who had no autonomy were more likely to be non-user of contraceptive (aOR=1.16, 95% CI 1.01-1.32) than those who had high autonomy. Women who had not heard family planning message from TV in last few months were more likely to not use contraceptives (aOR=1.16, 95% CI 1.02-1.31) than those who had heard after controlling other socio-economic variables. Women aged less than 25 years, Muslim women, currently not working and having poor wealth status, having no autonomy in household decision making, who did not watch FP message in TV were more likely to not use contraceptive methods compared to their counterparts. Thus, family-planning-related interventions need to be more focused among younger aged women, women having no or less autonomy in decision making, poor and jobless women and Muslim women. Furthermore, women empowerment initiatives (employment opportunities) tied up with family planning programs would be beneficial to increase contraceptive uptake among married women of reproductive age.

**Keywords:** Contraceptives, family planning, married women, socio-demographic characteristics

### Introduction

Despite the various efforts of the Government of Nepal [GoN] and other stakeholders, the utilization of family planning [FP] services is not satisfactory although they are available free of

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cost (Department of Health Services [DoHS], 2018). Data from the latest survey report shows that more than a half (53%) of currently married women of reproductive age had used FP method, of whom 43 percent and 10 percent had used modern and traditional method respectively in 2016 (Ministry of Health; New ERA; & ICF, 2017). Many women from developing countries use contraceptives to prevent unplanned and unwanted pregnancies. Data show that there has been a gradual increase in utilization of contraceptives from 10 to 50 percent between the 1960s and the 1990s (Korra, 2002). Regardless of the enormous benefits of family planning services, their utilization still remains low in developing countries resulting into high rates of unwanted pregnancies, unplanned deliveries, unsafe abortions and maternal mortalities (Chaudhary, Dangol, Rai, & Rai, 2016). The Nepal Demographic and Health Survey [NDHS] 2016 shows that after an impressive increase in national contraceptive prevalence rate (CPR) in use of modern methods from 26 percent in 1996 to 44 percent in 2006, there has been no increase over the past 10 years; CPR remaining stagnant at 43 percent from 2011 to 2016. The CPR varies with age from 23 percent among currently married women aged 15-19 to 69 percent among women aged 35-44. Modern contraceptive use peaked at 58 percent among currently married women aged 40-44 and then declined slightly to 56 percent among women aged 45-49 (Ministry of Health; New ERA; & ICF, 2017).

The International Conference on Population and Development [ICPD] in Cairo, Egypt in 1994 declared a key message on fertility reduction at any cost to ensure human right for women (Sutherland, 1994) and the Constitution of Nepal, 2015 has also offered 'right to live with dignity, right to safe motherhood and reproductive health; and equal access to health services' to all citizen including women (Nepal Law Commission, n.d.). Various activities were being implemented for ensuring the right of women by the GoN however output was below the expectation despite making various regular efforts. NDHS, 2016 shows that 24 percent of the married women had an unmet need for FP, i.e. women want to delay or limit their childbirth but they are not using any contraception. Similarly, nearly 60 percent of the users discontinued the FP method they adopted (Ministry of Health; New ERA; & ICF, 2017). CPR of modern method of contraception was 44 percent in the fiscal year 2073/74 even though the FP services are being delivered from hospitals, primary health centres, health posts, outreach clinics, other community-based and charity-based clinics/hospitals and Female Community Health Volunteers [FCHVs] (Department of Health Services, 2018).

Appropriate use of contraceptive prevents unwanted birth, protects the health of mother and child and promote well-being of women (Health Policy Project, n.d.). The World Bank (2015) claims that one in every 200 women die from pregnancy and or delivery related health problems in Nepal (Health Policy Project, n.d.). Family planning is not only issue of women's right rather indicator of gender equality, child health, education as well as one of the means of poverty reduction (Ministry of Health; New ERA; & ICF, 2017). High rates of CPR indicate not only the positive health but a symbol of prosperity and development. The Family Health Division [FHD] under the DoHS is mainly responsible to meet the goal of FP programme and various governmental and non-governmental organizations are also supporting FHD to meet the targets as per the national and international commitments made by GoN. The main aim of the FP programme is to increase the access to quality health service including FP services without financial hardship (GoN/DoHS, 2018).

A hospital-based study conducted at Nepal Medical College Teaching Hospital in 2008 shows that out of 200 surveyed women, 78 percent were aware about Depo Provera, followed by pills (74 percent), and condoms (71 percent). Side effects were the main cause of non-use and discontinuity of contraceptives (Tuladhar & Khanal, 2008). Similarly, the NDHS 2016 shows that almost all respondents had knowledge about FP methods. Almost all surveyed women (99 percent) had knowledge about injectables followed by female sterilization (98 percent), condoms (96 percent) and oral contraceptives (93 percent) (Ministry of Health; New ERA; & ICF, 2017).

## Methods

Data for this secondary-research paper were drawn from Nepal Demographic and Health Survey (NDHS, 2016). The 2016 NDHS, a nationally representative sample survey, provides up-to-date and reliable data on fertility and family planning, child mortality, children's nutritional status, utilization of maternal and child health services, domestic violence, and knowledge of HIV/AIDS. The 2016 NDHS was carried out under the aegis of the Population Division of the Ministry of Health and Population. A set of validated questionnaires was used to collect the information from married women of reproductive age. Verbal consent was taken prior to interview from respondents. The study protocol was reviewed and approved by Institutional Review Board in Maryland, USA and Nepal Health Research Council. Data were collected during 19<sup>th</sup> June 2016 to 31<sup>st</sup> January 2017 (Ministry of Health; New ERA; & ICF, 2017).

The required sample size for the NDHS was calculated based on National Census 2011 implemented by Central Bureau of Statistics [CBS] Nepal as per the rule of statistics and representativeness of the country by selecting urban-rural, provinces including geo belts. Altogether 12,862 women of reproductive age [15-49 years] were interviewed. This paper selected 9875 currently married women as the sample population. There were six different questionnaires, including the women questionnaire [WQ]. The variables included in the WQ were related to background characteristics, pregnancy, family planning, fertility, natal care, breast feeding, immunization and childhood illness, women's employment status and husband's characteristics and domestic violence. Details of survey methodology can be obtained from NDHS report (Ministry of Health; New ERA; & ICF, 2017).

The independent variables were women's autonomy in household decision, age group, ethnicity, education, religion, province, place of living, desire for children, information about family planning, currently working and wealth status of the respondents whereas family planning was the dependent variable. Univariate, bivariate and multivariate analysis were applied to the data. Initially, univariate or descriptive analysis was used to describe the respondents' socio-demographic characteristics. Bivariate analysis was performed to show the association between dependent and independent variables. Then, after controlling for the socio-demographic and economic variables, multivariate analysis in the form of logistic regression was used to identify whether independent variables affected the women's likelihood of not using contraception. Three logistic regression models were used in the analysis. For the analysis, statistical software, SPSS version 20 was used.

## Results

### Background characteristics of women of reproductive age group

More than a fourth of women had no autonomy in household decision making (Table 1). Almost a fourth of them were aged 15-24. About a third of them were Janajati followed by

Brahmin/Chhetri. Two out of the five women had no formal education. An overwhelming majority of the women followed Hinduism. More than a fifth women lived in Province 2 (higher than in other provinces). Two-fifth of the women resided in rural areas. One out of seven women wanted more children after 2 years followed by ten percent desiring more children within 2 years. Two-third of the women were currently living with their husband.

Only a third of the women had heard about family planning from radio (34%) and TV (33%) in the last few months. Similarly, just over 10 percent of the women (11%) have heard of FP from newspapers/magazines in the last few months. Three out of the five women (60%) were currently working. Nearly two-fifth of the women (37%) were poor.

Table 1

*Background characteristics of respondents*

<b>Variables</b>	<b>Attributes</b>	<b>Percent</b>	<b>Number</b>
Women's autonomy in household decision	No autonomy	27.5	2713
	Moderate autonomy (involved in 1-2 issues)	34.8	3440
	High autonomy (involved in all 3 issues)	37.7	3722
Age group	Less than 25 years	24.2	2389
	25-34	37.3	3683
	35 or above	38.5	3803
Ethnicity	Brahmin/Chhetri	31.1	3073
	Janajatis	34.5	3408
	Dalit	12.8	1265
	Other	21.6	2129
Education	No education	40.3	3984
	Primary	18.8	1853
	Secondary or above	40.9	4038
Religion	Hindu	86.6	8552
	Buddhist	4.7	463
	Muslim	5.1	505
	Kirat/Christian	3.6	355
Province	Province 1	16.8	1655
	Province 2	22	2168
	Province 3	19.4	1920
	Gandaki (Province 4)	9.6	950
	Province 5	17.7	1749
	Karnali (Province 6)	5.9	586
	Province 7	8.6	846
Place of residence	Urban	61.1	6031
	Rural	38.9	3844
Desire for more children	Wants within 2 years	10.4	1031
	Wants after 2+ years	13.7	1355
	Unsure timing/undecided	2.8	275
	Wants no more/Sterilized/infecund	73	7213
Currently residing with husband	Staying elsewhere	34	3353
	Living with her	66	6521
Heard FP information on radio in the last few months	No	66.1	6526
	Yes	33.9	3348

Variables	Attributes	Percent	Number
WatchedFP related information on TV over last few months	No	66.7	6586
	Yes	33.3	3289
ReadFP information in newspaper/magazine in last few months	No	89.1	8802
	Yes	10.9	1072
Currently working	No	41.1	4060
	Yes	58.9	5815
Wealth index	Poor	36.8	3632
	Middle	21.1	2088
	Rich	42.1	4154
<b>Total</b>		<b>100</b>	<b>9875</b>

### **Currently Married Women and Non-use of Contraception**

Bivariate analysis showed significant association of non-use of contraception with women's autonomy, age group, ethnicity, education, religion, province and place of residence, desire for more children, current living status with husband, awareness on FP from radio, TV and newspaper, working status and wealth index. Current non-use of family planning was significantly higher among women with no autonomy in household decision making (57%) compared to those who had either moderate autonomy (41%) or high autonomy (47%) ( $p < 0.001$ ). Non-use of FP was inversely proportional to age (71% among women who were less than 25 years, 48% among 25-34 years old and 32% in 35 years or above,  $p < 0.001$ ) which was also statistically significant. Similarly, current non use of family planning was significantly higher among women who were illiterate (42%,  $p < 0.001$ ), Dalit (52%) or Muslim (70%) ( $p < 0.001$ ).

Likewise, in Table 2 a significantly higher percentage of women who lived in Province 2, Province 4 and Province 5 (52% each) were currently not using any of the family planning methods than their counterparts ( $p < 0.001$ ). Likewise, a significantly higher percentage of women residing in rural areas (51%) were current non users of family planning than their comparison group ( $p < 0.001$ ). A significantly higher percentage of the women who wanted to have children within 2 years (87%) than women who were unsure about the timing (yet to decide when to give birth, 67%) and who desired children after 2 years (66%) were currently not using any family planning methods ( $p < 0.001$ ). On the contrary, above three-fifth of the women (63%) who wanted no more children/who were either sterile/infecund were still using family planning methods ( $p < 0.001$ ). A significantly higher percentage of women who were staying away from their husband (76%) were current non-users of FP than their counterparts ( $p < 0.001$ ). Almost a half (49%) respondents who had heard information related to family planning over the last few months from radio did not use contraception for birth control ( $p < 0.001$ ). Likewise, nearly the same percentage of the respondents who had gained FP from TV over the last few months did not use contraception ( $p < 0.001$ ). In the same way, 48 percent of the respondents who had read information regarding family planning from newspaper or magazine within few months did not use contraceptives ( $p < 0.001$ ). Role of field workers did not seem to influence the utilization of contraceptives. Fifty-five percent of the married women who were working did not use family planning methods ( $p < 0.001$ ). Similarly, more than a half of the married women who belonged to middle wealth status did not use contraception ( $p < 0.001$ ), see Table 2.

Table 2  
*Currently married women and non-use of contraception*

Variables	Use of Contraception (%)		Total	
	Use any method	Currently non-use	%	N
Women's autonomy in household decision ***				
No autonomy	43.0	57.0	100	2713
Moderate autonomy (involved in 1-2 issues)	59.2	40.8	100	3440
High autonomy (involved in all 3 issues)	53.5	46.5	100	3722
Age group ***				
Less than 25 years	29.4	70.6	100	2389
25-34	51.8	48.2	100	3683
35 or above	68	32	100	3803
Ethnicity ***				
Brahmin/Chhetri	54.3	45.7	100	3073
Janajatis	56.9	43.1	100	3408
Dalit	47.5	52.5	100	1265
Other	46.2	53.8	100	2129
Education ***				
No education	58.2	41.8	100	3984
Primary	50.4	49.6	100	1853
Secondary or above	48.1	51.9	100	4038
Religion ***				
Hindu	54	46	100	8552
Buddhist	47.4	52.6	100	463
Muslim	30.4	69.6	100	505
Kirat/Christian	56.4	43.6	100	355
Province ***				
Province 1	55.1	44.9	100	1655
Province 2	47.7	52.3	100	2168
Province 3	60.6	39.4	100	1920
Gandaki (Province 4)	48.5	51.5	100	950
Province 5	48.0	52.0	100	1749
Karnali (Province 6)	51.1	48.9	100	586
Province 7	57.3	42.7	100	846
Place of residence ***				
Urban	54.8	45.2	100	6031
Rural	49.2	50.8	100	3844
Desire for more children ***				
Wants within 2 years	13.3	86.7	100	1031
Wants after 2+ years	33.7	66.3	100	1355
Unsure timing/undecided	32.5	67.5	100	275
Wants no more/Sterilized/infecund	62.5	37.5	100	7213
Currently residing with husband ***				
Staying elsewhere	23.5	76.5	100	3353
Living with her	67.6	32.4	100	6521
Heard family planning on radio last few months ***				
No	51.2	48.8	100	6526
Yes	55.4	44.6	100	3348
Watched family planning on TV last few months ***				

Variables	Use of Contraception (%)		Total	
	Use any method	Currently non-use	%	N
No	50.6	49.4	100	6586
Yes	56.6	43.4	100	3289
Read family planning in newspaper/magazine last few months ***				
No	51.9	48.1	100	8802
Yes	58.1	41.9	100	1072
Currently working ***				
No	45.3	54.7	100	4060
Yes	57.7	42.3	100	5815
Wealth index ***				
Poor	51.4	48.6	100	3632
Middle	49.6	50.4	100	2088
Rich	55.2	44.8	100	4154
<b>Total</b>	<b>52.6</b>	<b>47.4</b>	<b>100</b>	<b>9875</b>

Note: significant at \*\*\*= $p < 0.001$ , NS=Not Significant

### Multivariate Analysis

Adjusted odds ratios (aOR) were calculated from multivariate logistic regression assessing the likelihood of non-use of contraception by selected socio-demographics and three logistic models were run. Demographic and socio-economic characteristics such as age group, ethnicity, religion, province, place of residence, current working status, wealth index and women's autonomy in household decision were included. It is found that age of women, ethnicity, religion, province, currently living with husband, current working status, wealth index and women's autonomy in household decision were significant predictors for non-use of contraception. These variables are still significant predictors after adding desire for more children and exposure to mass media. Reduction of odds ratios in most of the variables in second and third models indicate that desire for more children and mass media exposure are also significant predictors for non use of contraception. In the third model, married women aged below 25 years (aOR=2.07, 95% CI 1.75-2.44) and aged 25-34 year (aOR=1.15, 1.02-1.29) were more likely to not use contraceptives compared to women over 34. In case of ethnicity, Janajatis were more likely to use family planning methods compared to other castes.

Married women having no education or primary level of education were more likely to not use family planning methods compared to women having secondary or higher level of education. Muslim (aOR=2.45, 95% CI 1.9-3.2) and Buddhist women (aOR= 1.56, 95% CI 1.23-1.97) were more likely to not use contraception compared to higher caste Brahmin/Chhetri. Women from all other provinces were more likely to not use any contraceptive compared to Province 7. However, the relationship was significant only in Province 4 (aOR=1.47, 95% CI 1.17-1.86) and 5 (aOR=1.53, 95% CI 1.25-1.88). Women who were not living together with their husband were more likely to not use family planning method than those who were living with their husband (aOR=7.31, 95% CI 6.6-8.1). Women who had no autonomy in household decision making were more likely to not use contraceptives (aOR=1.16, 95% CI 1.01-1.32) while women having some autonomy were less likely to not use family planning methods (aOR=0.88, 95% CI .78-.99) compared to women having high autonomy. Job for women seems a predictor for utilization of family planning devices. Women who did not work currently were more likely

to not use contraceptives compared to women currently working (aOR=1.47, 95% CI 1.32-1.63). Similarly, women with poor wealth status were more likely to not use contraception compared to rich women (aOR=1.16, 95% CI 1.02-1.31). Women who wanted to have a child within two years were more likely to not use contraception compared to the women who wanted no more children (aOR=10.74, 95% CI 8.7-13.2).

Exposure to mass media such as radio, TV and newspapers seemed to influence use of contraception. Currently married women of reproductive age who had heard/watched family planning related information from TV were more likely to not use contraception (aOR=1.16, 95% CI 1.02-1.31).

Table 3

*Multivariate analysis of socio-demographics currently married women and non-use of contraception*

Selected predictors	Model I			Model II			Model III		
	OR	95% CI		OR	95% CI		OR	95% CI	
		Lower	Upper		Lower	Upper		Lower	Upper
<b>Demographic and Socio-economic characteristics</b>									
<b>Age group</b>									
Less than 25 years	3.68***	3.18	4.24	2.09***	1.77	2.47	2.07***	1.75	2.44
25-34	1.47***	1.31	1.64	1.14*	1.01	1.28	1.15*	1.02	1.29
35 or above (ref.)	1.00			1.00			1.00		
<b>Ethnicity</b>									
Brahmin/Chhetri (ref.)	1.00			1.00			1.00		
Janajati	.79***	.69	.89	.75***	.66	.86	.73***	.64	.83
Dalit	1.04	.88	1.22	1.04	.88	1.23	1.01	.85	1.19
Other	.93	.77	1.11	.93	.77	1.13	.88	.72	1.07
<b>Education</b>									
No education	.97	.84	1.09	1.08	.94	1.24	1.00	.87	1.15
Primary	.99	.87	1.14	1.11	.96	1.28	1.05	.91	1.21
Secondary or above (ref.)	1.00			1.00			1.00		
<b>Religion</b>									
Hindu (ref.)	1.00			1.00			1.00		
Buddhist	1.48**	1.18	1.86	1.55***	1.23	1.95	1.56***	1.23	1.97
Muslim	2.67***	2.10	3.40	2.46***	1.91	3.17	2.45***	1.90	3.15
Kirat/Christian	1.18	.91	1.52	1.21	.94	1.57	1.21	.93	1.57
<b>Province</b>									
Province 1	1.19	.97	1.46	1.10	.89	1.35	1.12	.91	1.38
Province 2	1.19	.96	1.48	1.08	.86	1.36	1.07	.86	1.34
Province 3	1.26	1.03	1.53	1.16	.94	1.43	1.22	.99	1.50
Gandaki (Province 4)	1.47**	1.18	1.84	1.45***	1.15	1.82	1.47***	1.17	1.86
Province 5	1.55***	1.27	1.88	1.52***	1.24	1.87	1.53***	1.25	1.88
Karnali (Province 6)	1.22	.95	1.55	1.17	.91	1.51	1.18	.91	1.52
Province 7 (ref.)	1.00			1.00			1.00		
<b>Place of residence</b>									
Urban	.95	.85	1.04	.93	.84	1.04	.94	.85	1.05
Rural (ref.)	1.00			1.00			1.00		
<b>Currently residing with husband</b>									
Staying elsewhere	6.59***	5.94	7.31	7.32***	6.58	8.15	7.31***	6.57	8.14

Selected predictors	Model I			Model II			Model III		
	OR	95% CI Lower Upper		OR	95 % CI Lower Upper		OR	95% CI Lower Upper	
Living with her (ref.)	1.00			1.00			1.00		
<b>Currently working</b>									
No	1.44***	1.30	1.59	1.48***	1.33	1.64	1.47***	1.32	1.63
Yes (ref.)	1.00			1.00			1.00		
<b>Wealth index</b>									
Poor	1.15*	1.01	1.29	1.21**	1.06	1.37	1.15*	1.01	1.31
Middle	1.00	.87	1.14	1.01	.88	1.15	.99	.86	1.13
Rich (ref.)	1.00			1.00			1.00		
<b>Women's autonomy in household decision</b>									
No autonomy	1.32***	1.16	1.49	1.18*	1.03	1.34	1.16*	1.01	1.32
Moderate autonomy (involved in 1-2 issues)	.92	.82	1.02	.88*	.78	.98	.88*	.78	.99
High autonomy (involved in all 3 issues) (ref.)	1.00			1.00			1.00		
Desire for more children									
Wants within 2 years				10.61***	8.64	13.04	10.73***	8.72	13.19
Wants after 2+ years				1.87***	1.59	2.21	1.89***	1.60	2.23
Unsure timing/undecided				2.71***	2.02	3.62	2.70***	2.02	3.62
Wants no more/Sterilized/infecund (ref.)				1.00			1.00		
Mass media Exposure									
<b>Heard FP on radio last few months</b>									
No							1.10	.98	1.23
Yes (ref.)							1.00		
<b>Heard FP on TV last few months</b>									
No							1.16*	1.02	1.31
Yes (ref.)							1.00		
<b>Heard FP in newspaper/magazine last few months</b>									
No							1.13	.95	1.35
Yes (ref.)							1.00		
Constant	0.201***			0.180***			0.147***		
-2 Log likelihood	10987.0			10319.1			10302.7		
Cox & Snell R Square	0.237			0.287			0.288		

Note: significant at \*=p<0.05, \*\*=p<0.01, \*\*\*=p<0.00

**Discussion**

Our analysis shows significant associations between exposure to mass media like radio, TV and newspapers and non-use of contraceptives. Nearly the same result was observed in the USA. Research respondents in the United States who had low level of education, ethnicity/caste (being black), age group of 35 to 44 years, infrequent sexual intercourse, were not currently married or in a relationship, dissatisfied with currently used method and who had lack of

access to contraceptive method were more likely to non-use of contraceptives (Frost, Singh, & Finer, 2004). A randomized control trial in Nepal in 1994 to 1996 showed that practice of individual health education has slightly enhanced the uptake of FP methods. Therefore, mass media may be suitable for disseminating information related to FP to the women of reproductive age (Bolam, Manandhar, Shrestha, Ellis, & Costello, 1998).

NDHS (2006) indicates that there were three main reasons for non-use of contraception. First, fertility-related causes such as infrequent sexual intercourse, menopause, sub-fecund or in-fecund and desire for more child; secondly, method related causes such as health concerns, fear of side effects, lack of access and inconvenience to use of contraceptives and thirdly reason was opposition to FP methods such as respondent's opposition, husband's opposition and religious prohibition (Tamang, Subedi, & Packer, 2010). While NDHS 2016 shows that the causes of discontinuation of contraceptive methods were husband not living together (47%), side effects or health concerns (18%) and desire for children (13%) and others (Ministry of Health; New ERA; & ICF, 2017).

Service providers' knowledge and attitudes are also important for clients. A study shows that overall service providers' knowledge on FP methods was low. Service providers were therefore recommended for additional training to support and improve their knowledge on family planning methods and its side-effects management (Chakraborty, Murphy, Paudel, & Sharma, 2015). Inadequate knowledge and training of health personnel; low level of education; extremes of reproductive age and parity; fear of side effects; lack of knowledge of the clients and lack of partner's consent were associated with non-use of contraceptives in the context of Nigeria (Aghoja et al., 2009). Similarly, exposure to information from mass media, educational level, and family size were predictors for use or non-use of contraceptive (Okezie, Ogbé, & Okezie, 2010).

Some barriers are identified as factors hindering for FP service utilization. Psychosocial barriers, i.e. an opposition to utilize the service due to religion, husband's opposition or personal non-religious reasons were the main barriers followed by economic, cognitive, and physical barriers for the utilization of family planning services (Stephenson & Hennink, 2004). Likewise, lack of awareness about maternal health services, underutilization of maternal health services, social disparities in maternal health are main barriers to utilize health service including family planning service in Nepal (Ranabhat et al., 2019). Therefore, these barriers should be addressed timely to meet the targets of the family planning as well as reproductive health.

## **Conclusion**

Almost a half of the sampled currently married women were non-users of contraception. Socio-demographic factors such as women's autonomy in decision making, age less than 25 years, Dalits and Muslims, residents of provinces 2,4 and 5, living in rural areas, uncertain about timing of pregnancy, husband not living together, jobless, poor and middle level wealth index, and non-exposure to FP related information from TV were the major predictors for the non-use of contraception among currently married women of reproductive age. Thus, FP interventions need to be more focused among younger aged women, poor and jobless women, rural women and women having low or no education. Furthermore, women empowerment initiatives (education and employment opportunities) tied up with family planning programs

would be beneficial to increase contraceptive uptake among married women of reproductive age.

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### References

- Acharya, L. B. (2002). First method of family planning: a neglected information by health planners and service providers in Nepal. *Popline: The Knowledge for Health (K4Health)*. Retrieved from <https://www.popline.org/node/246326>
- Aghoja, C. O., Okonofua, F. E., Umueri, C., Otayohwo, R., Onowhakpor, E. A., & Inikori, K. A. (2009). Factors associated with the knowledge, practice and perceptions of contraception in rural southern Nigeria. *Ghana Medial Journal*, 43(3), 115–121.
- Akinlo, A., Bisiriyu, A., & Esimai, O. (2013). *Influence of Use of Maternal Health Care on Postpartum Contraception in Nigeria* (DHS Working Paper Number 92). Calverton, Maryland.
- Bolam, A., Manandhar, D. S., Shrestha, P., Ellis, M., & Costello, A. M. D. L. (1998). The effects of postnatal health education for mothers on infant care and family planning practices in Nepal: a randomised controlled trial. *BMJ*, 316, 805–811.
- Chakraborty, N. M., Murphy, C., Paudel, M., & Sharma, S. (2015). Knowledge and perceptions of the intrauterine device among family planning providers in Nepal: a cross-sectional analysis by cadre and sector. *BMC Health Services Research*, 15(39), 1–14. <http://doi.org/10.1186/s12913-015-0701-y>
- Chaudhary, T. K., Dangol, B. K., Rai, L., & Rai, M. K. (2016). Predictors of Use of Contraception among Married Women of Reproductive Age in a Rural Area of Nepal. *Journal of Advanced Academic Research*, 3(III), 89–99.
- Department of Health Services. (2018). *Annual Report FY 2073/74 (2016/17)*. Kathmandu. Retrieved from [http://dohs.gov.np/wp-content/uploads/2018/04/Annual\\_Report\\_2073-74.pdf](http://dohs.gov.np/wp-content/uploads/2018/04/Annual_Report_2073-74.pdf)
- Frost, J. J., Singh, S., & Finer, L. B. (2004). Factors associated with contraceptive use and nonuse, United Atates, 2004. *Perspectives on Sexual and Reproductive Health*, 39(2), 90–99. <http://doi.org/10.1363/3909007>
- Government of Nepal, & Department of Health Services. (2018). *Annual Report: Department of Health Services 2073/74(2016/17)*. Kathmandu. Retrieved from [http://dohs.gov.np/wp-content/uploads/2018/04/Annual\\_Report\\_2073-74.pdf](http://dohs.gov.np/wp-content/uploads/2018/04/Annual_Report_2073-74.pdf)
- Health Policy Project. (n.d.). *Family planning in Nepal: Saving lives and improving health*. Washington, DC: USAID; GoN, MoHP and Health Policy Project.
- Hutchinson, P., & Wheeler, J. (2006). Advanced Methods for Evaluating the Impact of Family Planning Communication Programs: Evidence from Tanzania and Nepal. *Sudies in Family Planning*, 37(3), 169–186.
- Kafle, R. B., Dulal, K. P., & Pandey, K. P. (2017). *Continuum of Maternal Health Care and the Use*

- of Postpartum Family Planning in Nepal* (No. DHS Working Paper No133). Maryland, USA.
- Korra, A. (2002). *Planning and Reasons for Nonuse among Women with Unmet Need for Family Planning in Ethiopia*. Calverton, Maryland: ORC Macro.
- Ministry of Health; New ERA; & ICF. (2017). *Nepal Demographic and Health Survey 2016*. Kathmandu, Nepal: Ministry of Health, Nepal.
- Ministry of Health (MoH). (2017). *National Health Policy, 2017 - First Draft*, 1–39. Retrieved from [http://dohs.gov.np/wp-content/uploads/2014/04/NHP-2074\\_policy-01.pdf](http://dohs.gov.np/wp-content/uploads/2014/04/NHP-2074_policy-01.pdf)
- National Health Sector Programme. *National Health Policy 2014* (2014). Nepal. Retrieved from <http://nhsp.org.np/wp-content/uploads/2016/08/New-health-policy-2014-Unofficial-translation.pdf>
- Nepal Law Commission. (n.d.). *Constitution of Nepal 2015*. Retrieved from <http://www.lawcommission.gov.np/en/documents/2016/01/constitution-of-nepal-2.pdf>
- Okezie, C. A., Ogbé, A. O., & Okezie, C. R. (2010). Socio-economic determinants of contraceptive use among rural women in Ikwuano Local Government Area of Abia State, Nigeria. *International NGO Journal*, 5(4), 74–77.
- Stephenson, R., & Hennink, M. (2004). Barriers to Family Planning Service use among the Urban Poor in. *Asia Pacific Population Journal*, 19(2), 5–26. Retrieved from [https://scholar.google.com/scholar?hl=en&as\\_sdt=0%2C5&q=Barriers+to+Family+Plannin+g+Service+use+among+the+Urban+Poor+in+Pakistan&btnG=](https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=Barriers+to+Family+Plannin+g+Service+use+among+the+Urban+Poor+in+Pakistan&btnG=)
- Sutherland, E. G. (1994). Quality of Family Planning Services and Contraceptive Use Dynamics among Limited Mobility Populations in the Western Chitwan Valley of Nepal. Retrieved from [http://www.demoscope.ru/weekly/knigi/tours\\_2005/papers/iussp2005s51558.pdf](http://www.demoscope.ru/weekly/knigi/tours_2005/papers/iussp2005s51558.pdf)
- Tamang, A., Subedi, G., & Packer, C. (2010). The status of family planning and reproductive health. Kathmandu: Center for Research on Environment Health and Population Activities [CREHPA].
- Tuladhar, H., & Khanal, R. M. (2008). Awareness and practice of family Planning methods in women attending Gyne OPD at Nepal Medical College Teaching Hospital. *Nepal Medical College Journal*, 10(3), 184–191.

## Risky Sexual Behaviours of Gender and Sexual Minorities

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### ABSTRACT

The article aims to explore the experiences on the risky sexual behaviours of the gender and sexual minorities in Surkhet district. It is a narrative study based on interview data. Thirty-seven sexual minorities selected through snowball sampling were interviewed and the data were analysed using thematic framework approach. The gender and sexual minorities involve in sexual activity before their maturation at the age below 20. They have multiple sexual partners and have active sex life preferring anal and oral sexes the most. Many of them do not use condom in every sexual contact, do not visit health institutions for regular check-up, and do not test for HIV and other STDs which make them more vulnerable to diseases and poor health. They have made their sexual behaviours at more risk by their sexual involvement with drug users and their monetary involvement in sex. There is diversity in sexual orientations and behaviours among them. So an extensive and in-depth study in this issue is urgently required for the fuller understanding of socio-demographic influence on risky sexual behaviours of sexual minorities.

**Key Words:** Diversity in sex, Gender and sexual minorities, multiple sexual partners, risky sexual behaviours

### Introduction

Sexual minorities are a group whose sexual identity, orientation or practices differ from majority of the surrounding society. The term “sexual minorities” refers to individuals whose sexual orientation is outside the heterosexual mainstream (Crehan & McCleary-Sills, 2015). Usually, sexual minorities comprise of lesbian, gay, bisexual and transsexual/transgender (LGBT) individuals. LGBT is the standard term used by the United Nations to refer to people with non-traditional sexual orientations and gender identities (UNDP/USAID, 2014).

Risky sex is defined as sex with multiple partners, sex without using condom and sex later regretted due to alcohol use (Agius, Taft, Hemphill, Toumbourou, & McMorris, 2013). Risky sexual behaviour is defined as any behaviour that increases the negative consequences or risk of sexually transmitted infections and unintended pregnancies which include early sexual activity, having multiple sex partners, having sex while using alcohol or drugs, and unprotected sexual behaviours (Centres for Disease Control and Prevention, 2010; Cooper, 2014).

LGBT people all over the world continue to face challenges. There are 83 countries and territories in the world that criminalize LGBT activities and relationships and seven countries institute the death penalty for same-sex relationships (ILGA, 2014). Nepal is a largely

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patriarchal society and does not easily accept people of diverse sexual orientations (Greene, Robles, & Pawlak, 2012). So, in Nepal, many people seek to hide same sexual desire and relationships or gender-variant practices (Coyle & Boyce, 2015). The sexual minorities face a myriad of obstacles like discrimination and mistreatment by security forces, sexual assault, harassment, physical violence, physical and psychological threats to emotional trauma such as exclusion from their families and from society (National Human Rights Commission of Nepal, 2013). They are sexually harassed and discriminated while in the process of recruitment and employment (UNDP/ USAID, 2014). They are even not safe within their families too. These minority people have become the victims of human rights violations and thus represent as a vulnerable group (National Human Rights Commission of Nepal, 2013) in Nepal.

The Yogyakarta Principles on human rights in relation to sexual orientation and gender identity (Amnesty International, 2014) enshrine the idea that gender recognition should be based on self-identification of the people instead of the decisions by courts or medical professionals (Young, 2016). But the self-identification with homosexuality is very difficult due to pressures from the family members and traditional norms of the society, which can lead to forced marriages with the partner of the opposite sex (Khadka, 2017), and thus hide their gender identity and sexual orientation (National Human Rights Commission of Nepal, 2013). In such a situation, identification of the sexual minorities in a community is really a challenge.

LGBT populations have not been considered as priority research populations in Nepal (Regmi & Teijlingen, 2015). The data on Lesbian, Gay, Bisexual and Transsexual individuals in Nepal is low (Khadka, 2017). It shows the inadequacy of research in the field of sexual minorities which is more apparent in the remote areas and outside the Kathmandu valley because most of these studies are focused within Kathmandu valley (FHI & BDS, 2001; Greene, 2015; Sharma, 2016). The studies are mainly focused on the LGBT rights and movement in Nepal (Blue Diamond Society/Heartland Alliance, 2013; Knight, 2015; Young, 2016; Khadka, 2017), knowledge on sexual and reproductive health including HIV/AIDS (UNDP/Williams Institute, 2014; Sharma, 2016), and the social and economic issues (Boyce & Coyle, 2013; Coyle & Boyce, 2015; Blue Diamond Society, 2018) of the sexual minorities; but a little work is done in the behavioral aspect of the sexual minorities. There is lack of adequate researches on LGBT lives and history in Surkhet and more specifically the risky sexual behaviours of the sexual minorities. So this study focuses to explore the experiences of the sexual minorities on their risky sexual behaviours.

## **Methods**

It is a narrative study based on interview data. The snowball sampling was used to identify all possible thirty-seven sexual minorities who were living in Surkhet district for minimum a year were interviewed during November to December 2018. The participants were from different socio-economic backgrounds and informed verbal consent was taken before the interview. The data collected through a semi-structured interview guideline was analysed through a thematic framework approach.

## **Results and Discussion**

Five relevant themes on the risky sexual behaviours of the sexual minorities emerged after analysing the interview data based on the variables like first experience of sex, number of sex partners, types of sex, use of condom, drug users as sex partners, money for sex, use of alcohol, and health examination. They are - early sexual activity, multiple sexual partners, diversity in sexual orientation and behaviours, drugs, alcohol and money for sex, and risk of sexually transmitted diseases (STDs).

### ***Early Sexual Activity***

When asked about the age of the sexual minorities when they had the first sex, they had a number of different responses but it was generally before their maturation at the age below 20. Among the thirty-seven participants, two of them replied that they had the first sex when they were just nine years. They said "it was very painful experience and against our will but we did not complain." One of them also said, "It was bleeding from my anus...I was confused what to do". It means that they were sexually abused but could not complain it to others, even to their family members too. The state of confusion in such situation indicates their immaturity and lack of attachment to their parents and other family members. Similarly, the minority people are at the conflicting situations between their own minority values and the dominant values of the public which lead them towards stress processes including experiences of prejudice, fear of rejection, hiding, concealing and internalized homophobia as described in minority stress model (Meyer, 2003) so they cannot easily share their feelings and problems with other people which increase the risk of repeating such behaviours. First sex at an early age is seen linked with life course engagement in risky sexual behaviours which is expected to be associated with increased risk of unintended pregnancies, STDs, and increasing number of sexual partners (Scott, Wildsmith, Welti, et al., 2011) but the sexual minorities during their earlier sexual activities were not aware of these problems and were at the risk of life threatening problems like STDs and HIV/AIDS.

### ***Multiple Sexual Partners***

All the sexual minorities had multiple sexual partners except lesbians. The number of sexual partners ranged from two to more than twenty too. A few of them were even unable to count the exact number of sexual partners due to their sexual contact with a large number of sexual partners as they recalled, "I cannot count all of them, may be as many as thirty."

Nearly half of them had the number between six to twenty. But the lesbians replied that they were faithful with their single sexual partners and wanted to pass their life with them. All the sexual minorities were found involved in sex with their sexual partners that shows their active sexual life but involving in multiple sexual partners is a risky sexual behaviour as it increases the risk of diagnosing STDs (Scott, et al., 2011).

**Diversity in Sexual Orientation and Behaviours**

The sexual minorities were found involving in different types of sex - oral sex, anal sex, vaginal sex, and other types of sexual activities like rubbing vulva, kissing and so on. But the types of sex they preferred most was oral and anal sexes although three of them replied that they had vaginal sex with their opposite sex partners too. The lesbians answered that they perform a number of sexual activities but mostly prefer oral sex and rubbing vulva. The gays claimed the anal sex as the most preferred type of sex but the transsexuals answered to prefer the oral and anal sexes equally. Though the bisexuals were found involving in vaginal sex too, they replied preferring the anal and oral sexes the most. It shows their multiple, overlapped and complex roles which reveal the multiple identities and complexities in sexual orientation and behaviours of the sexual minorities (Galupo, et al., 2015) which accelerates the risk of getting infections and diseases.

**Drugs, Alcohol and Money for Sex**

All the sexual minorities replied that they never used drugs and many of them claimed that they did not have sex with drug users but some of them were not sure whether all of their sex partners were non-users or not. At the same time, six of them claimed that they had sex with drug users too. One of these six participants recalled, "After we had a pleasurable sex, my partner mixed a small piece of something with cigarette and smoked it. He asked me to enjoy it but I didn't. Later on, he replied me that it was Ganja (marijuana)."

It means that they were not only at the risk of using drugs but also vulnerable to sexually transmitted diseases and infections which is also supported by a study that revealed that these people are at higher risk of substance misuse and deliberate self-harm than heterosexual people (King et al., 2008).

They were also asked about the use of alcohol which revealed the mixed responses. Nearly half of them replied that they never used alcohol but many of them were the occasional users of alcohol though two of them replied that they were the regular users. The alcohol users also revealed that they had many sexual encounters while drinking alcohol. The previous epidemiological findings clearly support the strong interrelationships between alcohol and other substance use and risky sexual behaviours with adverse outcomes like STDs (Windle, Sales, & Windle, 2013). So, the sexual minorities using alcohol were at the risk of STDs and HIV/AIDS.

The sexual minorities had no commercial motive for sex though six of the participants recalled that they accepted money after indulging sex with the sex partners. One of these participants recalled, "I've a sex partner who usually gives me money after sex but I never forced him to pay". The next one replied, "Some of my sex partners give me some money; I do not feel good to receive it but I need it." The next others also have similar voices which reveal that they are not the sex workers; they do it to meet their sex desires or to satisfy their sex partners only. Though there is no commercial motive for sex, there is the possibility of commercialization in sex among them as they have accepted money for sex.

### ***Risk of Sexually Transmitted Diseases***

Among all the 37 participants, 17 of them had no infection of HIV and STDs as they tested for it but the next others had never tested for HIV and STDs who are at risk of such infections. It shows that there are different challenges in accessing the testing of HIV and STDs as in a study of Canada that found a number of barriers in testing HIV and sexually transmitted infections among trans men (Scheim & Travers, 2016). Almost all of them replied that they visited health institutions only after getting sick where one of them said that she visits hospital regularly in every six month for health examination. It reveals that they do not have regular health check up against HIV and STDs which creates an unknown environment for infections and diseases and may accelerate HIV and STDs. Though all of them replied that they used condom during sexual contact, still few of them are occasional users only. It means that the possibility of transferring HIV and other STDs among them is still prevalent and their health is at risk as a study shows that transgender people are one of the most affected by the HIV epidemic and are 49 times more likely to be living with HIV than the general population (UNAIDS, 2016). That's why they need to visit health institutions regularly, but the present study shows their irregular health behaviour of visiting health institution and examining their health. The reasons behind it may be a number of factors like low awareness level, less access to health services, low socio-economic status, and so on.

### **Conclusion**

Sexual minorities are a group whose sexual identity, orientation or practices differ from majority of the surrounding society which comprise of lesbian, gay, bisexual and transsexual/transgender individuals. Risky sexual behaviour refers to behaviour that increases one's risk of contracting sexually transmitted infections and experiencing unintended pregnancies. The sexual minorities involve in sexual activity before their maturation at the age below 20. They have multiple sexual partners and have active sex life preferring anal and oral sexes the most, so the sexual behaviour is at risk. Furthermore, many of them do not use condom in every sexual contact with their sex partners, do not visit health institutions for regular check up and do not test for HIV and other STDs which make them more vulnerable to diseases and poor health. They have made their sexual behaviours at more risk by their sexual involvement with drug users and monetary involvement in sex. There are multiple sexual orientations and identities among them, so complexities in understanding their sexual behaviours which demands both extensive and in-depth study in this issue.

## References

- Agius, P., Taft, A., Hemphill, S., Toumbourou, J., & McMorris, B. (2013). Excessive alcohol use and its association with risky sexual behaviour: A cross-sectional analysis of data from Victorian secondary school students. *Australian and New Zealand Journal of Public Health*, 37, 76 - 82. doi: 10.1111/1753-6405.12014
- Amnesty International. (2014). *LGBT rights: The Yogyakarta principles*. Retrieved September 10, 2018 from <https://www.amnestyusa.org/pdfs/YogyakartaPrinciples.pdf>
- Blue Diamond Society. (2018). *Discrimination and violence against lesbian and bisexual women and transgender persons in Nepal*. Retrieved September 12, 2018 from [https://tbinternet.ohchr.org/Treaties/CEDAW/Shared%20Documents/NPL/INT\\_CEDAW\\_NGO\\_NPL\\_30008\\_E.pdf](https://tbinternet.ohchr.org/Treaties/CEDAW/Shared%20Documents/NPL/INT_CEDAW_NGO_NPL_30008_E.pdf)
- Blue Diamond Society/Heartland Alliance. (2013). *The violations of the rights of lesbian, gay, bisexual, transgender, and intersex persons in Nepal*. Retrieved September 11, 2018 from [https://tbinternet.ohchr.org/Treaties/CCPR/Shared%20Documents/NPL/INT\\_CCPR\\_NGO\\_NPL\\_14738\\_E.pdf](https://tbinternet.ohchr.org/Treaties/CCPR/Shared%20Documents/NPL/INT_CCPR_NGO_NPL_14738_E.pdf)
- Boyce, P. & Coyle, D. (2013). *Development, discourse and law: Transgender and same-sex sexualities in Nepal*. Retrieved September 11, 2018 from <http://www.ids.ac.uk/publication/>
- Centers for Disease Control and Prevention (2010). Youth Risk Behavior Surveillance-United States, 2009. *MMWR*, 59 (SS-5). Retrieved from <http://www.cdc.gov/mmwr/preview/mmwrhtml/ss5905a1.htm>
- Cooper, M. L. (2014). Alcohol use and risky sexual behavior among college students and youth: Evaluating the evidence. *Journal of Studies on Alcohol*. doi: 10.15288/jsas.2002.s14.101
- Coyle, D. & Boyce, P. (2015). *Same-sex sexualities, gender variance, economy and livelihood in Nepal: exclusions, subjectivity and development*. Retrieved September 12, 2018 from <https://opendocs.ids.ac.uk/opendocs/bitstream/handle/123456789/5773/ER109>
- Crehan, P. & McCleary-Sills, J. (2015). Brief on violence against sexual and gender minority women. *Violence against women and girls: A resource guide*. Retrieved September 10, 2018 from [http://www.vawgresourceguide.org/sites/default/files/briefs/vawg\\_resource\\_guide\\_sexual\\_and\\_gender\\_minority\\_women\\_final.pdf](http://www.vawgresourceguide.org/sites/default/files/briefs/vawg_resource_guide_sexual_and_gender_minority_women_final.pdf)
- Family Health International [FHI] & Blue Diamond Society [BDS]. (2001). *Rapid ethnography of male to female sexuality and sexual health*. Kathmandu: FHI. Retrieved from [www.hivpolicy.org](http://www.hivpolicy.org)
- Galupo, M. P., Mitchell, R. C., & Davis, K. S. (2015). Sexual minority self-identification: Multiple identities and complexity. *Psychology of Sexual Orientation and Gender Diversity*, 2(4), 355-364. Retrieved from <http://psycnet.apa.org/record/2015-38665-001>
- Greene, M., Robles, O., & Pawlak, P. (2012). *Masculinities, social change, and development*. Washington, DC: World Bank Group.

- Greene, S. (2015). *Gender and sexuality in Nepal: The experiences of sexual and gender minorities in a rapidly changing social climate*. Retrieved September 11, 2018 from [https://digitalcollections.sit.edu/isp\\_collection/2093](https://digitalcollections.sit.edu/isp_collection/2093)
- International Lesbian, Gay, Bisexual, Trans and Intersex Association (ILGA). (2014). *State-sponsored homophobia: A world survey of laws: Criminalization, protection and recognition of same-sex love*. Retrieved from [old.ilga.org](http://old.ilga.org)
- Khadka, P. (2017). *Understanding LGBT rights in Nepal*. Retrieved September 10, 2018 from <https://www.ucanews.com/news/understanding-lgbt-rights-in-nepal-/77966>
- King, M., Semlyen, J., Tai, S., Killaspy, H., Osborn, D., Popelyuk, D., & Nazareth, I. (2008). A systematic review of mental disorder, suicide, and deliberate self harm in lesbian, gay and bisexual people. *BMC Psychiatry*, 8(70). Retrieved September 10, 2018 from <https://bmcp psychiatry.biomedcentral.com/articles/10.1186/1471-244X-8-70>
- Knight, K. (2015). *Bridges to justice: Case study of LGBTI rights in Nepal*. Retrieved September 11, 2018 from <http://www.astraeaoundation.org/uploads/files/Astraea%20Nepal%20Case%20Study.pdf>
- Meyer, I.H. (2003). Prejudice, social stress, and mental health in lesbian, gay and bisexual populations: Conceptual issues and research evidence. *Psychological Bulletin*, 129, 674-697. doi:10.1037/0033-2909.129.5.674
- National Human Rights Commission of Nepal. (2013). *Report to the regional national human rights institutions project on inclusion, the right to health and sexual orientation and gender identity*. Rome: The International Development Law Organization (IDLO). Retrieved September 11, 2018 from [http://www.asia-pacific.undp.org/content/dam/rbap/docs/Research%20&%20Publications/hiv\\_aids/rbap-hhd-2013-nhri-project-on-right-to-health-sogi-nepal.pdf](http://www.asia-pacific.undp.org/content/dam/rbap/docs/Research%20&%20Publications/hiv_aids/rbap-hhd-2013-nhri-project-on-right-to-health-sogi-nepal.pdf)
- Regmi, P. R. & Teijlingen, E. (2015). Importance of health and social care research into gender and sexual minority populations in Nepal. *Asia-Pacific Journal of Public Health*, 27(8), 806–808. doi: 10.1177/1010539515613413
- Schein, A. I. & Travers, R. (2017). Barriers and facilitators to HIV and sexually transmitted infections testing for gay, bisexual, and other transgender men who have sex with men. *AIDS Care*, 29(8), 990-995. doi: 10.1080/09540121.2016.1271937
- Scott, M. E., Wildsmith, E., Welti, K., Ryan, S., Schelar, E., & Steward-Streng, N. R. (2011). Risky adolescent sexual behaviours and reproductive health in young adulthood. *Perspectives on Sexual and Reproductive Health*, 43 (2), 110–118. doi: 10.1363/4311011
- Sharma, S. (2016). Knowledge and attitude regarding HIV/AIDs among sexual minorities of Kathmandu. *Journal of Kathmandu Medical College*, 5(17). Retrieved September 10, 2018 from <https://www.nepjol.info/index.php/JKMC/article/viewFile/18418/14990>
- UNAIDS. (2016). *Prevention gap report*. Retrieved from [http://www.unaids.org/sites/default/files/media\\_asset/2016-prevention-gap-report\\_en.pdf](http://www.unaids.org/sites/default/files/media_asset/2016-prevention-gap-report_en.pdf)

UNDP/USAID. (2014). *Being LGBT in Asia: Nepal country report*. Bangkok: Author. Retrieved from <http://asia-pacific.undp.org>

UNDP/Williams Institute. (2014). *Surveying Nepal's sexual and gender minorities: An inclusive approach*. Bangkok: UNDP.

Windle, M., Sales, J. M., & Windle, R. C. (2013). Influence of alcohol and illicit drug use on sexual behavior. In D. S. Bromberg & W. T. O'Donohue (Eds.), *Handbook of child and adolescent sexuality*, (pp. 253-274). doi: <https://doi.org/10.1016/B978-0-12-387759-8.00010-6>

Young, H. (2016). Trans rights: Meet the face of Nepal's Progressive third gender movement. *The Guardian*. Retrieved September 10, 2018 from <https://www.theguardian.com/>

# Universal Particulars towards Maternal Health Circumstance

Sushil Sharma\*

## ABSTRACT

Maternal health is a crucial health problem in developing countries, especially in low resource settings, rural and poor communities. The main aim of this paper is to critically evaluate and explore the situation of maternal health care in Nepal. After reviewing the literature, I found that there are several direct and indirect causes as well as affecting factors in regarding maternal death in developing and least developed countries. In developing countries, women have been facing different problems during pregnancy and delivery period. Knowledge of maternal health and assessable health facilities are most essential in rural areas to save mothers from preventable maternal death.

**Keywords:** Caring, health service, maternal health, pregnancy, preventable cause

## Introduction

Maternal health is the health of women during pregnancy, childbirth, and post-partum period, which incorporates the health care dimension of family planning, conception, prenatal and postnatal care. Maternal health has been major concern of global community which is very essential for addressing the reproductive health of woman.

If the mothers are unable to get proper maternal health service, death may occurs. Maternal death refers to the death of a woman during her pregnancy or within 42 days of termination of pregnancy. Mostly maternal death occurs in developing countries in comparison to the developed countries (WHO, 2012). Approximately 830 women die per day worldwide of pregnancy related causes, which could have been prevented. Remarkably, 99 percent of maternal deaths occur in developing countries, mostly in low resource settings, rural areas, poor communities, etc (ibid). Mostly, three elements are essential to maternal health promotion prenatal care, natal care and postnatal care (Bhusal, et al., 2015). So, I discuss here some of the crucial issues about the prevention and promotion of the maternal health.

Prenatal period is the process in which an embryo and later foetus develops during gestation. This period starts from fertilization, the first stage in embryogenesis which continues in fetal development until birth. It is recommended that expectant mothers need to receive at least four antenatal visits, in which a health worker can check ill signs of health such as underweight, infections etc so to avoid these risks. Routine examine of the foetus is the most important task. Similarly, they can also develop a birth plan laying out how to reach care and what to do

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in case of an emergency (Hurt, et al., 2005). Poor prenatal care has negative impact on prenatal development. Likewise, poverty, lack of education, less awareness, smoking, alcoholism, etc are the causes of low birth defect. Adequate nutrition is needed. Especially iron and iodine are essential for pregnant mothers and healthy foetus. Mothers who gain less than 20 pounds during pregnancy are at increased risk for having a preterm or low birth weight infant (Ehrenberg, 2000 & WHO, 2003). Mother's ages of 18 and 35 have a healthier environment for a foetus (as cited in Santrock, 2013). Maternal drug use occurs when drugs ingested by the pregnant woman are metabolized in the placenta and then transmitted to the foetus and greater risk of birth defects (Wendell, 2013). Consumption of alcohol and tobacco by pregnant mothers lead to disruptions of the foetus's brain development, interferes with the foetus's cell development (Mattson, 2010 & Espy, 2011 & Ruckinger, 2010).

If a mother is infected with diseases, the placenta cannot filter out pathogens. Viruses such as rubella, chicken pox and mumps are associated with increased risk of miscarriage, low birth weight, and prematurity, physical malformations and intellectual disabilities would occur (Diav, 2011 and Jones, 2003). Low birth weight increases an infant's risk and cognitive and language deficits. It also results in a shortened gestational period and can lead to prenatal complications (Waldorf, 2013). Stress during pregnancy may impact the development of the embryo. Reilly (2017) stated that stress can come from many forms of life as events, exposure to environment, toxin in pregnancy lead to higher rates of miscarriage, sterility, and birth defect (Caserta, 2013 & Proietti, 2013).

Natal period consists of caring the new-born at the time of birth not only the mothers. In pregnancies, if the mother is infected with the virus, 25 percent of babies delivered through an infected birth canal become brain damaged, and 1/3 will die (Nigro, 2011). In the last few weeks before delivery, the health worker assists the woman and her family to decide the place of delivery and make the necessary preparations for safe delivery. Santrock (2013) stated some warning signals or risk factors, likewise, age less than 18 years or more than 35 years for first pregnancy, height less than 145 cm, weight less than 40 kg. or more than 70 kg, history of severe bleeding in the last pregnancy and during labour or postnatal period repeated abortions, twin pregnancy, last baby weight 2.5 kg or less or above 3.5 kg etc. also determine the health of a new born baby. Regular uterine contractions which eventually cause the expulsion of the fetus and the placenta is required to monitor regularly.

This process can be divided into four distinct stages: First stage lasts from the beginning of the strong contractions until the opening of the birth passage i.e. dilatation of cervix. WHO (2010) also focuses the new blade or a pair of scissors should be boiled for 15 minutes and kept in the boiled, covered bowl will be necessary during the first stage. Second stage starts from the dilatation of cervix and ends with the delivery of the baby. In this period continuous encouragement, sips of water to prevent dry lips and mouth should be provided to the mother. In this time the mother should not push hard. Rather she should allow the head to come out slowly. This will help in preventing the tearing of the opening of the birth passage, prevent infection. When the head comes out, the midwife should never pull it but support it.

Third stage lasts from the delivery of the baby till the delivery of the placenta. The third stage is the delivery of the placenta and is the shortest stage. The time it takes to deliver placenta can range from 5 to 30 minutes. In this stage, breastfeeding to baby as soon as she is ready can stimulate a contraction and help placenta separate from womb. Active management of the third stage of labour reduces the relative risk of postpartum haemorrhage (Prendiville, et al., 2000). Fourth stage consists of one hour after delivery. The fourth stage of labour is the first hour following the full expulsion of the placenta. It is a time to rest, eat and drink for the mother and for the baby to be fed, checked, weighed and measured. Normally the first stage in a woman delivering should not last more than 12-14 hours, the second stage 4-6 hours and the third stage 30 to 45 minutes (WHO, 2003).

Postnatal is the period beginning immediately after the birth of a child and extending for about six weeks. It is the time after birth a time in which the mother's body including hormone levels and womb size return to pre pregnancy conditions. It is the time period after delivery of placenta till 6 weeks, during which the genital organs revert to the almost normal or near normal state both anatomically and physiologically. Care the baby and mother must be provided with immediately after delivery. During the postnatal period, a number of physiological and psychological changes take place in the mother's body (WHO, 2010).

Care during postnatal period, breasts are developed and prepared during pregnancy for lactation. The baby should be put to breast within one hour after delivery and should be fed on demand. Adequate rest and sleep are very important for the mother and the baby. It is important that the mother is provided frequent intervals of rest to catch up with the lost sleep. The mother should be encouraged to get up within six to twelve hours after the delivery. The diet of a delivered woman should be nutritious to promote good lactation and to keep her healthy (ibid). The main purpose of the study is to identify the global scenario of maternal health.

### **Methods**

This study is based on secondary data with descriptive type of research design. Here, I have discussed on the maternal health condition in references to the world population data sheet 2016 and 2018. World population data sheet is an internationally representative survey which aims to provide reliable and current data on maternal health. Furthermore, the study has been planned to identify available authentic sources.

### **Results and Discussion**

This study helps us to see whether the results are over focused in one area, which is why writing up our research as we go along can be a helpful process. For each theme or area, I shall discuss how the results helped to answer the objectives, and whether the results are consistent with the expectations and the literature.

### **Global Opportunity towards Maternal Health**

The development and implementation of proven, cost-effective interventions has led to significant improvements in maternal and newborn health over the past decades. There is an opportunity to promote this progress by better targeting and addressing the root causes of poor maternal and newborn health through both known and new packages of interventions. Given increasing competition for finite donor resources, the pathway to impact also requires influencing and supporting country priorities and domestic health financing, including by working more intentionally through national, regional and global levels to accelerate the adoption, adaptation and scale up of intervention packages. There are several factors which need to be considered to improve maternal health in developing countries like Nepal through improving health service utilization, empowering women in society, involving male in maternal health and making service affordable. In promoting maternal health situation Nepal has proved a landmark progress; however, a big leap is yet to be taken ahead. With the global partnership Nepal has also corrected and amended the national policies in line with global standards. Here, some of the major indicators are presented with comparison globally.

Table I

#### *Global maternal health indicator*

	IMR/2018	TFR/2018	CPR/2018	MMR/2016
World	32	2.5	62	216
Africas	51	4.6	35	490
Americas	14	2	74	52
Europe	4	1.6	70	13
Oceania	20	2.3	58	86
Asia	28	2.2	65	122
South Asia	40	2.4	54	176
Nepal	32	2.3	53	258

Source: World Population Data Sheet, 2016 & 2018

Table I signifies that some maternal health indicators like infant mortality rate, total fertility rate, contraceptives prevalence rate and maternal mortality rate of Africas, Asias, South Asias as well as Nepal have been in problematic condition in comparison to Europe and Americas. Specially, developing countries like Nepal face such challenge of maternal health such as, lack of awareness about maternal health services, underutilization of maternal health services, social disparities in maternal health, political instability, low socio economic status of women, teenage marriage and early pregnancy, unavailability and affordability of quality care, superstition and indigenous practice, mal distribution of human resources for health, unsafe abortion and superstition and indigenous practice.

In the context of Nepal, maternal health is a national health priority and improving maternal health. It is given major focus on national development plan of Nepal. The trend of women dying every year in Nepal has been significantly reduced by motivating to achieve the target of second long term health plan i.e. MMR 250 per 100,000 live births by 2017 from 830 per 100,000 live births in 1991 and looks set to drop the millennium development goal (MDG 5) target of 134/ 100 thousands live birth by 2015. This is well known truth that the ladder of progress in maternal health is increasing day by day (WHO, 2017).

### ***Global Facts of Maternal Health***

Nearly 830 women die every day due to complications during pregnancy and childbirth. In developing countries, conditions related to pregnancy and childbirth constitutes the second leading causes of death among women of reproductive age. Women die in pregnancy and childbirth for 5 main reasons: These are: severe bleeding, infections, unsafe abortion, hypertensive disorders, and medical complications like cardiac disease, diabetes, or HIV/AIDS complicating or complicated on pregnancy, more than 135 million women give birth per year. About 20 million of them are estimated to experience pregnancy related illness. The list of morbidities is long and diverse, and includes fever, anaemia, fistula, incontinence, infertility and depression. Women who suffer from fistula are often stigmatized and ostracized by their husbands, families and communities. About 16 million girls aged between 15 and 19 give birth each year. They account for more than 10 percent of all births. In the developing world, about 90 percent of the births to adolescents occur in marriage. In low- and middle-income countries, complications from pregnancy and childbirth are the leading cause of death among girls of 15-19. According to WHO (2017) maternal health mirrors the gap between the rich and the poor less than 1 percent of maternal deaths occur in high income countries. The maternal mortality ratio in developing countries is 239/100000 live births versus 12/100000 in developed countries. Similarly, maternal mortality is higher in rural areas and among poorer and less educated communities.

Most of deaths can be prevented through skilled care at childbirth and access to emergency obstetric care. In Sub Saharan Africa, where maternal mortality ratios are the highest, less than 50 percent of women are attended by a trained midwife, nurse or doctor during childbirth. Women and girls living in fragile states or those in humanitarian crises face some of the highest risks because health systems are often broken in these situations, exposing the most vulnerable. Many women have not visited skilled health professional during pregnancy due to lack of proper knowledge and awareness. Although a large proportion of women see skilled health personnel at least once during their pregnancy, only about half receive the recommended minimum of at least 4 visits during the pregnancy (ibid).

Women who do not receive the necessary check-ups miss the opportunity to detect problems and receive appropriate care and treatment. This also includes immunization and prevention of mother to child transmission of HIV/AIDS. About 22 million abortions continue to be performed unsafely each year. Almost every one of these deaths and complications could have been prevented through sexuality education, contraceptive use, and the provision of safe, legal

induced abortion, and care for complications of unsafe abortions (Caserta, 2013). Reducing the maternal mortality ratio has been slow: Since 1990 the global maternal mortality ratio has declined by only 2.3 percent instead of the 5.5 percent needed to achieve MDG 5 but in some countries, accelerated rates of decline were observed after 2000. This means that with continued efforts, it is possible to end preventable maternal mortality and reach the new SDG. SDG 3 strives to reduce the global maternal mortality ratio to less than 70 per lakh live births by 2030; with no country having a maternal mortality rate twice the global average. The lack of skilled care is the main obstacle to better health for mother (ibid).

### ***Complications Occurs during Pregnancy***

Some women have health problems before they become pregnant that could lead to complications. Whether a complication is common or rare, there are ways to manage problems that come up during pregnancy. Sometimes pregnancy problems arise even in healthy women. Some prenatal tests during pregnancy can prevent from these problems or stop them early. Mainly miscarriage, ectopic pregnancy, incompetent cervix, placental abruption, placenta previa, amniotic fluid, preeclampsia, eclampsia, premature baby or preterm labour, venous thrombosis and foetal alcohol syndrome are seems as a major complication during pregnancy (Bhusal, Bhattarai & Bhaskar, 2015).The main causes are complications due to prematurity, complications during delivery, and infection. Quality of care also remains a challenge.

### **Conclusion**

The birth of a child is a crucial time in the life of women. Mostly in developing countries, conceiving and delivering child is risky. Less attention and lack of clinical attention of labour during childbirth has been the central cause of unsafe motherhood but this tendency is changing nowadays. The growing knowledge on how to initiate, regulate or monitor the physiological process of labour and childbirth has a large impact on it. Likewise, growing understanding on these regards has positive impact on child birth and labour management. In line with this universal particular of maternal health address not only the clinical requirements for a safe labour and childbirth but also meet the psychological and emotional needs of women. It seeks to ensure that women give birth in an environment that is safe from a healthy perspective.

## References

- Bhusal, C., Bhattarai, S., Bhaskar, R. K. (2015). Maternal health in Nepal progress, challenges and opportunities. *International Journal of Medical and Health Research* ISSN: 2454-9142. www.medicalsjournals.com,volume 1; issue 3; October 2015; page no. 68-73.
- Caserta, D. (2013). "Heavy metals and placental fetal-maternal barrier: A mini review on the major concerns". *European Review for Medical and Pharmacological Sciences*. 17: 2198–2206 via PubMed.
- Diav, C.O. (2011). "Prenatal exposures associated with neuro developmental delay and disabilities". *Developmental Disabilities*. 17: 71–84 via PubMed.
- Ehrenberg, H. (2003). "Low maternal weight, failure to thrive in pregnancy, and adverse pregnancy outcomes". *American Journal of Obstetrics and Gynecology*. 189: 1726–1730 via PubMed
- Espy, K. (2011). "Prenatal tobacco exposure: Developmental outcomes in the neonatal period". *Developmental Psychology*. 47: 153–169 – via EBSCO.
- Hurt, H., Brodsky, N.L., Roth, H., Malmud, E., Giannetta, J. M. (2005). "School performance of children with gestational cocaine exposure". *Neurotoxicology and Teratology*. 27 (2): 203–11. doi:10.1016/j.ntt.2004.10.006. PMID 15734271)
- Jones, J. (2003). "Congenital toxoplasmosis". *American Family Physician*. 67: 2131–2137 via PubMed.
- Maternal health in Nepal: progress, challenges and opportunities. Available from: file:///C:/Users/De/Desktop/(PDF)%20Maternal%20health%20in%20Nepal\_%20progress,%20challenges%20and%20opportunities..html [accessed Sep 08 2018].
- Mattson, S. (2010). "Toward a neurobehavioral profile of fetal alcohol spectrum disorders". *Alcoholism: Clinical and Experimental Research*. 34: 1640–1650 – via PubMed.
- Nigro, G., Mazzocco, M., Mattia E., Renzo, G. C., Carta G., & Anceschi, M. M. (August 2011). "Role of the infections in recurrent spontaneous abortion". *The Journal of maternal-fetal & neonatal medicine: the Official journal of the European association of perinatal medicine, The Federation of Asia and Oceania Perinatal Societies, the International Society of Perinatal Obstetricians*. 24 (8): 983 9. doi:10.3109/14767058.2010.547963. PMID 21261443.
- Population reference bureau. (2016). *World population data sheet*. Washington DC: Population reference bureau.
- .(2018).*World population data sheet*. Washington DC: Population Reference Bureau.
- Prendiville, W. J. P., Elbourne, D., McDonald, S. J. (2000). Active versus expectant management in the third stage of labour. *Cochrane Database of Syst Rev*. 2000, CD000007-3
- Proietti, E. (2013). "Air pollution during pregnancy and neonatal outcome: A review". *Journal of Aerosol Medicine and Pulmonary Drug Delivery*. 26: 9–23.

- Reilly, N. (2017). "Stress, depression and anxiety during pregnancy: How does it impact on children and how can we intervene early?". *International Journal of Birth & Parent Education*. 5 (1): 9-12.
- Ruckinger, S. (2010). "Growth in utero and body mass index at age 5 years in children of smoking and non-smoking mothers". *Early Human Development*. 86: 773–777
- Santrock, J. W. (2013). *Life-Span development (14th edition)*. New York, NY: McGraw Hill. pp. 82–83. ISBN 978-0-07-131868-6.
- Sustainable development goals (SDGs). (2015). <https://sites.google.com/site/myagenda21org/the-post-2015-sustainable-development-goals>
- Waldorf, K. M. A. (2013). "Influence of infection during pregnancy on fetal development". *Reproduction*. 146: 151–162 – via PubMed.
- Wendell, A.D. (2013). [doi:10.1097/GRF.0b013e31827feeb9 "Overview and epidemiology of substance abuse in pregnancy"] Check |url= value (help). *Clinical Obstetrics & Gynecology*. 56: 91–96 – via Google Scholar.
- World Health Organization. (2003). Integrated management of pregnancy and child birth: pregnancy, childbirth, postpartum and new born care. *A guide for essential practice*, World Health Organization.
- .(2010). Technical consultation on postpartum and postnatal care. Geneva: Department of Making Pregnancy Safer, World Health Organisation.
- .(2012). 'Accountability for maternal, newborn and child survival: An Update on progress in priority countries. Geneva: World Health Organization.
- .(2017). Maternal mortality [http://www.who.int/gho/maternal\\_mortality-retrieved](http://www.who.int/gho/maternal_mortality-retrieved) Sept., 13, 2017, World Health Organization.

# Perceived Discrimination and Problems Faced by Gender and Sexual Minorities in Kathmandu

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## ABSTRACT

Equality and freedom from discrimination are fundamental human right regardless of sexual orientation, gender identity. Despite a society that is moving forward in acceptance of differences, many young people still maintain uncomfortable and confused attitudes towards non-heterosexual lifestyles. Thus, this study was conducted to assess the perceived discrimination and problems faced by gender and sexual minorities in Kathmandu. Descriptive cross-sectional design and purposive sampling method was utilized to select sample. The study was conducted on Gender and sexual Minorities Forum Nepal, blue diamond society in Kathmandu from 17<sup>th</sup> July to 20 August 2018. Semi-structured self-administered questionnaire was used to collect data, followed by some qualitative interview with selected participants. Among 112 respondents, almost half were gay, one third were transgender women and few were transgender men, lesbians and bisexuals. In workplace more than half (69.1%) were verbally harassed, almost half (45.7%) were denied from job; one third (34.6%) were physically tortured. Majority of the respondents (80.5%) were verbally harassed in educational institutes, most of the respondents (91.7%) in public bathroom and public places, (84.6%) by police, almost half of all (49.4%) were physically tortured and (33.3%) were bullied in school. More than half (62.3%) were denied for house rent. Majority of the respondents (36.5%) accepted discrimination as a fact of life. Despite many supportive laws and provisions, LGBT people still face societal discrimination in Nepal. Thus, its humanitarian that sexual minorities are also a part of society and they have equal right to have dignified life.

**Key words:** bisexual, discrimination, LGBTI, harassment, transgender

## Introduction

Despite a society that is moving forward in acceptance of differences, many young people still maintain uncomfortable and confused attitudes towards non-heterosexual lifestyles (Adhikari, 2018). These attitudes lead to discrimination and oppression of the lesbian/gay/ bisexual/transgender<sup>1</sup> (LGBT) community (Bristowe, et al., 2018). Nepal LGBTI Survey 2013 has shown 4.196% LGBTI population in the country. Composition of the population includes Lesbian- 0.31%, Gay -1.35%, Bisexual- 2 0.1%, Transgender- 2.17%, and Intersex-0.05%. In 2016, they

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<sup>1</sup> Lesbian: Female having sexual relation with female.

Gay: Male having sexual relation with male.

Bisexual: Sexually attracted to both male and female.

Transgender: A person appearing or attending to be a member of the opposite sex, as transsexual or habitual cross-dresser.

were estimated to be about 900,000 (Chhetri, 2017). Whereas among all U.S. adults aged 18 and over, 96.6% identify as straight, 1.6% as gay or lesbian, 0.7% as bisexual, and the remaining 1.1% as “something else” (Jackson, et al., 2016). The government estimates that six per cent of the UK population, around 3.9 million people, identify as lesbian, gay or bisexual (Reed, 2016). In context to Nepal, it is one of the most progressive Asian countries in the matter of lesbian, gay, bisexual, transgender and intersexual (LGBTI) right. In September 2015, Nepal became the first Asian nation to include anti-discrimination laws to protect the LGBTI community against abuse, violence and individuals who identify neither male nor female. Despite the laws in place to protect them, as well as to decrease their violence, LGBTI individuals still face discrimination and problems in education, housing and employment (Knight & Welton-Mitchell, 2013). Furthermore, the perceived discrimination accounted for increased depressive symptomatology among LGBT and accounted for an elevated risk of self-harm and suicidal ideation among LGBT (Almeida et al, 2009). The Nepalese societies still have negative attitude towards sexual and gender minorities and they face discrimination in different places. Thus, we believe that having study about sexual minorities helps to disclose the problem they have been facing and needs action to be done.

### Methods

Descriptive cross-sectional design and purposive sampling method was utilized to select sample. Semi-structured self-administered questionnaire was used to collect data, followed by some qualitative interview with selected participants. A five scale Likert scale was used for assessing the perceived discrimination by LGBTI. Before giving the question for data collection all the participants were oriented about the nature of question and their ability to understand the level of question. Data collector was available every time when they fill form, so that if they have any confusion, that can be easily addressed. The study was conducted on Gender and Sexual Minorities Forum Nepal, Blue diamond society in Kathmandu. There are four branches of blue diamond society in Kathmandu i.e. Baluwatar, Samakhushi, Balaju, and Dhumbarahi. In each organization, the average LGBTI employee is about 28. So the total population is 112. Approval from the blue diamond society authority was taken. Before collecting data, the permission from respondents was taken by using the developed consent form. Self-administered semi structured questionnaire was distributed. Code number was provided to maintain anonymity. Forty five minutes time was provided to answer the questions. The data was collected from 17<sup>th</sup> July to 20 August 2018.

### *The Findings of the study are as follows*

Table I

<i>Socio demographic characteristics of respondents</i>		<b>n=112</b>
Description	Frequency	Percent
<b>Age in years</b>		
15-19	26	23.2
20-24	32	28.6
25-29	31	27.7
30-34	13	11.6
35-40	5	4.5

41 and above	5	4.5
<b>Gender</b>		
Male	88	78.6
Female	24	21.4
<b>Represented Gender</b>		
Gay	46	41.1
Transgender Women	40	35.7
Transgender Men	17	15.2
Lesbian	6	5.4
Bisexual	3	2.7
<b>Ethnicity</b>		
Brahmin/ Chhetri	47	42
Janajati	57	50.9
Dalit	8	7.1
<b>Religion</b>		
Hindu	84	75
Buddhist	23	20.5
Christian	5	4.5
<b>Educational Status</b>		
Basic level (1-8)	23	20.5
Secondary level (9-12)	60	53.6
Higher education	19	17
Can read and write	10	8.9
<b>Occupation</b>		
Social worker	42	37.3
Sex worker	35	31.3
Student	21	18.8
Business	9	8
Others	1	0.9

Table I reveals the socio demographic data of respondents. Among 112, most of the respondents represented age group 32 (28.6%) on 21-25 age group and least 1 (0.9%) on 51-55 age group. The majority of the respondents were male 88 (78.6%) and female i.e. 24 (21.4%). The majority represented gender of the respondent were gay 46 (41.1%), transgender women 40 (35.7%), transgender men.17 (15.2%), lesbian 6 (5.4%) and bisexual 3 (2.7%). Half of the respondent 57 (50.9%) were Janajati, and Dalit 8 (7.1%). More than half of the respondents' education level was secondary 60 (53.6%) and those who can read and write were 10 (8.9%). The majority 42 (37.3%) of the respondent were social worker and sex workers 35 (31.3%).

Table 2

*Discrimination and problems faced by gender and sexual minorities*

Description	Frequency	Percent	Description	Frequency	Percent
Experience of discrimination in job (n=91)			Experience of discrimination in educational institute (n= 87)		
Verbally harassed	56	69.1	Verbally harassed	70	80.5
Denied from a job	37	45.7	Physically torture	43	49.4
Physically torture	28	34.6	Bullying	29	33.3
Been fired from job	25	30.9	Sexually harassed	26	29.9
Sexually harassed	25	30.9	Left school	18	20.7
Left job	18	22.2	Expelled or forced out from school	9	10.3
Experience of discrimination in rent (n=94)			Experience of discrimination by police (n=81)		
Denied to give rent	43	62.3	Verbally harassed	33	84.6
Evicted from rent	26	37.7	Assumed you as a sex worker	16	41
Homelessness	25	36.2	Physically harassed	12	30.8
Experience of discrimination in public bathrooms (n=83)			Sexually harassed	12	30.8
Verbally harassed	44	91.7	Forced you to engage in sexual activity to avoid arrest	8	20
Physically harassed	22	45.8			
Sexually harassed	17	35.4			

Note: Multiple response, percentage may exceed 100.

Table 2 shows that most of the respondents perceive discrimination as “verbal harassment”. 84 (75%) at home, the findings further explored by the respondents are

“during in my childhood compare to my sister I

“I don’t know, why every people see us as sex pot, we are also human we have also dignity, but most people either disrespect us or want to use us”. TG 28 years

we are not just for sex, we do have our feeling as well, why people call us *Bhalu*. we have our name”. TG. 25

used to get lots of scold from my parents and relatives” (a transgender female). Adding her another gay shared that he faced bullying at school and home many times because of his low pitch voice. Furthermore, half of the respondent 59 (52.7%) as sexual harassment at office/work place.

Table 3

*Perceived discrimination*

n=112

<b>Description</b>	<b>Almost always (%)</b>	<b>Sometime (%)</b>	<b>Every once in awhile (%)</b>	<b>Rarely (%)</b>	<b>Never (%)</b>	<b>Weighted mean±SD</b>
Treated with less courtesy than other people	32.1	32.1	3.6	10.7	21.4	3.50±1.530
Treated with less respect than other people	30.4	23.2	8	18.8	19.6	3.60±1.402
Received poorer service than other people at restaurants or stores	26.8	21.4	5.4	17.9	28.9	3.87±1.376
People acted as if they are afraid	27.7	17	14	8	33	3.91±1.400
Been called names or insulted	39.3	15.2	8.9	17.9	18.8	3.57±1.450
Been threatened or harassed	26.8	25.9	17	16.1	14.3	3.38±1.333
Been followed around in stores, the street or other places	20.5	29.5	4.5	17.9	27.7	3.82±1.365
Been made fun of	33.9	22.3	8	20.5	15.2	3.47±1.400
Been physically assaulted	20.5	27.7	9.8	17	25	3.74±1.349
People think that you were a sex worker	24.1	25.9	6.3	12.5	31.3	3.87±1.407
People think that you have a mental problem	21.4	26.8	6.3	18.8	26.8	3.81±1.349
People think that you abuse street drugs or alcohol	19.6	24.1	6.3	9.8	40.2	4.08±1.342
People think that you are HIV positive or have an STI	18.8	17.9	7.1	18.8	62.5	4.11±1.237
Thought people felt sorry for you	11.6	37.5	7.1	17	26.8	3.77±1.326
People around you are uncomfortable	14.3	40.2	8.9	8	28.6	3.70±1.147

The table 3 shows perceived discrimination by respondents. More than one fourth (32.1%) people were treated with less courtesy than other people. Most of the respondents (30.4%) were treated almost always with less respect than other people. Almost

*In Bada Dashain (a festival), I am always the last one who got tika from my parents and relatives. TG, 32 years.*

*My brother has inter-cast marriage, but he was easily accepted in family, when my parents knew that I am lesbian, they rejected me from the family. Lesbian, 29 years.*

always (26.8%) threatened or harassed. Nearly one fourth (20.5%) of the respondents perceived physically assaulted. Regarding people think that they are abuse street drugs or alcohol majority (40.2%) selected never. Nearly half of the respondents (40.2%) feel that people around

them are feeling uncomfortable.

Table 4

*Level of perception of discrimination of respondents*

Perceived level of discrimination	Frequency	Percent	Mean	Standard deviation
<sup>2</sup> Higher level of discrimination	33	29.5	43.9643	19.47876
Neutral of discrimination	47	42.0		
lower level of discrimination	32	28.6		

The table 4 shows that majority of the respondents 47 (42%) has neutral level of perceived discrimination, 33 (29.7%) has perceived higher level of discrimination and 32 (28.6%) has perceived lower level of discrimination.

Table 5

*Coping methods of discrimination by gender and sexual minorities*

Description	Frequency	Percent
<b>Response to discrimination</b>		
Accept it as a fact of life	35	36.5
Tried to do something about it	33	34.4
Expressed anger or got mad	24	25
Talked to someone about how you were feeling	21	21.9
Work harder to prove them wrong	14	14.6
Prayed about the situation	10	10.4

The table 5 reveals that majority of the respondent 35 (36.5%) accepted it as a fact of life and 10 (10.4%) prayed about the situation.

*Earlier when people talk about my sexuality, I used to get very angry, but these days I don't care for them. Gay, 26 years.*

<sup>2</sup> High Level -75% above  
Neutral level – 45 to 74%  
Low level – below 45%

## Result and Discussion

Regarding discrimination faced in school/colleges/educational institute, 29 (33%) were bullied, 70 (80.5%) were verbally harassed, 43 (49.4%) were physically harassed, 26 (29.9%) were sexually harassed, 18 (20.7%) left school because of mistreat and 9 (10.3%) were expelled from school. This finding is supported

*People see us like we don't belong to this planet. They see us like we are alien, or human from different world. TG, 30 years.*

by study conducted by Kosciw and Cullen (2001) at national school climate survey, 78% had experienced verbal harassment based on their sexual orientation at school, 58% had experienced verbal harassment based on their gender expression at school, 35% reported experiencing physical harassment based on their sexual orientation and 26% gender identity at school. In addition, 18% experienced physical assault at school because of their sexual orientation and 12% experienced physical assault because of their gender identity at school (CDCP, 2017). According to Jonson (2000), 77% of gay and lesbian college students had experienced verbal insults due to their sexual orientation. Furthermore, 27% experienced threats of physical violence. Similarly, a study by James and Herman dated 2015 at US about Transgender Survey showed that 30% of the respondents reported losing job because of their gender identity, 19% reported being fired, denied a promotion or not being hired for the job, 15% verbally harassed, physically attacked and sexually assaulted at work places, this finding is supported by our study as well. Furthermore, a study by Drydak (2009) shows that gay men faced a significantly lower chance of receiving an invitation for an interview compared to heterosexual male. Whereas, Singh (2010) study revealed a widespread discrimination that continues to shape LGBT people's lives in both subtle and significant ways in 2010, more than half of LGBT people reported being discriminated against by health care providers and more than 25 % of transgender respondents were reported being refused medical care outright. This finding is also supported by the study conducted by Knight and Mitchell (2013) on surveying Nepal's Sexual and Gender Minorities 23.1% were denied for treatment in health care setting.

## Conclusion

Most of the LGBTI accept the discrimination as a fact of life and feel inferior to them. Despite many supportive laws and provisions, LGBT people still face societal discrimination in Nepal.

## References

- Adhikari, A. (2018). Attitude towards transgender among college level students. *paripex-indian journal of research*, 6 (8), 27-34.
- Almeida, J., Johnson, R. M., Corliss, H. L., Molnar, B. E., & Azrael, D. (2009). Emotional distress among LGBT youth: the influence of perceived discrimination based on sexual orientation. *Journal of youth and adolescence*, 38 (7), 1001–1014. doi:10.1007/s10964-009-9397-9
- Australian human right commission (2015). Face the Fact: Lesbian, Gay, Bisexual, Trans and Intersex people. Retrieved from: <https://www.humanrights.gov.au/sites/default/files/FTFLGBTI.pdf>

- Bristowe, K., Hodson, M., Wee, B., Almack, K., Johnson, K., Daveson, B. A., ... Harding, R. (2018). Recommendations to reduce inequalities for LGBT people facing advanced illness: Access are national qualitative interview study. *Palliative Medicine*, 32(1), 23–35. <https://doi.org/10.1177/0269216317705102>
- Center of Disease Control and prevention (2017). Lesbian, Gay, Bisexual, and Transgender Health. *CDCP*, 24 (7).
- Chhetri, G. (2017). Perceptions about the “Third Gender” In Nepal. *Dhaulagiri Journal of Sociology and Anthropology*, 11, 96-114.
- Drso, L. E. (2010). Data move us closer to full equality by speaking for those who cannot: Advocating for LGBT older adults. *International journal of humanitarian*, 1 (2), 16-20
- Drydak, N. (2009). Sexual orientation discrimination in the labor market. *Labor Economics* 16 (4), 364-372. <https://doi.org/10.1016/j.labeco.2008.12.003>
- Jackson, C. L., Agénor, M., Johnson, D. A., Austin, S. B., & Kawachi, I. (2016). Sexual orientation identity disparities in health behaviors, outcomes, and services use among men and women in the United States: a cross-sectional study. *BMC Public Health*, 16 (1), 807.
- James, S. E., Herman, J. L., Rankin, S., Keisling, M., Mottet, L., & Anafi, M. (2016). The Report of the 2015 U.S. Transgender Survey. Washington, DC: National Center for Transgender Equality
- Johnson, M. (2018). College Students' Attitudes toward LGBT Individuals. *LGBTI concern* 12 (7), 67-69.
- Knight, K., & Welton-Mitchell, C. (2013). Gender identity and disaster response in Nepal. *Forced Migration Review*, (42), 57.
- Reed, B., Rhodes, S., Schofield, P., & Wylie, K. (2016). Gender Variance in the UK: Prevalence, Incidence, Growth and Geographic Distribution. *Gender Identity Research and Education Society*.
- Ward B., Dahlhamer J., Galinsky, A., & Joestl S. (2013). Sexual orientation and health among U.S. adults: National health interview survey, National Health Statistics Report. 2013.

## Premarital Sexual Behaviour and its Impact on Health among Adolescents

Ram Bahadur Shrestha\*

### ABSTRACT

More than two-thirds of young people in developed nations have sexual intercourse while still in their teens. The most vulnerable group of premarital sexual behaviour are youths and adolescents. The aim of the study is to assess factors affecting premarital sex behaviours among adolescents and its impact on health. This study is based on the review of secondary information published by the relevant organization and authors in Nepal and beyond. Study materials were primarily identified searching through Electronic databases and Software bases. Age group of 10-19 called as adolescents during the period, there is drastic development in physical, cognitive, social and emotional development. There are multidimensional factors that leads to premarital sexual behaviour. Parent relationship with their children and family environment, societal environment, cultural and traditional rules and values, economic condition, school environment, peer's relationship, love and affairs, communications (mobiles, internet-pone movies etc.) and rules and regulation are the risk factors that affect in premarital sexual behaviour of the adolescents. Sex after marriage is fruitful but having a premarital sex with mutual understanding with full protection is not a big issue. Unwanted pregnancy, teenage pregnancy, abortion, STIs, HIV/AIDS, regrets, guilt, loss of self-respect, depression, loss of family support, substance abuse and even suicidal death are the health impact of premarital sexual behaviour among adolescents.

**Keywords:** Adolescents, premarital sex, social network, risk factor, teenage pregnancy.

### Introduction

Sex is a most beautiful gift of the nature to humans. However, regarding premarital sex, every teen and engaged couples perhaps have common question of "Is it ok to have premarital sex?" The belief of premarital sex was different from each other some think that it is ok and is a natural process to have and some others think that it is however, a crime (Cavendish, 2010).

Premarital sexual behaviour or sex before marriage is the sexual activity practiced by people before they are married. The Bible considers premarital sex as fornication. Fornication is sexual intercourse between people who are not married to each other. Fornication comes from Latin fornicari that means vaulted, which become the nick name for brothel, because prostitutes operated in a vaulted underground cavern in Rome. Alternative terms for premarital are non-marital sex, youthful sex, adolescent sex and young-adult sex (Cavendish, 2010).

Premarital sex, since about the 1960s, has become more widely acceptable, especially in Western countries. According to UNICEF (2001), 10 out of 12 in developed nations more

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than two-thirds of young people have had sexual intercourse while still in their teens. In Denmark, Finland, Germany, Iceland, Norway, the United Kingdom and the United States, the proportion is over 80%. In Australia, the United Kingdom and the United States, approximately 25% of 15 year olds and 50% of 17 year olds have sex. Data from the 2002 survey indicate that by age 20, 77% of Americans had sex by age 20, and of that percent, 75% had premarital sex (Finer, 2007).

Premarital sexual behaviour is not accepted by culturally and socially. The more vulnerable group is unmarried youths and adolescents. Sixteen percent of women age 25-49 had first sexual intercourse by age 15, 54 percent by age 18, and 72 percent by age 20. The median age at first intercourse among women age 25-49 (17.7 years) is only marginally higher than the median age at marriage (17.5 years), suggesting that Nepalese women in general initiate sexual intercourse at the time of their first marriage, with few exceptions (NDHS, 2011). According to Nepal Adolescent and Youth Survey 2010/11, 17% of young unmarried people ever fall in love and this proportion is higher among boys. The mean age at first sexual intercourse for the young population is 17.5 years. About 6% of boys before the age of 15 years were engaged in sexual intercourse. According to study done by FHI 360 in 2001, reported that 15% of adolescent boys engaged in premarital sexual intercourse (Population Division, Government of Nepal, Ministry of Health and Population, 2010). Another study among young by Puri and Cleland in 2006 found that unmarried 35% boys and 16% girls have experience of sex. Likewise, Adhikari and Tamang (2009) in their study found that almost 40% of young men had premarital sex.

Premarital sexual behaviour may lead several health problems i.e. sexually transmitted infections (STIs), human immune virus and acquired immune deficiency syndrome (HIV/AIDS), unwanted pregnancies (especially teenage pregnancy), unsafe abortions, emotional disturbances, baby dumping and maternal deaths (United Nations – Youth, 2003).

Several studies have shown factors related to premarital sex in three interfaces. First, at individual level, this includes demographic factors (age, sex and ethnicity), love, affair, loneliness etc. Secondly, at family level like family type, family income, occupation, broken families and bad parenting. Thirdly, at institutional level, that includes social network, organization, communication (mobile phones, internet, books and magazines, radio and television), policies and laws (World Health Organization, Regional Office South-East Asia)(DN Bhatta, 2013). The overall aim of the study is to assess factors affecting premarital sex behaviours among adolescent and its impact on health.

## **Methods**

This study was based on the review of secondary information published by the relevant organization and authors in Nepal and beyond. Studies were primarily identified searching through electronic data bases (HINARI, PubMed, Google search and Google scholar) and software bases (EndNote X7). Out of 1600 articles, only 15 were used in this study. For selection of English language, having full article that can be freely accessible was set as selection criteria. Furthermore, all types of a study done by researcher in premarital sex among adolescent and youth within a period between 2001 to 2016 were also used as a study selection criteria.

## Results

### **Factor Affecting Premarital Sexual Behaviour**

The important factors that lead premarital sexual behaviour like individual, family, institutional are dealt based on secondary data.

#### **Individual level**

Age, sex, peer relationship, peer pressure, love and affair etc. are significant factors that lead to premarital sexual behaviour. From review of different studies, it is revealed that there are strong relationships between age group and premarital sex. Adolescent of late adolescent especially 18-19 are most common to have premarital sexual behaviour than early adolescents (Table 1). Male are more violent than female and they can express their feeling easily than female especially in south-east countries. Review studies also shows that males are exposed to have premarital sexual behaviour than female (Table 1).

During adolescence naturally, adolescents are more attracted towards opposite sex. Friendship, love and affair are common during adolescence. Different studies show that good peer relationship can trust each other. They can share their problems, happiness, sexual desire, various quarries, feeling etc. Studies also shows, sexual behaviours within good peer were significantly less than the youths having poor peer norms ( $\chi^2 = 22.377$  and  $P < 0.001$ ) (BC, 2013) which is shown in Table 1.

Table 1

*Individual level factor for having premarital sexual behaviour*

S	Study	Study Design	Sample Size	Finding	Remark
			<b>Age</b>		
1	Bhatta DN et al., (Bhatta, 2013)	Cross-sectional study	324	58.60%	18-19 age
2	Mulugeta and Berhane et al	Cross-sectional survey	3984	68.70%	16-18 age
3	BC GB, Basel PL et al (BC, 2013)	Cross-sectional descriptive study	235	13.50%	18-19 age
			<b>Sex</b>		
1	Paudel D. et al., (Paudel, 2013)	cross-sectional descriptive study	400	Male=62.8 and Female=20.9%	
2	Bhatta DN et al., (Bhatta, 2013)	Cross-sectional study	324	Male=32.6% and Female=13.7%	
3	Chai Podhisita, Peter Xenos, and Anchalee Varangrat et al (Podhisita, 2001)	Family and Youth Survey (FAYS)	2179	Male=46.7% and Female=9.0%	
4	BC GB, Basel PL et al., (BC, 2013)	Cross-sectional descriptive study	235	Male=44.8% and Female=4.2%	$\chi^2 = 56.74$ and $P < 0.01$

<b>Peer Relationship/Love and Affaire</b>				
1	Bhatta DN et al., (Bhatta, 2013)	Cross-sectional study	324	Among the boys 57.1% and among the girls 55.6% had the first sexual intercourse with their girlfriends and boy friends
2	L. Gibney et al (Gibney, 2003)	Cross-sectional study	388	Girlfriend= 21.9% (have sex)
3	BC GB, Basel PL et al., (BC, 2013)	Cross-sectional descriptive study	235	Youths who had good peer norms were significantly less likely to experience premarital sex behaviours than youths who had poor peer norm
4	Nafissatou Diop-Sidibe et al.,	Secondary data analysis	2681	61% of females and 55% of males have Boyfriend or girlfriend; reported having such a partner at the time of Overall, 68% of participants had ever had sex
5	Chi Chiao and Chin-Chun Yi et al/ (Yi, 2011)	Taiwan Youth Project survey (data are used, multistage random sampling was drawn and develop two cohorts of students)	3525	Youth who perceived their best friends as being sexually active had higher odds of having premarital sex (OR=2.08)
6	Chi Chiao and Chin-Chun Yi et al (Yi, 2011)	Taiwan Youth Project survey (data are used, multistage random sampling was drawn and develop two cohorts of students)	3525	There are significant association between perceived peer influence, romantic-related characteristics, and context-related factors with adolescent premarital sex engagement remained (OR=54.80)

$\chi^2 =$   
22.377  
and  
P<0.001

### **Family Level**

Family is a group of biologically related persons living together and sharing the common, roof, kitchen and purse. Family environment directly have relationship between premarital sexual behavioural in adolescent period. Review studies show that there is relationship between parent and adolescents. Especially, mother have greater roles than other member in family. From this we can conclude that family environment has direct relationship to have premarital sexual behaviour in adolescents (Table 2).

Table 2

*Family level factor for having premarital sexual behaviour*

<b>S N</b>	<b>Study</b>	<b>Study Design</b>	<b>Sample Size</b>	<b>Finding</b>	<b>Remark</b>
<b>Family Relationship</b>					
1	Susant T. Robert and Barbara L. Kennedy et al (Kennedy, 2006)	Descriptive/ correlation design	100	Parents support were inversely correlated to sexual behaviour	r=-0.218 and P=0.05
2	BC GB, Basel PL et al/. (BC, 2013)	Cross-sectional descriptive study	235	Without relationship=25.8% and with relationship=18.6%	Good Relationship p ( $\chi^2 = 4.57$ and P=0.032)
3	Inazu & Fox (1980) (Miller, 2001)	NA	NA	Closeness of mother/daughter relationship strongly associated with daughter not having intercourse	Synthesis from review article
4	Weinstein & Thornton (1989) (Miller, 2001)	NA	NA	Close mother/child relationships increase effect of mothers attitudes on teen sexual behaviours; if mother has no permissive attitudes, teens least likely to have sex when they have a close mother/child relation	Synthesis from review article
5	Whitbeck et al., (1992) (Miller, 2001)	NA	NA	Parental support related to teen not having intercourse experience	Synthesis from review article
6	Feldman & Brown (1993) (Miller, 2001)	NA	NA	Quality of parent/child relations and positive child rearing practices inversely related to sons' number of sex partners 4 years later	Synthesis from review article

***Institutional Factors***

Adolescent sexual health is multi-dimensional. Their health is related to institutional level also. Like rules and regulation, policies, community leader, community organization, education institutional environment and communication facilities including internet have direct and indirect relationship with adolescent sexual behaviour especially premarital sex.

Referring to finding of review studies, we can conclude that there is a direct relationship within institutional level factor for having premarital sexual behaviour (Table 3).

Table 3

*Institutional factor for having premarital sexual behaviour*

SN	Study	Study Design	Sample Size	Finding	Remark
<b>Communication</b>					
1	Mulugeta and Berhane et al (Berhane, 2014)	Cross-sectional survey	3984	Watching pornographic video [AOR= 10.15, 95% CI: (6.63, 15.53)]	
2	Chi Chiao and Chin-Chun Yi et al (Yi, 2011)	Taiwan Youth Project survey (data are used, multistage random sampling was drawn and develop two cohorts of students)	3525	Youth who had been exposed to pornography were also more likely to engage in adolescent premarital sex (OR=2.03)	
<b>Alcohol Drinking, Smoking and drug abuse</b>					
1	BC GB, Basel PL et al., (BC, 2013)	Cross-sectional descriptive study	235	Alcohol drink=34.6%	$\chi^2 = 27.324$ and $P < 0.001$
2	Chiao et al., (Chiao, 2012)	Cohort study	5,541	Adolescent cigarette use was still significantly associated with higher odds of premarital sex for males only (AOR = 2.0; 95% CI = 1.4-4.0)	
	Chiao et al (Chiao, 2012)	Cohort study	5,541	Adolescent alcohol was significantly related to engaging in premarital sex for females only (AOR = 2.0; 95% CI = 1.4-4.0).	
	Chiao et al., (Chiao, 2012)	Cohort study	5,541	Male college students with heavier adolescent drinking were 2.7 times more likely to have premarital sex than abstainers; this result continued to be found among females categorized as light drinkers (AOR = 2.1; 95% CI = 1.2-3.6).	
3	Bhatta DN et al., (Bhatta, 2013)	Cross-sectional study	324	There was highly significant relationship ( $P < 0.01$ ) between smoking, alcohol drinking, and drug using habit of their peers with the sex	

**Health Impact of Premarital Sexual Behaviour among Adolescents**

Health is a positive, optimal and dynamic state of condition of physical, mental, social and spiritual wellbeing and harmonious development in the absence of disease or infirmity which leads to the enjoyment of socio-economically productive and complete life adjusted to environments (Pradhanaga, 2018). Health of adolescent is very crucial. Any small mistake or any unusual habit practice by adolescents leads to bad health throughout whole life. Adolescence is a life phase in which the opportunities for health are great and future patterns of adult health are established. Health in adolescence is the result of interactions between prenatal and early childhood development and the specific biological and social-role changes that accompany puberty, shaped by social determinants and risk and protective factors that affect the uptake of health-related behaviours (Sawyer, 2012).

Study reflects that different culture and religion do not give permission to have premarital sex. Along with this our society, growth and development of mind towards premarital sex was not

acceptable. Study also reflects that most of people agree that pre-marital sex is a bad habit. Moreover, premarital sexual behaviour among adolescent have direct and indirect impact on health like unwanted pregnancy, teen age pregnancy, abortion, STI, HIV/AIDS, regrets, guilt loss of self-respect, depression, loss of family support, substance abuse, depression, loss of self-esteem and suicidal death (Table 4).

Table 4  
*Health impact due to premarital sexual behaviour*

SN	Study	Study design	Sample Size	Finding
<b>Pregnancy</b>				
1	Mulugeta and Berhane et al (Berhane, 2014)	Cross-sectional survey	3984	One fourth, 82 (24.4%) of students who started pre-marital sexual debut had pregnancy
2	Musa Abdullahi and Abdullah Umar et al (Umar, 2013)	Multi methods- survey, Focus Group Discussion and review of University security records	318	68% of respondents posited that engaging in premarital sex can lead to unwanted pregnancy
3	Bhatta DN et al (Bhatta, 2013)	Cross-sectional study	324	16% who have premarital sex have faced the problem of unwanted pregnancy
4	D.B. Kirby et al., (Kirab, 2006)	Article Review	NA	Of the 13 studies that measured pregnancy rates, 3 found significant positive impacts, 9 found in significant impacts, and 1 found a significant negative impact
5	Barbara S. Mensch, Wesley H. Clark, Cynthia B. Lloyd, and Annabel S. Erulkar et al., (Mensch, 2001)	Qualitative study	600	The association between Premarital sex, pregnancy and school leaving are strong
<b>HIV/AIDS and STIs</b>				
1	Musa Abdullahi and Abdullah Umar et al (Umar, 2013)	Multi methods- Survey, Focus Group Discussion and review of University security records	286	93% of respondents posited that engaging in pre-marital sex can lead to HIV/STIs
2	D.B. Kirby et al (Kirb, 2006)	Article Review	NA	Of the 10 studies that measured impact on STD rates, 2 found positive impacts, 6 found no significant impact and 2 found negative impacts
<b>Abortion</b>				
1	Mulugeta and Berhane et al (Berhane, 2014)	Cross-sectional survey	3984	Premarital women who were pregnant, 89% of them had history of abortion
2	Bhatta DN et al., (Bhatta, 2013)	Cross-sectional study	324	53.8% respondents managed the problem of unwanted pregnancy by surgical abortion and other 46.2% managed by medical abortion (using medicine)
<b>Depression, Regret and Low self esteem</b>				
1	Stanley et al (Stanley, 2006)	Article review	NA	Premarital cohabitation is associated with higher levels of depression and lower levels of self-esteem, as well as lower life satisfaction
2	Musa Abdullahi and Abdullah Umar et al (Umar, 2013)	Multi methods- Survey, Focus Group Discussion and review of University security records	286	68% stated that premarital sex consequences of depression after having sex. 43% stated that premarital sex consequences of regret after having sex 38% stated that premarital sex consequences of guilt feeling after having sex

## **Discussion**

Discussion has been made with dividing four areas of the study like individual level, family level, institutional level and impacts of premarital sex on adolescents' health as follows:

Individual level factor for having premarital sexual behaviour

Age, sex, peer relationship/love and affair are important factors for having premarital sex. Review article studies show late adolescents affair are especially 18-19 as most common to have premarital sexual behaviour than early adolescents. Male show more significant sexual relationship than female. Studies also show sexual behaviours with in good peer is significantly less than poor peer norms. Higher number of the adolescents have sexual relationship with their girlfriends.

### ***Family Level Factor for Having Premarital Sexual Behaviour***

Home is the first school for learning and mother is a first teacher. Family environment directly have relationship between premarital sexual behaviour in adolescent period. During adolescent, family should support and take proper care towards them. The review studies show that parental relation also considered as one of the important factors that lead to premarital sexual behaviour of their children. Especially, mother have greater roles than other members in the family.

### ***Institutional Level Factor for Having Premarital Sexual Behaviour***

Adolescent sexual health is multi-dimensional. From review articles, it is also concluded that, there is a direct relationship within institutional level factor for having premarital sexual behaviour. Rules and regulation, policies, community leader, community organization, education institutional environment and communication facilities including internet have direct and indirect relationship with adolescent sexual behaviour, especially premarital sex.

### ***Health Impact of Premarital Sexual Behaviour among Adolescents***

Health of adolescent is very crucial. Different research reports and literature show that the incidences of premarital sexual behaviour have been increasing anywhere even it is considered as illegal, shame, adultery, guilt fornication and so on. Premarital sexual behaviour among adolescents leads to direct and indirect impact on health. Unwanted pregnancy, teenage pregnancy, abortion, STI, HIV/AIDS, regrets, loss of self-respect, depression, loss of family support, substance abuse and even death (suicide) are health impact of premarital sexual behaviour among adolescents.

## **Conclusion**

According to WHO boys and girls during the age group of 10-19 called as adolescents. There is drastic change and development in physical, cognitive, social and emotional aspects during adolescence. In this age, everybody has common question of "Is it ok to have premarital sex?"

The thought might be different from each other. Premarital sexual behaviour or sex before marriage is the sexual activity between two people who are not married.

From review literature, there are multidimensional factors, which leads to premarital sexual behaviour. Parent relationship with their children and family environment, societal environment, cultural and traditional rules and values, economic condition, school environment, peer's relationship, love and affairs, communications (mobiles, internet-pone movies etc.) and rules and regulation are the risk factors that affect in premarital sexual behaviour of adolescents.

Furthermore, study found that family, culture and religion do not give permission to have premarital sex. Along with this premarital sexual behaviour have negative impact on health of adolescents like unwanted pregnancy, substance abuse, depression, suicidal death, loss of self-esteem and loss of family support.

## References

- Adhikari, R. & Tamang, J. (2009). *Premarital sexual behaviour among male college students of Kathmandu, Nepal*. BMC. Public Health, 9:241 Retrieved from <https://doi.org/10.1186/1471-2458-9-241>
- Barbara S. & Mensch, W. H. (2001). *Premarital sex, schoolgirl pregnancy, and school quality in rural Kenya*. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/11831048>
- B C, G. B. & Basel, P.L. (2013). *Premarital sex behaviors among college youths of Kathmandu, Nepal*. Kathmandu University Medical (KUMJ) 11(41), 27-31.
- Berhane, Y. M. (2014). Factors associated with pre-marital sexual debut among unmarried high school female students in Bahir Dar town, Ethiopia: Cross-sectional study. *Reproductive Health*, 2-6. Retrieved from <http://www.reproductive-health-journal.com/content/11/1/>
- Bhatta, D N (2013). Adolescent students' attitude dtowards premarital sex and unwanted pregnancy. *Health Renaissance*, 11, 145-149. Retrieved from <https://www.nepjol.info/index.php/HREN/article/view/8222/6687>
- Brent, C. Miller, B. B. (2001). Family relationships and adolescent pregnancy risk: A research synthesis. *developmental review*, 21(1), 1-38. Retrieved from <https://www.sciencedirect.com/science/article/pii/S0273229700905136>
- Cavendish, M. (2010). *Sex and society*. Retrieved from [https://en.wikipeida,org/wiki/premaital\\_Sex](https://en.wikipeida,org/wiki/premaital_Sex)
- Chai Podhisita, P. X. (2001). *The risk of premarital sex among Thai youth: Individual and family influences*. East-West Center Working Papers. Retrieved from [https://www.files.ethz.ch/isn/101291/2001\\_10\\_The\\_Risk\\_of\\_Premarital\\_Sex.pdf](https://www.files.ethz.ch/isn/101291/2001_10_The_Risk_of_Premarital_Sex.pdf)
- Chiao, C. (2012). *Exploring the relationship between premarital sex and cigarette/alcohol use among college students in Taiwan: a cohort study*. BMC Public Health. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/22809432>
- Christian Bible Reference Site. (2016). Google. Retrieved from [https://www.christianbiblereference.org/faq\\_premaritalsex.htm](https://www.christianbiblereference.org/faq_premaritalsex.htm)
- Fieser, J. (2017). *Sex from oral issues that divide us*. Retrieved from <https://www.utm.edu/staff/jfieser/class/160/2-sex.htm>

- Finer, L.B. (2007). *Trends in premarital sex in the United States, 1954-2003*. Public Health Rep. 2007 Jan-Feb;122(1): 73-78. doi 10.1177/003335490712200110
- Kirby, D.B. (2007). Sex and HIV education programs: Their impact on sexual behaviors of young people throughout the world. *Journal of Adolescent Health*, 206-217. Retrieved from <http://www.sidastudi.org/resources/inmagic-img/dd2891.pdf>
- Laura Gibney, N. S. (2003). Behavior risk factors for STD/HIV transmission in Bangladesh's trucking industry. *Soc sci med Apr 56 (7): 1411-1424*. Retrieved from <http://s116768.gridserver.com/sites/default/files/content/pphg/surveillance/CDC-MARPs/resources/multi-stage-cluster/5.pdf>
- Ministry of Health and Population (MOHP) [Nepal], New ERA, and ICF International Inc. 2012. *Nepal Demographic and Health Survey 2011*. Kathmandu, Nepal: Ministry of Health and Population, New ERA, and ICF International, Calverton, Maryland.
- Paudel, D. R. (2013). Attitude on premarital sex, marriage and family size among adolescents in Pokhara Valley. *JHAS*, 3, 60-63.
- Population Division/MoHP (2010). *Nepal adolescent and youth survey 2010/2011*. Population Division, Government of Nepal, Ministry of Health and Population. Retrieved from <https://nepal.unfpa.org/en/publications/nepal-adolescents-and-youth-survey-201011-highlights>
- Pradhanaga, Y. (2018). *Class presentation*. Goathgau: Morang.
- Puri, M., & Cleland, J. (2006). *Sexual behavior and perceived risk of HIV/AIDS among young migrant factory workers in Nepal*. *Journal of Adolescent Health*, 38, 237-246.
- Roberts, S.T & Kennedy, B. L. (2006). Why are young college women not using condoms? Their perceived risk, drug use, and developmental vulnerability may provide important clues to sexual risk. *Arch Psychiatric Nurs. Feb; 20 (1): 32-40*. Retrieved from <https://pdfs.semanticscholar.org/bda0/02325794c5fc5519cec4fce3ba5facd34801.pdf>
- Sawyer, S.M (2012). *Adolescence: A foundation for future health*. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/22538178>
- Stanley, S.M. Rhoades, G. K. & Markman, H.J. (2006). Sliding versus deciding: Inertia and the premarital cohabitation effect. *Family Relation International. Journal of Applied Family Studies*, 55(4), 499-509. Retrieved from [https://www.jstor.org/stable/40005344?seq=1#page\\_scan\\_tab\\_contents](https://www.jstor.org/stable/40005344?seq=1#page_scan_tab_contents)
- Umar, D. M. (2013). Consequences of pre-marital sex among the youth a study of University of Maiduguri. *IOSR Journal Of Humanities And Social Science (IOSR-JHSS)*, 10 (1), 10-17. Retrieved from <http://www.iosrjournals.org/iosr-jhss/papers/Vol10-issue1/B01011017.pdf>
- UNICEF (2001). *Teenage births in nations*. Retrieved from <https://www.unicef.irc.org/publications/odf/repcardse.pdf>
- United Nations – Youth. (2003). *World youth report 2003*. Retrieved from 8. <https://www.un.org/development/desa/youth/world-youth-report/world-youth-report-2003.html>
- Wildmer, E.D., Treas, E. & New Cobb. R. (1998). Attitudes toward nonmarital sex in 24 countries. *The Journal of Sex Research*, 35 (4), 349-358. Retrieved from <http://www.jstor.org>
- Yi, C. C.-C. (2011). *Adolescent premarital sex and health outcomes among Taiwanese youth: perception of best friends' sexual behavior and the contextual effect*. *AIDS Care Psychological and Socio-medical Aspects of AIDS/HIV*, 23(9).

## Assessment of Healthcare Utilization among Women Experiencing Childbirth in Suburban Nepal

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### ABSTRACT

The postnatal period (birth to 6 weeks of age) is a high-risk period for mothers and their newborns. Despite significant improvements in the Nepalese healthcare system over the last decade, there is still a high incidence of maternal and neonatal deaths during the postnatal period. These factors, in addition to existing socioeconomic barriers, discourage many women from returning to these facilities for postnatal care. This study therefore, aims to determine the extent of healthcare utilization among women with recent childbirth experience in the Mahalaxmi municipality in the Lalitpur district of Nepal. This study is a descriptive cross-sectional needs assessment utilizing a pre-tested survey instrument administered to ninety-eight women who were randomly selected from the semi-urban Mahalaxmi municipality. All the respondents reported that they received ante-natal care during their pregnancy. A majority of the women reported that they received perinatal care from physicians. The results of the study showed that although there was a significantly high utilization of ante-natal and perinatal care among women with recent childbirth experience, most of the women were unaware of the availability or necessity of postnatal care, despite the accessibility of physicians and healthcare facilities.

**Keywords:** Childbirth, maternal health, postnatal care, pregnancy, utilization

### Introduction

Nepal has had a tumultuous socio-political history over the past two decades that has only begun to settle down within the last few years. This instability has greatly impacted accessibility to healthcare, such that Nepal currently ranks 149 out of 189 on the Human Development Index (United Nations Development Programme, 2018). In Nepal there is lower life expectancy rates, higher prevalence of transmissible disease, and lack of reproductive care due to poor healthcare infrastructure. Major changes have been made by the government in the last few years, including implementation of the Safe Motherhood Plan and Newborn Long

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Term Plan, which offer financial incentives to utilize maternal healthcare services and increase training of professional midwives (Kearns, 2017). Nevertheless, more progress is yet to be made.

The postnatal period (birth to 6 weeks of age) is a high-risk period for mothers and their newborns; a period of time when most maternal and infant deaths in Nepal related to childbirth is known to occur. The World Health Organization (WHO) recommends at least three postnatal care visits after birth (on day 3, between days 7-14, and at 6 weeks) (WHO, 2013). In general, most neonatal deaths due to asphyxia occur within the first week of life. Over 60% of cases of sepsis and pathological jaundice, both common causes of neonatal deaths, develop during the first week of life (WHO, 2013). During postnatal care visits, both maternal and newborn health is assessed. Infants are evaluated for health conditions including the presence of poor feeding behaviors, abnormal body temperatures, atypical body habitus, irregular movements, heart irregularities and respiratory difficulties. Mothers are evaluated for presence of hemorrhage, urinary incontinence, abnormal bowel function, perineal hygiene, and postpartum depression (World Health Organization, 2013). Studies have shown that increased utilization of postnatal care can reduce maternal and infant morbidity and mortality, as well as maternal postpartum depression (Lobato, 2014). However, as of 2015, only 58% of mothers in Nepal have utilized postnatal care services (WHO, 2013).

Many factors may contribute to the poor utilization of postnatal care by Nepalese women, including national policies and priorities, cultural practices, autonomy issues, proximity to healthcare facilities, availability of skill birthing assistants, and quality of health care facilities (Kearns, 2017). Economic needs resulting in poor infrastructure has made it challenging for the nation to provide quality skilled birthing attendants as well as emergency obstetrics and newborn care in rural and semi-urban areas of Nepal (Lobato, 2014). In addition, many rural Nepalese women are heavily influenced by family members to not seek antenatal or postnatal care (Simkhada, 2010). There is a perceived need to conduct research into postnatal utilization in Nepal in order to create sustainable interventions in reproductive health and birthing practices in rural and semi-urban communities (Khanal, 2014).

The Mahalaxmi municipality, where this study is conducted, lies in Lalitpur district of Nepal. Lalitpur is a relatively populated district of 468,132 (compared with the 1,744,240 of Kathmandu, the capital of Nepal) (Government of Nepal, 2013). At 385 sq. km. it is the third smallest of the 14 regions of Nepal and is a very densely populated region. The major religions of the population in this district are Buddhism and Hinduism, with a smaller but sizeable Christian population. Currently, the Lalitpur district is ranked 2<sup>nd</sup> out of all the Nepalese districts by the Human Development Index, just after Kathmandu (Morgan, 2014).

## **Methods**

This study is a descriptive cross-sectional needs study assessment. All 98 of the survey respondents were women from the semi-urban Mahalaxmi municipality in Lalitpur district of Nepal. Residents are defined as living in Lalitpur for at least 6 months. Only females ranging

between ages 16 and 39 and who had children were interviewed for this study. Each woman was asked a list of questions from a structured questionnaire regarding demographic information (religion, caste, marital status, number of children), utilization of antenatal, perinatal and postnatal care, awareness of postnatal care, accessibility of healthcare facilities, and female autonomy.

The study was conducted in Mahalaxmi municipality of Lalitpur district, one of the three districts of Kathmandu valley, situated in the northern part of Central Development Region. The municipality consists of 19 Wards. There are altogether 5 Health posts (HP) located in Wards 1, 7, 10, 13, and 16. There is also a teaching hospital in Ward 16.

A simple random sampling technique was used for the study. As per the District Public Health Office of Lalitpur district, the estimated target population of mothers of children under two years of age of Mahalaxmi municipality in the year 2015 were 2,749. The random sample of 98 was taken from the sampling frame. Participants were recruited to the study in person. Investigators knocked on doors without any coercion in order to invite individuals to participate.

Inclusion criteria for selection included: 1) Mothers who have at least one child under two years of age; 2) Residents of the municipality living there for at least 6 months. The exclusion criteria included mothers who were severely ill and/or could not speak. The tool for data collection was a structured questionnaire. The technique used for data collection was interviewing.

## **Results**

### ***Social History***

All the 98 respondents were married. Sixty-eight (68%) of them were from the Janajati caste and 18% were from the Brahmin Chettri caste. The age range of respondents at the birth of their last child prior to the study was grouped as follows: 16-20 y.o. (12%); 21- 25 y.o. (29%); 26-29 y.o. (34%); 30-35 y.o. (20%); 36-39 y.o. (5%).

It was self-reported that 13% of the respondents were illiterate. The highest level of educational attainment was at the primary level for 2 respondents. The distribution of secondary education attainment level among the respondents was: lower secondary (9%); secondary (29%); higher secondary (22%). Fourteen (14%) of the respondents were found to achieve a higher education level.

Seventy-five percent (75%) of the respondents were unemployed. Of the 22 employed, 9% were in business, 7% worked for non-governmental organizations, 2% were farmers and 2% relied on daily wages.

The husbands of all 98 respondents (100%) were employed. The distribution of employment among the husbands was: farming (2%); government service (6%); non-governmental organizations (12%); business (34%). Twenty percent (20%) of the husbands depended on daily wages, and 25% of the husbands were working abroad. The highest level of educational

attainment among the husbands was: primary (7%); lower secondary (9%); secondary (32%); higher secondary (19). Nineteen (19) of them were in higher education and 4 were illiterate.

### **Household Decision-making**

Eighty-one percent (81%) of the mothers surveyed reported that their last pregnancy was planned. Approximately 20% reported that their last pregnancy was not planned. Relative to household decision-making, the respondents reported that these decisions were made primarily by the husband (42%); both husband and wife (28%); by the family (23%) and least often by the wife (8%) (See Figure 1).

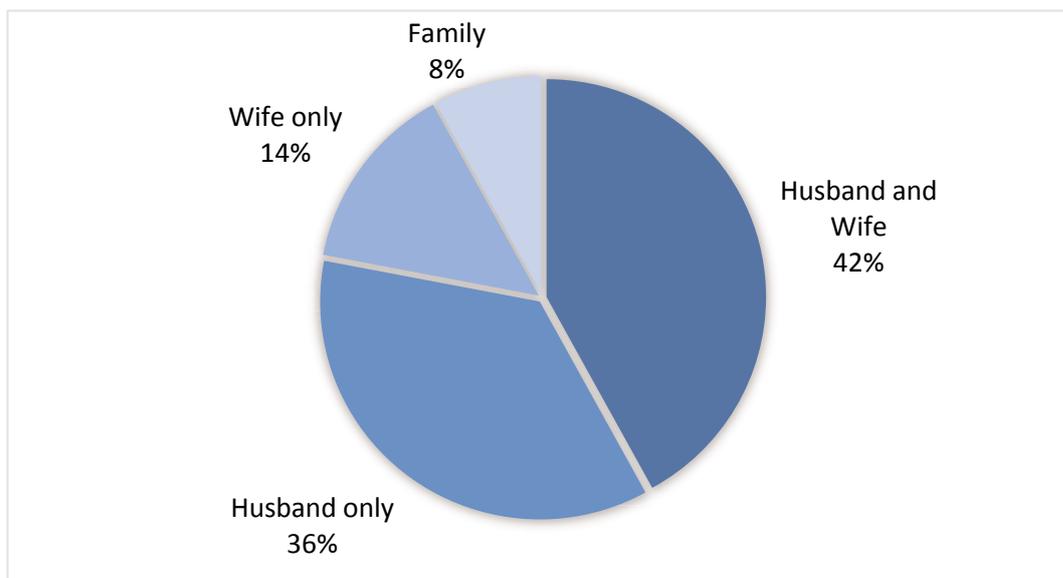


Figure 1. Household decision making

Relative to the children's education, the respondents reported that these decisions were made primarily by both the husband and wife (42%); by the husband (36%); the wife (14%); and least often by the family (8%). On the decision to consult a healthcare provider, the respondents reported that such a decision is made primarily by both the husband and wife (39%); by the wife (34%); by the husband (23%); and least often by the family (5%) (See Figure 2).

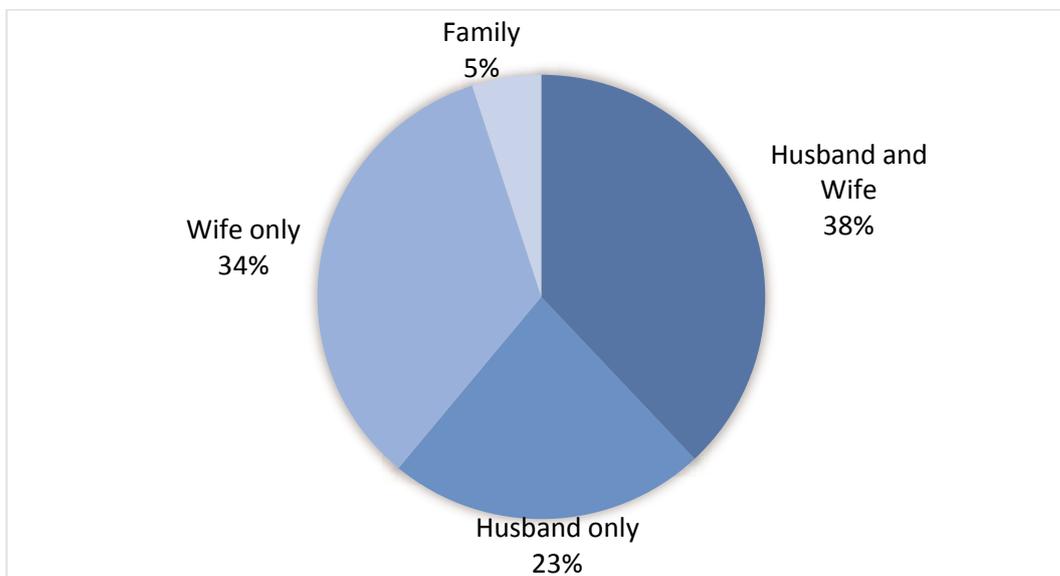


Figure 2. Decision to consult healthcare provider

### **Antenatal Care Utilization**

In the survey of antenatal care (pre-natal care) utilization, all the 98 respondents reported that they visited an antenatal care center (ANC) (See Figure 3). Eighty-nine percent (89%) of the mothers reported that they visited an ANC over 4 times. Seven percent (7%) reported 3 visits; 2% reported 2 visits and the rest (2%) did not receive any antenatal care. Eighty-nine percent (89%) reported that their caregiver at the antenatal care visit was a doctor. Approximately 10% reported that they received antenatal care from a nurse, midwife or auxiliary. Ninety-four percent (94%) of the respondents reported that at the time of their antenatal care visit they were taking iron supplementation. Eighty-eight percent (88%) of the mothers surveyed denied that they had experienced any danger signs in their pregnancy at the time of the antenatal visit, and 98% of the mothers reported satisfaction with their antenatal care.

### **Birthing Facility Utilization**

Ninety-three percent (93%) of the respondents reported that their latest birthing experience occurred in a healthcare facility. Seven percent (7%) reported having their latest birthing experience at home. Among the facilities in which the birthing occurred, 82% reported that it occurred at a government healthcare facility, while 11% reported that it occurred at a private healthcare facility. Among the mothers surveyed, 91% reported their delivery was facilitated by a doctor. Fewer than 10% reported that their delivery was facilitated by a nurse, auxiliary, midwife, Female Community Health Volunteer (FCHV) or traditional birth attendant. Seventy-nine percent (79%) of the mothers reported that they did not experience any danger signs during their delivery. Twenty-two percent (22%) reported that they experienced some danger

signs during their pregnancy. Nevertheless, 94% of the mothers reported satisfaction with their birthing experience.

### **Perinatal Care**

Eighty-six per cent (86%) of the mothers reported that they received a checkup from their doctor within 24 hours after delivery. Fourteen percent (14%) reported that they did not receive postnatal care within 24 hours post-partum (See Figure 3).

### **Postnatal Care Utilization**

Eighty-three percent (83%) reported that they did not receive any additional postnatal visit within 6 weeks post-partum (See Figure 3). When asked whether they were familiar with postnatal care, 65% of the respondents (mothers) denied awareness of postnatal care. Approximately 35% of the mothers reported that they have heard about postnatal care (See Figure 3). Among the media through which respondents gained awareness of postnatal care are: health workers, newspaper, friends, radio or television, and family.

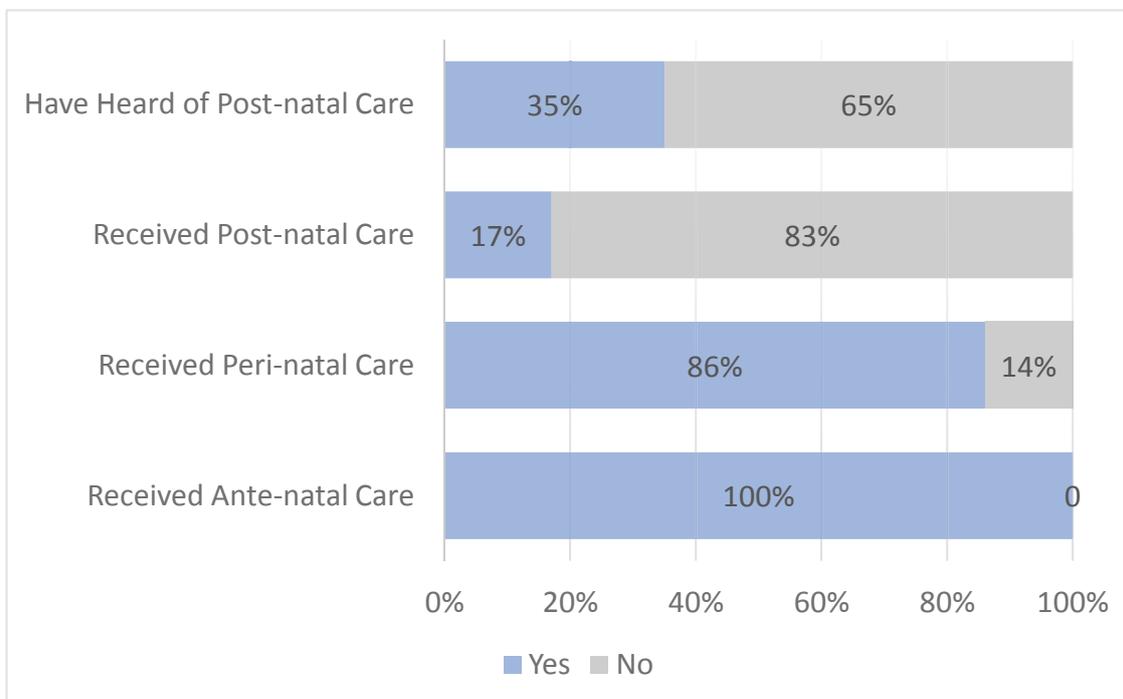


Figure 3. Survey of women of childbearing age: utilization of ante-, peri- and post-natal care

### **Availability of Maternal Care Resources**

With respect to accessibility of healthcare facilities to the mothers surveyed, 87% reported that the nearest healthcare facility was within 30 minutes of travel. Twenty percent (20%) of the respondents reported that the nearest facility was over 30 minutes away. All the respondents (100%) reported that postnatal care services were available at their healthcare facility. Fifty-two percent (52%) of the mothers interviewed received some type of perinatal or

postnatal care. At the postnatal care visit, only 33% reported that they were examined. Eighteen percent (18%) reported that they received family planning services at the postnatal care visit. Sixteen percent (16%) reported that they received information on nutrition. None of the 62 respondents (mothers) who had received postnatal care reported receiving counseling, iron supplementation, breastfeeding education, vitamin A supplementation or immunization at the time of the postnatal care visit. Forty-seven percent (47%) of the mothers reported that they were given a referral or transportation for an emergency at the postnatal visit.

Regarding the types of postnatal care services they received, the respondents identified the following: immunization (91%); vitamin supplementation (78%); medical examination (72%); iron supplementation (53%); family planning (14%); counseling (8%). None of the respondents identified breastfeeding education or nutrition education among the postnatal services they received after delivery.

### **Discussion**

These survey results showed differences in antenatal, perinatal, and postnatal care utilization among the respondents. In the survey of antenatal care utilization, all 98 respondents reported that they visited an antenatal care center, with 89% having visited an antenatal care center over 4 times. The majority of women (86%) from the Lalitpur district received perinatal care from physicians 24 hours immediately after birth.

However, relative to postnatal care (up to 6 weeks after birth), there was a significant reduction in utilization. Eighty-three percent (83%) of the women reported that they did not receive any additional postnatal visit within 6 weeks post-partum, and 65% of the women reported that they were unaware of postnatal care. Healthcare facilities were found to be accessible in the Mahalaxmi municipality, according to 87% of the women, who reported that the nearest healthcare facility was within 30 minutes of travel. Physicians were also found to be accessible, with 91% of women reporting that their births were facilitated by a physician.

Compared to our study where 17% of women received postnatal care within 2 weeks of birth, and 89% of women received perinatal care within 24 hours after birth, similar studies showed varying rates of postnatal and perinatal care utilization in Nepal. A study done in the Kaski district of Nepal in 2011 revealed 0% of the women received postnatal care within 24 hours of birth (perinatal care) and 32.6% received postnatal care within 1 week of birth (Karkee, 2016). The Kaski district ranks 5th out of the 75 districts in Nepal in the Human Development Index, while the Lalitpur district in our study ranks 2<sup>nd</sup> (Karkee, 2016). Comparatively, the national data from the Nepal Demographic and Health Survey (NDHS) in 2016 reported that 57% of women in the overall population received postnatal care within 2 days after birth. Of the total number of women who received postnatal care, 64% were urban women and 48% were rural women (Ministry of Health, 2016).

Based on the results of these studies, our team has concluded that when surveying mothers, it is important for the definition of postnatal care to be explicitly differentiated from perinatal

care, which is defined as 24 hours after birth. The differences in reported postnatal care utilization among studies may be due to women misunderstanding the two definitions, as seen by the differences in categorical data portrayed by these two studies. Further differences may be attributed to varying degrees of social, economic, and environmental nuances among each district. These factors play a role in the poor utilization of postnatal care by Nepalese women, including the political will of the government, cultural practices, female autonomy, proximity to healthcare facilities, availability of skill birthing assistants, and quality of health care facilities.

### ***Political Climate and Infrastructure***

Nepal is listed as one of the many fragile and conflicted-area situation (FCS) countries in the United Nations. Even as a post-conflict nation, it still struggles with fragility due to political instability, and therefore maternal and neonatal health greatly suffer. The length of fragility in the country correlates with higher maternal mortality ratios per live childbirth, and these FCS countries are found to document the highest rates of maternal and neonatal morbidity and mortality in Asia and the Middle East (Goplan, 2017). Much of the country remains rural, and 76% of the population is dependent on agriculture for its income (Kearns, 2017). In some of the most remote parts of the country, there are no working roads, so it can take up to two days to reach the nearest hospital. In these areas, women are required to find porters because cars cannot or will not pick them up (Morgan, 2014). In many villages, the major modes of transportation are still by donkey or mule (Khatri, 2017).

### ***Autonomy of Women and Influence of Family Members***

Nepal currently ranks 118/160 in the gender inequality index (United Nations Development Programme, 2018). Women have lower literacy and education rates than men and work mostly as unskilled laborers. Although the majority of women are employed in agriculture, 61% of married women are not paid for their work (Kearns, 2017). A 2016 study done in the Kapilvastu district, a rural district in Western Nepal, showed that women's autonomy was low, especially in terms of financial autonomy (Bhandari, 2018). Women's autonomy in Nepal is closely correlated with many factors such as age, education, occupation and income. However, the most important predicting factors of autonomy were the woman's education level, their husbands' education levels, and their household socioeconomic status (Bhandari, 2018). The better educated the women and their husbands are, the more likely it is that they will use maternal healthcare services.

A 2014 study conducted in Kathmandu, the urban and dense capital of Nepal, surveyed mothers, their husbands, and their mothers-in-law to rank the perceived decision-maker of the family when it came to antenatal healthcare services. Antenatal care utilization was found repeatedly to be a good predictor for postnatal care utilization (Simkhada, 2010). Results showed that pregnant young adult women and teens were more likely to defer to their husbands' decisions on utilization of maternal healthcare, whereas most adult women felt they, themselves, were the most influential participants in antenatal care and delivery care decision-making. Overall, the husband was found to play the most influential role in maternal healthcare

decision-making during pregnancy of women in all age groups (Upadhyay, 2014). These results, however, may be solely limited urban environments similar to that of Kathmandu.

In the rural areas of Nepal, tradition more heavily favors the influence of mothers-in-law on their daughters-in-law (Upadhyay, 2014). Usually, women marry young, and after marriage, the wife traditionally lives with the husband's family. Oftentimes, young girls become pregnant and most drop out of school, perpetuating the poorly educated, young motherhood cycle. Nepalese men are not conventionally involved in childbirth due to the traditional belief in some areas that God becomes angry if they are to touch women in labor or post-labor (Khatri, 2017). Therefore, the mother-in-law becomes the decision-maker of maternal health issues. Many rural Nepalese women are not allowed to go for antenatal or postnatal checkups unless allowed by their mother-in-law (Simkhada, 2010).

Interviews of women, their husbands, and their mothers-in-law were conducted in both rural and urban districts of Nepal and showed mostly negative effects the mothers-in-law had on antenatal and postnatal care. Many mothers-in-law, themselves, did not receive maternal health care during their pregnancies, and therefore did not believe it was necessary for their daughters-in-law to do so (Simkhada, 2010). Instead, they saw household chores as a priority for their daughters-in-law, and may push them to work throughout their pregnancy, up until their delivery. In some cases, where the daughters-in-law had access to earning or were able to obtain funds elsewhere, they have managed to find a way to obtain care (Simkhada, 2010).

#### ***Health Care Facilities and Skilled Birthing Attendants***

NDHS reported that 81% of women who delivered in a health facility received a postnatal check within 2 days after the delivery (Ministry of Health, 2016). Giving birth at a health facility is a positive predictor of receiving postnatal care (Simkhada, 2010). Therefore, it is important to look at the causes for poor antenatal care and reasons for homebirths. In Nepal, there are about 1500 birthing centers available in rural areas, but only 10% of births take place in those facilities (Khatri, 2017). Birthing centers in Nepal are the lowest tier of health facility where women may give birth. These birthing centers are standardized across the country, and consist of 2 patient rooms, a treatment room, and a storage area (Morgan, 2014). These centers must consist of one Auxiliary Nurse Midwife (ANM) who is trained as a Skilled Birthing Assistant (SBA), but often are staffed by ANMs who are not additionally trained (Khatri, 2017). The SBA accreditation consists of a 2 month long training program in addition to the 18 month long ANM training. In the SBA program, they specifically learn emergency obstetric and neonatal care, including use of antibiotics, anticonvulsants, and resuscitation (Khatri, 2017). Many newly trained SBAs testified that they could assist deliveries with much more confidence after the focused training program, and performed fewer unnecessary episiotomies (Morgan, 2014).

In addition to the many reasons for home birth mentioned above, there seems to be an overall distrust of the SBAs within some Nepalese communities due to miscommunication and previous experiences. There is also the perception that it is only necessary to attend a birthing center if one encounters complications during birth, so women often do not feel the need to

seek trained birthing help (Morgan, 2014). Even though birthing facilities are supposed to be open around the clock, oftentimes the SBA was not present when women arrived at the birthing center for antenatal care, childbirth, or postnatal care (Khatri, 2017). As a result, professionally trained midwives would have to take over, but often lived too far to arrive at the facilities in a timely fashion.

SBA's are also expected to monitor women for up to 8 hours after delivery and observe any postpartum complications. However, many of them note that there was not enough space in the facilities to keep women after delivery for postnatal care. Mothers would often leave the birthing facility just 2 hours after giving birth (Morgan, 2014). In addition, birthing facilities, unlike hospitals, do not usually have electricity. This makes it difficult to keep the mother and baby warm, especially during the winter (Morgan, 2014). In a study conducted in Western Nepal, both patients and SBA's alike felt that, overall, the most important factor was for each birthing facility to have at least 2 SBA's on call to deliver quality care and manage life-threatening complications (Morgan, 2014). With improvement of birthing facilities and increased SBA staffing, women might be more willing to seek facility births and be compliant with postnatal care.

### **Conclusion**

This study reveals that although there is a high utilization of antenatal and perinatal care in Lalitpur district of Nepal, most women do not utilize postnatal care. These findings of poor utilization of postnatal care occur in spite of the accessibility of physicians and healthcare facilities in Lalitpur. Our results indicate that there is a need to educate women about the necessity of postnatal care in order to further reduce maternal morbidity and mortality in Nepal. It is also necessary to increase the accessibility of birthing centers in more rural areas of Nepal, and ensure they are appropriately staffed. The ultimate objective is to empower and encourage women to give birth in these facilities and return for postnatal care in order to reduce maternal morbidity and mortality. Facility births and use of antenatal care are good predictors of postnatal care utilization, which makes antenatal care compliance an important starting point for an intervention strategy in rural and semi-urban areas of Nepal. Programs to educate women about the necessity of professional care during birth and after birth should be instituted to improve the relationship between healthcare providers and mothers. More studies about postnatal care utilization in other municipalities in Nepal should be conducted to better understand utilization across the nation.

### **Declarations**

Formal approval has been granted from Institutional Review Committee (IRC) of MMIHS and IRB of Nova Southeastern University. The participants were informed and counseled about aims, methods, and anticipated benefits and risks of the study program. Written and verbal informed consents were taken with each and every respondent. No pressure or inducement of any kind will be applied to encourage an individual to a subject of research. During the study

period all the ethical consideration as well as confidentiality will be maintained to respect human dignity and principle of justice.

## References

- Bhandari, T. R., Kutty, V. R., & Ravindran, T. K. (2016). Women's Autonomy and Its Correlates in Western Nepal: A Demographic Study. *Plos One*, *11*(1). doi:10.1371/journal.pone.0147473
- Gopalan, S. S., Das, A., & Howard, N. (2017). Maternal and Neonatal Service Usage and Determinants in Fragile and Conflict-affected Situations: A Systematic Review of Asia and the Middle-East. *BMC Womens Health*, *17*(1). doi:10.1186/s12905-017-0379-x
- Government of Nepal. (2013). *Statistical Year Book of Nepal 2013*. Kathmandu, Nepal: Central Bureau of Statistics.
- Karkee, R., & Khanal, V. (2016). Postnatal and Neonatal Care after Home Birth: A Community-based Study in Nepal. *Women and Birth*, *29*(3). doi:10.1016/j.wombi.2015.10.003
- Kearns, A., Onda, S., Caglia, J., Tuncalp, O., Langer, A. (2017). Postnatal Care in Nepal: Components of Care, Implementation Challenges, and Success Factors. Retrieved from <https://cdn2.sph.harvard.edu/wp-content/uploads/sites/32/2014/09/HSPH-Nepal6.pdf>
- Khanal, V., Adhikari, M., Karkee, R., & Gavidia, T. (2014). Factors Associated with the Utilisation of Postnatal Care Services among the Mothers of Nepal: Analysis of Nepal Demographic and Health Survey 2011. *BMC Womens Health*, *14*(1). doi:10.1186/1472-6874-14-19
- Khatri, R. B., Dangi, T. P., Gautam, R., Shrestha, K. N., & Homer, C. S. (2017). Barriers to Utilization of Childbirth Services of a Rural Birthing Center in Nepal: A Qualitative Study. *Plos One*, *12*(5). doi:10.1371/journal.pone.0177602
- Lobato, G., Brunner, M. A., Dias, M. A., Moraes, C. L., & Reichenheim, M. E. (2012). Higher Rates of Postpartum Depression among Women Lacking Care after Childbirth: Clinical and Epidemiological Importance of Missed Postnatal Visits. *Archives of Womens' Mental Health*, *15*(2), 145-146. doi:10.1007/s00737-012-0256-4
- Ministry of Health, Nepal; New ERA; and ICF. 2017. *Nepal Demographic and Health Survey 2016*. Kathmandu, Nepal: Ministry of Health, Nepal.
- Morgan, A., Soto, E. J., Bhandari, G., & Kermode, M. (2014). Provider Perspectives on the Enabling Environment Required for Skilled Birth Attendance: A Qualitative Study in Western Nepal. *Tropical Medicine & International Health*, *19*(12), 1457-1465. doi:10.1111/tmi.12390
- Falle, T. Y., Mullany, L. C., Thatte, N., Khatry, S. K., Leclercq, S. C., Darmstadt, G. L., Katz, J. and Tielsch, J. M. (2009). Potential Role of Traditional Birth Attendants in Neonatal Healthcare in Rural Southern Nepal. *Journal of Health, Population and Nutrition*, *27*(1). doi:10.3329/jhpn.v27i1.3317

- Neupane, S., & Doku, D. (2013). Utilization of Postnatal Care Among Nepalese Women. *Maternal and Child Health Journal*, *17*(10), 1922-1930. doi:10.1007/s10995-012-1218-1
- Simkhada, B., Porter, M. A., & Teijlingen, E. R. (2010). The Role of Mothers-in-law in Antenatal Care Decision-making in Nepal: A Qualitative Study. *BMC Pregnancy and Childbirth*, *10*(1). doi:10.1186/1471-2393-10-34
- United Nations Development Programme. (2018). *Human development reports*. Kathmandu, Nepal: United Nations Development Programme.
- Upadhyay, P., Liabsuetrakul, T., Shrestha, A. B., & Pradhan, N. (2014). Influence of Family Members on Utilization of Maternal Health Care Services among Teen and Adult Pregnant Women in Kathmandu, Nepal: A Cross Sectional Study. *Reproductive Health*, *11*(1). doi:10.1186/1742-4755-11-92
- World Health Organization. (2013). *WHO recommendations on postnatal care of the mother and newborn*. Geneva, Switzerland: World Health Organization.

# Water Supply, Sanitation and Hygiene Situation in Nepal: A Review

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## ABSTRACT

Federal Democratic Republic of Nepal is a landlocked country located in South Asia. Nepal has made its considerable efforts to improve the water supply and sanitation (WASH) situation in the country by formulating and enforcing a number of WASH policies, guidelines and acts for the last two decades. But WASH situation of Nepal has not been well documented so far. Aim of this article is to describe the situation of water supply, sanitation and hygiene (WASH) in Nepal by analysing secondary data and information obtained from published and unpublished literature. About 97 of the total population have access to basic sanitation facilities and 87 percent access to basic water supply facility. Sanitation coverage is 95 percent in six Provinces and below 90 percent in Province no. 2 of Nepal. The momentum of sanitation coverage was accelerated immediately after internalization and implementation of the Sanitation and Hygiene Master Plan in 2011 and Nepal reaches at close to the elimination of open defecation. The gap between rich and poor in accessing to and using toilet facility has been narrowing down due to the nationwide sanitation campaigns. But there is disparity in accessing and using piped water between rich and poor. Only 25 percent of water supply systems are well functioning and 68 percent can supply water to water taps throughout year. One-fourth of the existing toilet facility across the country are poorly constructed that needs to be upgraded. The government should make consolidated and integrated efforts to reduce existing inequity in the WASH sector and enhance the sustainability of water supply and sanitation services.

**Key Words:** Hygiene, sanitation, sustainability, WASH,

## Introduction

Nepal is a small landlocked country in the South Asia, sandwiched between India and China with an estimated population of 28.4 million and an area of 147,181 squares (CBS, 2017). Geographically, Nepal can be divided into Terai plain, Hills and Mountain/Himalayan belt. New federal constitution promulgated in 2015 has divided the country into seven provinces with 77 districts and 753 municipalities and rural municipalities for political and administrative purposes. It is socio-culturally diverse country where 125 caste/ethnic groups coexist and 123 dialects are spoken (Yadav, 2014). Despite blessed with diverse natural resources, Nepal suffers from under development and chronic poverty due to lack of capacity to implement appropriate development efforts. Nepal is ranked 149 positions in the human development

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index prepared by the United Nation Development Programme (UNDP, 2018). About one-quarter of the total population (25.16%) still live below the poverty line, indicating the stagnation of economic growth and development in Nepal (CBS, 2011).

Nepal has made a notable progress in WASH Sector though a considerable proportion of the total population still lacks access to improved water supply and sanitation facilities. In 1990 before formulating National Sanitation policy 1994, 46 percent of the total population were using drinking water from the improved sources and only 6 percent had access to toilet facilities (NSASC, 2000). Census report shows that 85% of Nepalese households in 2011 had access to improved water sources and 62 percent access to sanitation facility (CBS, 2012). The involvement of users in the process of planning and implementation had significantly increased the coverage from 6% (1990) to 87.3% (2016) in sanitation and similarly 46% (1990) to 87% (2016) in water supply (MWSS, 2016).

The Government of Nepal has made its considerable efforts to improve the water supply and sanitation situation in the country by formulating and enforcing a number of WASH policies, guidelines and acts for the last two decades. In 1997, the government formulated a comprehensive 20 years' Water and Sanitation Strategies by setting a target of achieving 100% sanitation coverage in the country by 2017 AD. The government made its commitment to ensure the access of basic water supply and sanitation services to all people by the end of 2017 through the integrated National Rural Water Supply and Sanitation (RWSS) Policy and Strategy 2004 (HMG, 2004). Sanitation and Hygiene Master Plan (SHMP) was enforced by the government to gear up sanitation and hygiene programs ensuring access of all population to basic WASH facilities by the end 2017 (GoN, 2011). After the implementation of the SHMP, the Governmental Organizations, and other WASH sector stakeholders strictly adhered to guiding principles in order to maintain uniformity and standard in the planning and implementation approach and to consolidate resources and unifying related stakeholders and actors in the WASH sectors of Nepal by forming coordination committees at different levels.

The Ministry of Water Supply and Sanitation has prepared a long-term sectorial development plan (SDP) by identifying priorities areas for future interventions and number of thematic approaches with an aim to achieving WASH sector goal by 2030. Aligned with the Sustainable Development Goals, SDP is guiding framework for planning, implementing, coordinating and monitoring all activities in the sector. The government has set target to provide basic WASH services to all population by 2020 and then improve services level (medium 50% and high 50%) by the end 2030. In addition, Nepal has set specific targets in Sustainable Development Goal (SDG) 6 for the year 2030 that includes basic water supply coverage to 99 percent households, piped water supply and improved sanitation to 90 percent of households along with elimination of open defecation (NPC, 2018). Analysis of existing WASH situation reveals the actual gap that needs to be gradually fulfilled by the government to achieve SDGs at the end of 2030. In this context, this article analyses the progress and existing situation of WASH in Nepal.

## Methods

This article is based on review of published and unpublished literature related to WASH in Nepal. Published articles were searched through Google searched engine and HINARI. Most of the data and information used in this article were obtained from the published and unpublished documents of the Ministry of Water Supply and Sanitation, Department of Water Supply and Sewerage (DWSS) and Sector Efficiency Improvement Unit (SEIU), Office Kathmandu, Nepal. Some data of Nepal Demographic and Health Survey 2016, WHO, UNICEF and other relevant literature were also used to analyse the WASH situation of Nepal.

## Results

### Water Supply and Sanitation Coverage in Nepal

Data of DWSS (2018) shows that about 97 of the total population have access to basic sanitation facilities and 87 percent have access to basic water supply facility. By the end of 2018, 63 districts of Nepal achieved status of Open Free Defecation zones. Almost all people living in hill and mountain belts have access to basic sanitation facility. Coverage of sanitation facility in Terai is at 93 percent which is 3 percent below the national coverage.

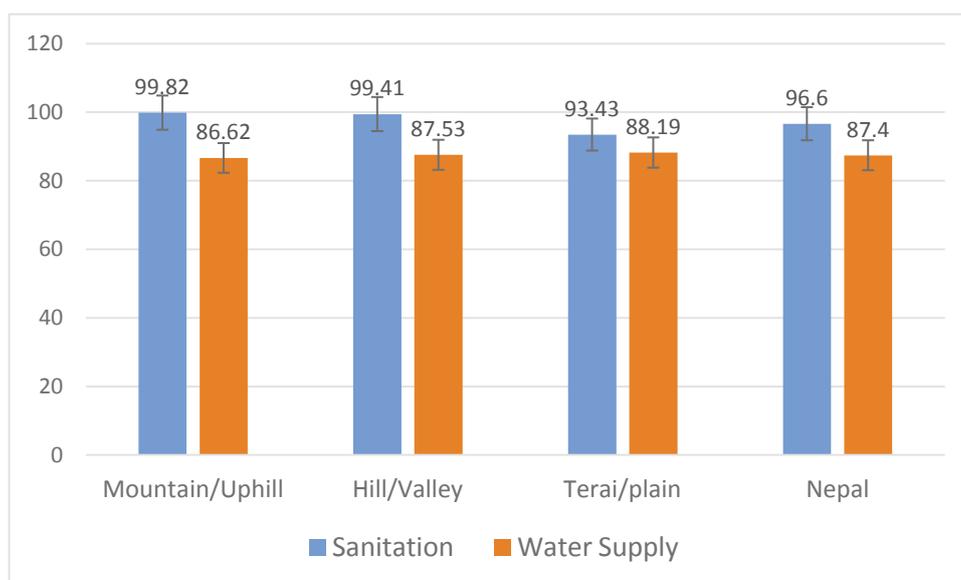


Figure 1. Water supply and sanitation coverage by ecological belts

Source: DWSS 2018

Disparity in water supply facility can be observed among seven provinces of Nepal. The coverage of water supply facility is lowest (70.45%) in the province 6, which is mainly composed of remote and mountain districts. Ninety percent of the population in the province 3 with Kathmandu and Chitwan valleys have access to basic water supply service. Twenty four districts have water supply coverage more than 90 percent and only four districts have the coverage below 80 percent. Almost all households in three districts like Kailali, Dadeldhura and Manang have access to basic water supply facility. The existing coverage of water supply

facility/services was estimated based on the data collected and recorded by the DWSS about completion of water supply facilities over the period. Actual coverage of the water supply facility might be below the existing coverage because all water supply facilities are not functional.

Table I

*Water Supply and Sanitation Coverage in Seven Provinces of Nepal*

Province	Water Supply	Sanitation
Province One	85.55	95.11
Province Two	87.86	88.19
Province Three	91.01	98.83
Province Four	89.68	100
Province Five	88.2	98.97
Province Six	70.45	100
Province Seven	87.39	96.62
Nepal	87.39	96.62

Source: DWSS 2018

Coverage of basic sanitation facility is above 95 percent in all the provinces except in province 2. Province 4 and 6 have already achieved 100 percent coverage in basic sanitation facility. Fifty four districts of Nepal have been already declared as Open Defecation Free (ODF) zone. Three districts, Kathmandu, Sindhupalchowk and Sunsari have the 99 coverage of basic sanitation facility. Sanitation coverage below the 90 percent still exists in districts of province 2 where population are predominantly Madhisi and Muslim.

***Trend in Water Supply and Sanitation Coverage***

Before 1990 water supply and sanitation coverage was very low in Nepal. In the 1990 it was estimated that 36 percent of population had access to waters supply facility and only 6 percent of the total population were using toilet facility. People's access to basic sanitation facility increased from 36 percent in 1990 to 82 percent in 2000. Such a big achievement in water supply might be the government's concentrated efforts on water supply section neglecting sanitation sector in the decade of ninety. The coverage of basic water supply facility stagnated around 80 percent between 2000 and 2010. The government of Nepal could not make a big improvement in the population's access to toilet facility before the declaration million development goals.

Since 2000 the coverage of the sanitation facility increased gradually from 25 percentage and reached 62 percent in the 2011. The momentum of sanitation coverage was accelerated immediately after internalization and implementation of the SHM Plan in 2011 by the government of Nepal. Within a period of six years, Nepal reaches at close to the elimination of open defecation and cent percent coverage of basic sanitation facility. Data indicate that

Nepal will achieve the target of cent percent sanitation coverage and eliminate open defecation across the country within a few years.

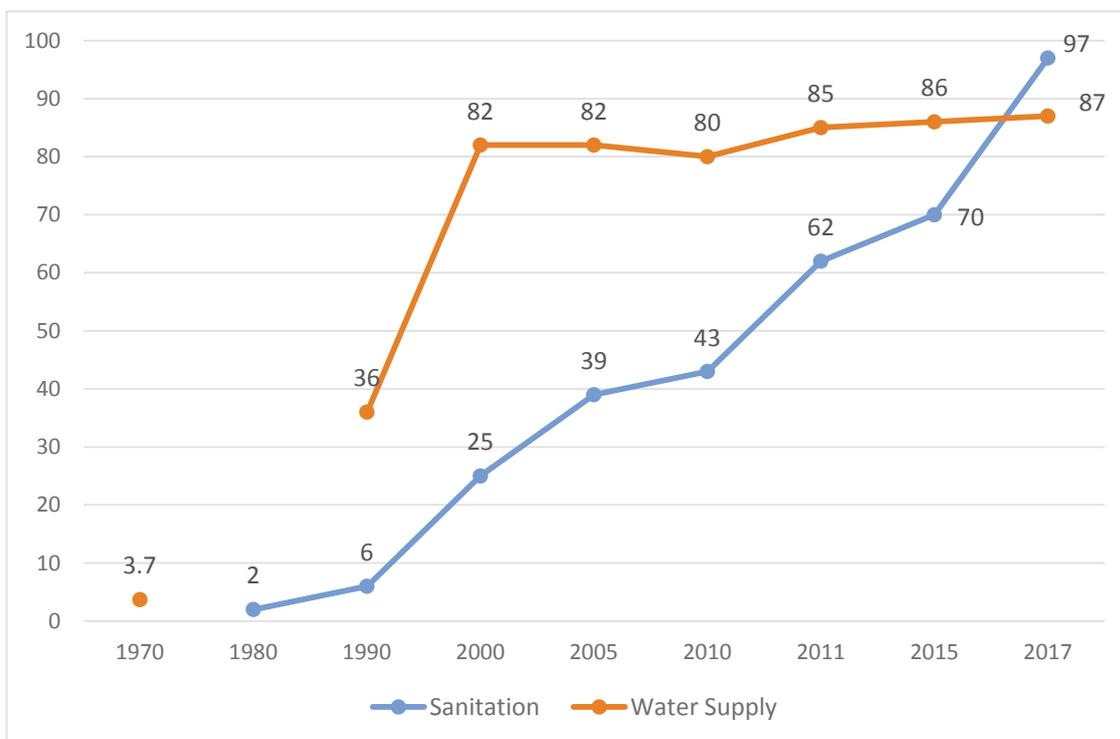


Figure 2. Trend of water supply and sanitation coverage in Nepal

Source: NSASC 2000, CBS 2011, NMIP 2014, SEIU 2016, NMIP 2018

#### Equity in WASH Sector of Nepal

In rural areas most of piped water stands are found in the public places nearby houses. The piped water connection to houses or personal premises is less common in rural areas. Only some well-off households are able to have piped water connection to their houses in their own efforts. It is also evident from data that 35 percent of richest households have access to piped water in courtyard or home. But households from poorest quintiles are less likely to have piped water connection in their home. Available data indicates that there is a disparity in accessing and using piped water between rich and poor.

Table 2  
*Status of water supply and sanitation by wealth quintile*

<i>Water supply</i>	Poorest	Second	Middle	Fourth	Richest
Piped water on Premises	10	14	16	17	35
Other improved water	69	82	84	83	64
Unimproved water	21	4	0	0	1
<i>Sanitation</i>					
Open defecation	69	53	42	28	1
Other improved toilets	11	14	14	8	34
Shared Toilets	4	11	12	22	0
Improved flush toilets	16	22	32	42	65

Source: WHO/UNICEF, 2015

Before initiating the open defecation free campaigns, access to toilet facility was limited to the rich and educated families, by and large in the urban areas. About 65 percent of households with richest quintiles are using improved flush toilet whereas only 16 percent of poorest quintiles have access to the improved flush toilet. Recent years, the gap between rich and poor in accessing to and using toilet facility has been narrowing down due to the nationwide sanitation campaigns.

Sanitation campaigns have also conducted hygiene promotion activities including establishment of hand washing facility with soap nearby toilet. According to Nepal Multiple Indicator Cluster Survey (CBS, 2014), there was an identified place with water and soap or detergent or other cleansing agents for hand washing in 73 percent households. NDHS data shows that 81 percent of the households had a fixed place for hand washing, and 19 percent had a mobile hand washing place (MoH, New Era and ICF, 2017). Since 39 percent of households in the lowest wealth quintile did not have water or any cleansing agents for hand washing, poor households are less likely to wash hand with soap. Access to and use of improved sanitation facilities including the provision of hand washing place with soap are still determined by socio-economic status of households.

#### **Functionality and Sustainability of WASH Facilities**

Functionality and sustainability of WASH facilities are influenced by several factors such as ownership of local people/users, management capacity of the user committee, skilled maintenance workers, operation and maintenance fund, availability of construction materials, tools and spare materials. Functioning status of the facilities by and large depend on the management capacity of the use committees and service providers as the water users and sanitation committees are responsible for managing water supply systems in rural and semi-urban areas of Nepal. The management committees collect tariff and recruit human resources to operate and maintain the water supply systems.

Table 3

*Situation of functionality of water supply systems*

SN	Functionality of systems and tap	Systems
1	Functionality of water supply system	
	Well functioning	25.4
	Need minor repair	36.1
	Need major repair	9.2
	Need reconstruction	8.6
	Need rehabilitation	19.8
	non-functional	0.9
	Providing water to all taps in the whole year	68.2
2	Condition of water tap stands	
	Functioning, no need repair	78.4
	Need minor repair	5.1
	Need major repair	16.5

Source: NMIP 2014, *Nationwide coverage and functional status of water supply and sanitation status in Nepal*

Water supply systems constructed over the period in the country are not well functioning and are not capable to supply water to all taps throughout the year. NMIP (2014) reported that only 68 percent of water supply stems can supply water to all tap round the year. In terms of functionality, only 25 percent found functioning well and 36.1 percent can be promoted to the well functioning status through the minor repair. But 9 percent water supply stem is in the need of major repair, and 19 percent can function after the rehabilitation work, which is beyond the capacity of water user committees in the rural areas. Surprisingly, only 4.5 percent of the water supply systems have maintenance fund and 38 percent have kept maintenance tools on the sites (NMIP, 2014). Available data indicate that about 25-40 water supply systems are not in good condition to supply water to the community in reliable and sustainable way. Poorly functioning systems result in unreliable, insufficient and unsafe water supply, which has direct impact on the proper use and cleanliness of toilets and hand washing behaviour of people.

Table 4

*Functional and sanitary status of toilets*

Sanitary/functional	Percent
<i>Sanitary</i>	93.0
<i>Insanitary</i>	7.3
<i>Unused</i>	0.7
Functionality	
<i>Functional clean and sanitary</i>	78.0
<i>Insanitary and poorly maintained</i>	7.0
<i>No toilet or not used as toilet</i>	15.0

Source: NMIP 2014, *Progress Brief 2014-2016 Sustainable Sanitation & Hygiene for All in Bhutan and Nepal*

The use of toilet has dramatically increased across the country due to the influence of nationwide sanitation campaigns. With the increased awareness of use of toilet, people have been habituated to use toilet. According to NMIP 2014, 93 percent of toilets in the country were sanitary and good condition and only 7 percent were insanitary. In term of functionality, 78 percent toilets were at good, clean, and sanitary condition. Only 7 percent toilets were not maintained properly by household members as toilet. There are some problems in the sustainability of sanitation facilities which can be overcome by upgrading simple pit latrine to improved pour/flush water seal latrine and ensuring easy access to water supply at household level.

### **Discussion**

Water supply and sanitation has been on the priority areas of the government since international water supply and sanitation decade (1981-90). But sanitation which was considered as a component of water supply received low priority from the government by 2010. As a result there was a huge gap in the water supply (82% and sanitation coverage (25%) by the end of 2000. Despite governmental and non-governmental efforts including Rural Water Supply and Sanitation Improvement Projects, the coverage of water supply facility across the country got stagnated with only 5 percent incremental from 2000 to 2017. About 87% of the total population in the country has access to basic water supply service. It may not be true reflection of water supply coverage in the country because this estimation was based on data collected by the DWSS regarding water supply scheme completion with beneficiary households and population without counting dysfunctional water supply system (DWSS, ND). On the other hand, NDHS data reveals that 95 percent households have access to an improved source of drinking water (MoH, New Era and ICF, 2017). It was also estimated that only 45 percent household have access to piped water and about 40% depend on protect well and tube wells for drinking water, and 10 percent without access to basic water supply facility (DWSS, 2015).

At present sanitation coverage of the country is estimated at 97 percent with minimal variation across ecological zones and provinces of the country. It was possible after the formulation and implementation of the National Sanitation and Hygiene Master Plan (SHMP) in 2011 when the government intensified and scale up country cross the county through the formation of WASH Coordination Committees from top to bottom level, integration of non-governmental efforts with the government's targeted WASH programs, cross-sector linkage and application of Community Led/School Led Total Sanitation approach (DWSS, 2017). WASH Coordination Committees have promoted the community engagement, local leadership and collaborative efforts of various sectors and stakeholders in the sanitation campaign (Adhikari, Aryal and Shrestha, 2015). A wide acceptance of low cost technology for construction pour flush pit latrine by the local people also contributed to the rapid and equitable access to sanitation facility at the community level.

Population's access to improved sanitation facilities is significantly higher in urban areas (94%) than in rural areas (67%) (UNICEF and WHO, 2015). But the gap between rural (61%) and

urban (63%) in the use of improved toilet facilities is being closed in the recent years (MoH, New Era and ICF, 2017) with the increased awareness of need of improved and sanitary toilet. There is inequity in access to and use of improved pour/flush toilet between well off and poor people. Households with poorest quintile are less likely to use the improved sanitation facility where as most of households from richest quintiles have access to improved pour/flush toilet. But rate of open defecation practice among people with poor quintile is higher than that of second and middle quintile people (MoH, New Era and ICF, 2017).

According to National Census data 2011 there is only two percent gap in water supply coverage between urban (87%) and rural areas (85%) (CBS, 2012). But the proportion of households having piped water connection in their home or courtyard is very low (20%) in rural areas (UNICEF and CBS, 2014). In rural villages, drinking water is generally provided through public taps in each cluster of houses. Households with poor quintiles are less likely to have a piped water connection on their premise (10%) because they cannot afford a connection to the piped water network as well as monthly water tariff. The wealth quintile data suggests unimproved water sources are more commonly used by the rural poor.

Sustainability of water supply facility is one of the major issues in the WASH sector of Nepal as most of drinking water supply schemes cannot function for the expected life span of 20 years (White et al. 2015). Only 25 percent of water supply systems are well functioning and 68 percent can supply water to water taps throughout year. According to the World Bank (2013), only 71% of water supply systems aged 5-15 years were functional in terms of tap functioning, and 65 schemes were good in good condition (as cited in SEIU, 2016). Another study conducted by SNV Nepal (2013) reported that 78 percent tap stands were in good condition, 16.5 percent requires major repair and 5.1 percent was in the need of minor repair. It was also reported in WASH sector report 2016 that 30 to 40 percent of the schemes provided good services to the users. A considerable proportion of the schemes are dysfunctional and poorly maintained, which has direct impact on accessibility, quality and reliability of water supply. The poor functionality of water supply systems is mediated by several factors including negligence, inadequate application of water safety principles and lack of capacity of the water users' committee to carry out major and minor repairs. Weak institutional, financial and technical capacity of the users' committees in rural areas is the main obstacle for the sustainability of water supply systems (Bhandari and Grant, 2007; Chauhan 2013). There is also tendency of users as well as governing body depending on external resource and using available resources on the new project rather than maintaining and repairing the existing schemes.

Nepal is heading toward on the road to universal access to basic sanitation facilities and elimination of open defecation. Access to improved sanitation facilities is still below 65 percent in both urban and rural areas. However, there is inequity in access to improved sanitation facilities across poor and rich people. Most of poor people are likely to use unimproved toilet. Rapid expansion of basic sanitation facilities across the country indicates that the government will achieve the target, basic sanitation for all by the end of 2020. However, consolidated efforts need to be put on increasing access to improved sanitation facilities for all. Current

estimation of water supply coverage cross the country may be quite below 87 percent as a considerable proportion of water supply systems are not functioning well. Inequitable distribution of and access to improved water supply facilities can be observed while analysing accessibility by wealth quintile.

### **Conclusion**

In conclusion, it can be said that Nepal has made rapid progress in sanitation coverage, heading toward ensuring basic sanitation for all and eliminating open defecation from the country, by 2020. Implementation of SHM Plan 2011 across the country has been successful to reach the unreached, remote and poor communities, promote equity in access to basic sanitation services. A considerable proportion of the total population are still deprived of basic drinking water supply services, depending on unimproved and unreliable sources of water such as pond, unprotected well and stream. There is disparity in using improved source of water supply service between rich and poor people. Poor people are more likely to use the water from unimproved source of water. The government has to put concentrated and integrated efforts on water supply sectors in order to promote equitable water services and provide improved water supply facility for all people by the end of 2030. Majority of water supply systems are poorly functioning and cannot supply water to people throughout the year. The government should develop mechanisms to continuously review, refine and adapt its programming, approaches and technologies to make sure that the work is sustainable, innovative, relevant and effective. The government should make consolidated and integrated efforts to reduce existing inequity in the WASH sector and ensure access to the improved WASH facilities, enhance reliability, quality and sustainability of water supply services and achieve SDG in WASH sector by 2030.

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### **References**

- Adhikari, A. K, Aryal, B, & Shrestha, N.L. (2015). Learning from the implementation of Sanitation and Hygiene Master Plan in Nepal, 38<sup>th</sup> WEDC International Conference, Loughborough University, UK
- Bhandari, B. & M. Grant (2007). User Satisfaction and Sustainability of Drinking Water Schemes in Rural Communities of Nepal. *Spring* Vol.3: 12-20.
- CBS (2012). *National Population and Housing Census 2011*. Central Bureau of Statistics, Government of Nepal, Kathmandu, Nepal.

- CBS (2018). *Nepal in figure*. Central Bureau of Statistics, Kathmandu.
- Chauhan, K (2013). Environmental Sustainability of Water Supply Systems implemented at RWSSP- WN.
- DWSS (2018). *Sanitation status of Nepal: Factsheet*. Government of Nepal, Ministry of Water Supply and Sanitation. Department of Water Supply and Sewerage (DWSS), Environmental Sanitation Section.
- DWSS (2015). *Progress review 2015*. Kathmandu: Government of Nepal, Ministry of Water Supply and Sanitation, Department of Water Supply and Sewerage.
- GoN (2011). *Sanitation and hygiene master plan 2011*. Kathmandu, Nepal.
- LGA (2017). *Local Governance Act*. Law Commission, Government of Nepal
- Ministry of Water Supply and Sanitation (MWSS) (2016). *Water, Sanitation and Hygiene (WASH) Sector status report 2016*. Sector Efficiency Improvement Unit, Ministry of Water Supply and Sanitation, Kathmandu
- MoH, New Era and ICF (2017). *Nepal Demographic and Health Survey 2016*. Ministry of Health, New Era and ICF, Kathmandu.
- National Management Information Project (NMIP) (2014), Nationwide coverage and functionality status of water supply and sanitation in Nepal, Department of Water Supply and Sewerage, Kathmandu.
- Nepal Central Bureau of Statistics (CBS) (2011). *Nepal Living Standards Survey 2010-2011, NLSS Third*. Kathmandu: Government of Nepal.
- Nepal Ministry of Federal Affairs and Local Development (MoFALD) (1991). *Local Self Governance Act (1991)*. Kathmandu: Government of Nepal.
- Nepal Ministry of Physical Planning and Works (MoPPW) (2004). *Rural Water Supply and Sanitation National Policy & Rural Water Supply and Sanitation National Strategy 2004*. Kathmandu: Government of Nepal.
- NPC (2018). *Nepal Sustainable Development Goals Status and Road Map (2016-2030)*, National Planning Commission Government of Nepal, Kathmandu, Nepal.
- NSASC (2000). *Nepal state of sanitation report 1999/2000*. National Sanitation Action Steering Committee, Kathmandu.
- Sector Efficiency Improvement Unit (SEIU) (2016). *Water, sanitation and hygiene (WASH), Sector Status Report*, Ministry of Water Supply and Sanitation, Kathmandu.
- Sector Efficiency Improvement Unit (SEIU) (ND). *Nepal water supply, sanitation and hygiene sector development plan (2016-2030)*, Ministry of Water Supply and Sanitation, Kathmandu.
- SNV, *Progress Brief 2014-2016 Sustainable Sanitation & Hygiene for All in Bhutan and Nepal*.
- UNDP (2018). *Human Development Report 2017*, United Nations Development Programme, New York

WHO and UNICEF (2015). *Progress on Sanitation and Drinking-water, 2015 Update*. World Health Organization and UNICEF: Geneva.

White, P., Badu, I.R., & Shrestha, P. (2015). Achieving sustainable water supply through better institutions, design innovations and Water Safety Plans – an experience from Nepal. *Journal of Water, Sanitation and Hygiene for Development*, 5(4). 625-631

WHO and UNICEF (2017). *Progress on Drinking Water Sanitation and Hygiene 2017 Update and SDG Baselines*, World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) Joint Monitoring Programme, Geneva.

## Surviving Research between Two Guns: Lessons Learnt from Nepal

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### ABSTRACT

Nepal's decade long violent conflict (1996-2005) between the Nepal Communist Party (Maoist) and the Government of Nepal resulted to over 14000 deaths and thousands others became disabled and lost their properties. During this violent war, the Maoists developed their own health cadres mainly to treat the combatants and the community people under their control areas to some extent. This paper is based on author's personal account of field experiences while conducting PhD research using mixed methods study comprising in-depth interviews and self-administrated questionnaire on the former Maoist health workers in Nepal. This study suggests a few dilemmas the first author confronted with while undertaking this research. First and foremost is the risk involved to both the researcher and the participants in the absence of trust and security on both sides of the conflict. Secondly, the sources of information could easily be biased either deliberately (as propaganda) or more subtly based on respondents' perspectives. The issues of accessing the research participants, relationships, complicity, representation and being rejected by a contact are pertinent issues when carrying out independent research. Thirdly, maintaining ethics and keeping a right balance between research, humanity and sense of justice is also the dilemma that might have affected the research findings derived from dangerous environments. Fourthly, lack of precise methods that are valid and reliable to investigate certain dynamics of conflict in the politically violent and crisis environment could be equally contested. Fifthly, undertaking cross-disciplinary research on a conflict-related topic during wartime by a researcher with background in allied field is even more challenging. The researcher need to have both an in-depth knowledge of conflict theories as well as being able to apply these to another discipline which can be cumbersome. This article presents a personal account of a Rotary fellow who conducted his public health research among the Maoist combatant health workers of Nepal. It presents his lived experiences that could be important in carrying out appropriate and credible research during violent conflict elsewhere in future.

**Key words:** Conflict, health, Maoist, Nepal

### Introduction

Health services research in politically charged and violent environments is neglected (WHO, 2008). Moreover, conducting research on hard-to-reach rebel health workers is particularly challenging, both methodologically and practically (Axnin, WG, Ghimire, D & Williams NE, 2012; Hoffman, 2003; Kovats-Bernat, 2002; Shah & Pettigrew, 2009, Sriram *et al.*, 2009). The study was undertaken around 2006 while Nepal was severely engulfed in the home grown Maoist insurgency instigated by the Communist Party of Nepal-Maoist for a decade (1996-

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2006). The author was a student of Public Health at the University of Aberdeen in Scotland, UK though he endeavoured to undertake a conflict research in relation to health services provided by the Maoist rebels in their “base areas” or areas under their control in Nepal. Following participation in a three-month long training at the Rotary Peace Center in Bangkok and further short-term training in the UK and USA, this study was carried out as part of a PhD study. As research fieldwork on a politically charged, revolutionary and violent context (Axninet *al.*, 2012; WHO, 2008) was a challenge; it was no exception for him. The Maoist rebellion was at its height, leading to over 14,000 deaths, destruction of 1,000 health posts, and many government health workers deserting their jobs. About one-third of the health centres in rural Nepal had operated without health workers and people in the remote hills suffered a severe lack of access to health services. On the other hand, the Maoists had recruited their own health workers to treat their combatants and provide limited services to the communities under their control (Devkota and van Teijlingen, 2009). In-depth studies of this kind are vital help us understand the key aspect of the conflict, for example without this study the researchers would not know the main motivating factors for joining as rebel health workers, particularly (a) individual reasons; (b) political; and (c) socio-cultural factors (Devkota & van Teijlingen, 2012). Working with an armed group at such a dangerous and violent context and surviving research was a challenge while it also faced unique problems while doing research in the Nepali context, especially in remote and rural areas. The challenges and paradoxes encountered during the study are outlined below. We trust these insights and our reflections on the fieldwork will be of use to future researchers in similar or related circumstances.

### **Methods & Fieldwork Experience**

The study used a mixed-methods design for data collection (MacKenzie Bryers, *et al.* 2014). In-depth interviews and self-administered questionnaire were used to collect data from the Maoist combatants, while additional interviews were conducted with the government health service providers and policy level authorities (Devkota and van Teijlingen, 2010; 2012).

This paper is based on the researcher’s personal experiences while conducting a research on the former Maoist combatant health workers of Nepal. This is focused on methodological challenges rather than on the study findings

### **Result and Discussion**

The study on Nepal’s Maoist health workers was conducted at a time when the conflict was at its height. It witnessed a number of challenges and dilemmas as follows:

First, as in other studies, this study was confronted with safety and security of both the researchers and the research participants because at that time people were sandwiched between two fires (Devkota & Teijlingen, 2010). There was absence of trust and security among people. Local people would distrust any new face coming to the village. It was a common apprehension among government security forces, Maoist sympathizers, Maoist forces and ordinary people living in the community. Thus any researcher, as an unknown outsider, would immediately be seen as suspicious. In many visits to the villages, both the Maoists combatants and the government security forces searched and even forced the researchers to

delete photographs.

Access to research areas and participants was a key issue. Obtaining permission from the Maoist agency to conduct the study, convincing the Maoist rank and file to access the Maoist health workers individually, reaching out to them in a geographically remote and harsh environments, and politically challenging and insecure settings threatened the success of the study. At the time, the researchers' key Maoist contacts kept changing their hideouts, nick names and cell phones in every 2-3 days. When the first researcher finally managed to get someone to agree to be interviewed there were frequent interruptions during these interviews due to security concerns. Similarly, audio-recording interviews and keeping interview records and field-notes were a challenge.

During many visits the government security forces were camouflaged and hidden to search out and destroy the Maoists. They were also disguised to the researchers and presented to the villagers in different ways. Many a time government forces pretended to a Maoist to the researcher intending to find out whether the first researcher belonged to the Maoists side. Both the warring sides would try to find out to whom the researcher belonged. Was he a government agent or a Maoist sympathiser? Often villagers in the community pretended that they did not belong to any side or even know of any side. They wanted to prevent any new persons coming to the village and contacting them. For them, identifying whether the new person was a government spy, a Maoist sympathizer or a member of Maoist army was an issue of life and death. Moreover, ensuring whether the person was a 'genuine' researcher and would not write anything about them personally or anything that could be used against them was really important. However, with hard work from the side of the researcher feeling of mistrust and apprehension used to transform into possible relationship and complicity (Pettigrew *et al.*, 2004).

Whether the methods used for data collection was valid or not was another big issue. Many conflict researchers believe that sources of information could easily be biased either deliberately (as propaganda at the time) or subtly based on respondents' perspectives and sympathies. In addition, there was lack of precise methods and tools valid and reliable to investigate in politically violent and crisis environments. The quality and reliability of data collected in conflict zone is thus a subject of substantial controversy. The researchers, therefore, rather than relying on one method, used a mixed-methods approach, which contributed substantially to understanding of the rebel health services in Nepal. The research used simultaneous mixed methods with flexibility in research methods, used snowball sampling (Macrae, *et al.*, 1996), for identifying the Maoist health workers in the communities –starting with selected contacts who were available but reluctant to disclose their identity. The research employed 'theoretical sampling' (Glaser & Strauss, 1967) where interviews were continued until the findings reached saturation. The research participants were selected from Maoist and non-Maoist sources for collecting reliable data and to perform triangulation of the findings (Keenan Forrest *et al.* 2005).

The use of mixed methods approach allowed for triangulation of methods from both the Maoist and non-Maoist sources and use of systematic analysis of the data (SPSS 16 for quantitative and NVivo version 7 and framework analyses for qualitative data) and helped analyse the data systematically. The research was conceptualized near the end of the armed conflict and the data were collected immediately after the peace agreement. It had many implications on this study. There was a situation of confusion because of the transition of the Maoists from being strictly underground to a more open environment whilst still keeping their underground mechanisms operational. The study might have been influenced by the 'veracity effect' (Sriram *et al.*, 2009; Weinstein, 2007). The researchers observed a shift in perspectives of the Maoists vis-à-vis winning or losing the war to a more victorious situation and atmosphere. Therefore, they conducted a few additional interviews after the peace process for data verification as access to the hard-to-reach rebel health workers was easier during the post negotiation period.

The researchers used the privilege of his academic position at a UK university and native residency in a conflict-affected district (i.e. Gorkha district) and strictly adhered to neutrality, research ethics and academic integrity. Maintaining ethics and keeping a right balance between research, humanity and sense of justice was central during the study. Balancing scholarly objectivity and integrity with researchers personal affinities or relationships did work well. The researcher was guided with a desire for peace rather than with a sense of justice. These measures helped address key methodological issues mentioned above.

Finally, there were some researcher related individual factors. Undertaking a cross-disciplinary research on a conflict-related topic with limited knowledge of conflict theories in a violent context by a researcher having background in an allied field (i.e. public health) was challenging. The researcher's Rotary Fellowship for three months as well as to other short-term training sessions and workshops on peace and conflict research helped address most of these issues. The issues of 'outsider or insider', and 'us and them' was pertinent as it was a determining factor whether or not the first researcher was allowed access to and the chance to interview Maoist health workers. In one instance, the insurgents asked for a donation or favour to their movement, which put the researcher in a difficult position. In many interviews, the researcher had to deal with emotional situations while hearing stories of the war. The first researcher's long academic teaching experience, both in a highly conflict affected district (Gorkha) and at Tribhuvan University in Kathmandu and Aberdeen University of the UK, helped establish trust and relationships with both the sides.

The study obtained ethical approval from the Nepal Health Research Council (NHRC) and the Health Division of the UCPN-M and All Nepal Public Health Worker's Association (ANPHWA)- Maoist sister wing, granted access to their health workers (Devkota and van Teijlingen 2010). Letters from the NHRC, the University of Aberdeen, Tribhuvan University, and All Nepal Public Health Workers' Association helped create a favourable environment for accessing the research participants. However, the researcher had to be prompt and careful in presenting the right kind of letter to the right person. The researcher maintained political neutrality and kept a low profile in terms of clothing, eating, conversation and mannerisms and spoke the local Nepali language. The researcher ensured privacy/confidentiality of interviews,

anonymity and confidentiality of identity and information that was collected. In line with good research practice, participants were given the option to not participate or stop the interview any time they wanted.

### **Conclusion**

The first researcher experienced many security, privacy, logistical and methodological challenges in course of this field data collection. The study was done in a volatile and violent context. The researcher used a number of measures to address the problems, challenges and dilemmas encountered to enhance the quality of the data and analysis. We argue that there is often no quick fix and that the researcher has to keep every option flexible whilst maintaining well-developed scientific approaches to reduce bias as much as possible. Moreover, the researcher should take into account of "Do No Harm" principle while working between two violent armed forces. It is recommended that methods and tools for conducting research in difficult and violent circumstances be developed and disseminated by the academic institutions and institutions working in the field of peace building.

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### **References**

- Axnin, WG, Ghimire, D. & Williams, NE(2012). Collecting survey data during armed conflict. *J Off Stat.* 28(2): 153–171.
- Devkota, B. & van Teijlingen E. (2009) Politicians in Apron: Case study of Rebel Health Services in Nepal, *Asia-Pac Public Health* 21(4): 377-384.
- Devkota, B. & van Teijlingen E. (2010) Demystifying the Maoist barefoot doctors of Nepal, *Med Conflict Survival* 26: 108-123.
- Devkota, B. & van Teijlingen, E. (2012) "Why did they join?" Exploring the motivation of rebel health workers in Nepal *J Conflictology* 3(1): 18-29.
- Glaser, B. & Strauss, A.L. (1967). *The discovery of grounded theory: Strategies for qualitative research.* Chicago, Aldine.
- Hoffman, D. (2003). Frontline anthropology: Research in time of war. *Anthropol Today*, 19(3): 9–12.
- Forrest Keenan, K., van Teijlingen, E. & Pitchforth, E. (2005) The analysis of qualitative research data in family planning and reproductive health care, *J Fam Plann Reprod Health Care* 31(1): 40-43.
- Kovats-Bernat, J.C.(2002). Negotiating dangerous fields: Pragmatic strategies for fieldwork amid violence and terror. *Am Anthropol*, 104(1): 208–222.
- MacKenzie Bryers, H., van Teijlingen, E. & Pitchforth, E. (2014) Advocating mixed-methods approaches in health research, *Nepal J Epidemiol* 4(5): 417-422.

- Macrae, J., Zwi A.B & Gilson, L. (1996). A triple burden for health sector reform: post-conflict rehabilitation in Uganda. *Soc Sci Med* 42 (7):1095-1108.
- Pettigrew, J Shneiderman, S. & Harper, I. (2004). Relationships, complicity and representation: Conducting research in Nepal during the Maoist insurgency. *Anthropol Today*, 20(1): 20–25.
- Shah, A.& Pettigrew, J. (2009). Windows into a revolution: Ethnographies of Maoism in South Asia. *Dialect Anthropol* 33:225–251.
- Shneiderman, S, & Turin, M. (2004). The Path to Janasarkar in Dolakha District: Towards ethnography of the Maoist movement in Himalayan People's War: Nepal's Maoist Rebellion. Michael Hutt, (ed.). London: Hurst & Co.: 77-109.
- Sriram, C.L. King, J.C, Mertus, J.A. Ortega, O.M,& Herman, J. (2009). *Surviving field research: Working in violent and difficult situations*. London: Routledge.
- Weinstein, J. M. (2007). *Inside Rebellion: The politics of insurgent violence*, Cambridge University Press.
- WHO (2008). Neglected health system research: Health policy and systems research in conflict-affected fragile states. Research Issue Oct 2008. Retrieved from <http://digicollection.org/hss/documents/515873e.pdf>

## Role of Health Literacy on Menstrual Hygiene Practice among the Girl Students

Shanti Prasad Khanal\*

### ABSTRACT

The main aim of this study was to find out the role of health literacy on menstruation hygiene practice of campus girls. The population of this study were girls studying health and physical education in Surkhet Campus and HA/Staff Nurse in SEDA Campus. Surkhet was selected by proportional stratified sampling. This study followed descriptive and cross-sectional design. The study used two tools Short Test of Functional Health Literacy in Adults (S-TOFHLA) and Self Administrated Questionnaire for collecting data. It was found that health literacy among girls of study area is not satisfactory. The findings indicate that 53.93 percent respondents have adequate health literacy. Adequate health literacy level of girls of HA/Staff nurse, aged 16-18 years and 19-21 years and Chhetri and Janajati had adequate health literacy. The findings support that higher proportions of the adequate health literate respondents have good menstruation hygiene practice than inadequate health literate respondents. Finally, the results indicated that health literacy among the girls is inadequate, that calls more concern to the matter of health literacy in educational programs.

**Key Words:** Adequate, inadequate, health literacy, marginal, menstrual hygiene practice,

### Introduction

Health literacy is important not only for health but also for socioeconomic development (Win et al., 2015). Health literacy is a comparatively new concept (Nutbeam, 2000) and new to research in public health (Hepburn, 2012). Health literacy concept emerges from theories of social exchange, social cognitive and self-efficacy (as cited Hepburn, 2012). Health literacy has increased in its importance in terms of public health. It is now recognized as a key factor to reduce risky habits (Liu, Liu, Li and Chen, 2015), an emerging concept that involves the bringing together of people from both the health and literacy fields and builds on the idea that both health and literacy are critical resources for everyday living (WHO, 2009). Health literacy is a key outcome from health education (Nutbeam, 2000). Health literacy defined as the 'degree to which individuals have the capacity to obtain, process and understand basic health information and services needed to make appropriate health decisions (Mantwill and Schulz, 2015). Public health literacy is corresponding to individual health literacy and outcomes include a community's understanding of health messages (Berkman, Davis & McCormack, 2010).

Health literacy is important for health of the people. In most countries literacy rates are lower among women than men. There is a clear correlation between inadequate health literacy and poor health outcome. Increasing rates (47%) of chronic disease are estimated to account for almost half of the total burden of disease. The additional costs of limited health literacy ranges from 3 to 5% of the total health care cost per year. Health information demands are high but a gap exists between the health-related materials and the reading skills of the audience. Low level of health literacy means that a person is unable to manage their own health effectively, access health services effectively, understand the information and make healthy decisions (WHO, 2008).

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Improving the health literacy (HL) of those with the poorest health outcomes is an important tool (WHO, 2008). Lower health literacy is a public health issue (Prothero et. al, 2017). People with low health literacy typically engage in unhealthy behaviours. Young boys and girls (11-12 years) with low HL regarding health/drug knowledge were four times more likely to have smoked than those with high HL. Individuals with low HL may inadequately make use of medical preventive services (Appleton, 2010). Low health literacy has been linked to inadequate health behaviors and poor health outcomes containing death (Centers for Disease Control and Prevention, 2015). Adequate health literacy is not always associated with years of formal education (as cited Koh et. al, 2010). Inadequate health literacy is seen across various levels of education that have been shown to be most vulnerable to poor understanding (Hepburn, 2016). Just as, low literacy is linked to low health status and socioeconomic disadvantage (The role of health literacy, 2005). There is general agreement that a relationship exists between health literacy and health outcomes (Neatboom, 2000). Only within the last decade, researchers have recognized the problems associated with health literacy (Speros, 2005).

Above mentioned literatures and concept accomplish that there is a close relationship between health literacy and healthy lifestyle. Person's health status depends upon positive health behaviour and health behaviour depends on literacy level of the people. Limited literacy is linked to several adverse health-related variables, including health care, hospitalization, global measures of health, and some chronic diseases. Health literacy is still in its initial phases of growth, it is however an immense and speedily growing frame of knowledge. However, these all studies were conducted in medical settings. To the best of my knowledge, no studies have been carried out about health literacy and menstrual hygiene management in the context of Nepal. So, this study aimed to explore situation of health literacy and its role on menstruation hygiene practice among the girl students.

### Method

This study followed descriptive and cross-sectional design. Its nature was quantitative. Data was collected from Surkhet Campus (Education) and Surkhet Education Development Academy (SEDA) College of Health Science. All (322) the girl students studying B. Ed majoring HPE in Surkhet Campus (Education) and Health Science (HA and staff nurse) in SEDA Campus of Health Science in Surkhet valley were recruited as study population. All total, 160 girl students studied in BEd 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> years (Surkhet Campus, 2074) and 162 girl students in HA and Staff Nurse 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> years (SEDA, 2074). Out of total, 178 (55.27%) girl students were selected as a sample by calculating the formula of Solvin (1960). The study used proportional stratified sampling to select the study participants. Two strata were made. One is general education (B. Ed) and another is health science (HA/Staff Nurse). The total population and sampling size of the study is presented in the following table (Surkhet Campus, 2074; SEDA, 2074).

Table I

*Study population and sample size of the study.*

Description	Category	Total		Selected Sample (55.27%)			total
		B.Ed	HA/ Staff Nurse	B.Ed	HA/ Staff Nurse		
Year	First	55	54	30	30	60	
	Second	60	57	33	32	65	
	Third	51	51	25	28	53	
Total		160	162	88	90	178	

The study used health literacy scale (Short Test of Functional Health Literacy in Adults (S-TOFHLA) and Self Administrated Questionnaire as data collection tools. The Nepali Version S-TOFHLA was used to measure the level of health literacy. Earlier self-administrated questionnaire was given to the respondents to fill their answers. Health literacy level of the respondents was analyzed on the basis of scores achieved by the respondents. STOFHLA tool is divided into three levels, like inadequate (score of 0-16) marginal (score of 17-22) and adequate (score of 23-36).

## Results and Discussion

This chapter describes the results and discussion of descriptive study that analyzed the health literacy level and menstruation hygiene management among the girl students of respective campuses.

### Results

In this sub chapter, the data on personal information, situation of health literacy and menstruation hygiene practice of the respondents are analysed.

#### *Situation of Health Literacy*

In order to find out the situation of literacy level of the girl students, S-TOFHLA tool was used. This sub-chapter includes level of health literacy of girl students on the basis of age, caste, stream, educational level, etc.

Health literacy level. STOFHLA tool is divided into three levels, inadequate, marginal and adequate. Literacy in Health Care (n.d.) states that score of 0-16 correct answers indicate inadequate health literacy, 17-22 indicate marginal health literacy and 23-36 indicate adequate health literacy.

Table 2

#### *Health literacy level of girl students*

S.N.	Description	No.	Percentage
1	Inadequate	17	9.55
2	Marginal	68	36.51
3	Adequate	93	53.93
	Total	178	100

Table 2 shows that among the participants in this study, 53.93 percent has adequate health literacy. Some (36.51%) of participants had marginal health literacy and only 9.55 percent had inadequate health literacy.

#### *Health literacy level and age*

Age is one of the basic characteristics of the demographic sector, which plays a vital role in determining the health literacy level. In this study, the girl students' health literacy level was same as age increased. The highest health literacy level was appraised in the girls with age 16-18 years. The study showed that health literacy level of 16-18 years and 19-21 years was higher than that of girls of aged 22-24 years. Marginal and inadequate health literacy was higher of the girls than girls aged 22-24 years (60.71%) than the girls aged 19-21 (40%) and 16-18 (29.16%). Similarly, the girls aged 22-24 (10.71%) years had inadequate health literacy than of 19-21 and 16-18 years' age girls.

Table 3  
Health literacy level and age of the respondents

S.N.	Level	Age						Total
		16-18		19-21		22-24		
		No.	%	No.	%	No.	%	
1	Inadequate	7	8.54	7	10	3	10.71	17
2	Marginal	24	29.16	27	40	17	60.71	68
3	Adequate	51	62.50	34	50	8	28.57	93
Total		82	46.06	68	38.20	28	15.73	178

The association between age and health literacy of girl students was not significant. These findings suggest that there is no role of high age to increase health literacy level.

#### Health Literacy Level and Caste

Caste is a vital character of socio-demographic sector. Caste effects on girls' health literacy. As per caste, the Chhetri (59.25%) and Janajati (53.65%) had more adequate health literacy level than the Brahmin (36.46%) and Dalit (47.05%) girls.

Table 4  
Health literacy according to the caste of the respondents

S.N.	Level	Caste								Total
		Brahmins		Chhetri		Janajati		Dalit		
		No.	%	No.	%	No.	%	No.	%	
1	Inadequate	4	10.25	7	8.64	3	7.33	3	17.64	17
2	Marginal	20	51.28	26	32.03	16	41.66	6	35.29	68
3	Adequate	15	36.46	48	59.25	22	53.65	8	47.05	93
Total		39	21.91	81	49.49	41	23.03	17	9.55	178

The data presented in table no 4 shows that the association between caste and health literacy of girl students was not significant. The study result shows that there is same health literacy level among so called high caste and lower caste.

#### Health Literacy Level and Stream

In this study, girl students of HA/ Staff Nurse were generally associated with adequate health literacy, while the B.Ed. level girls were associated with the marginal and inadequate health literacy (Table5).

Table 5  
Health literacy levels of girl students according to streams.

S.N.	Level	HA/Staff nurse		B.Ed		Total
		No.	%	No.	%	
1	Inadequate	3	3.33	14	15.90	17
2	Marginal	16	17.77	52	59.09	68
3	Adequate	71	78.88	22	25.00	93
Total		90	50.56	88	49.43	178

According to the table no5, among the total participants of the study, 15.90 percent girls of B.Ed. had inadequate literacy while only 3.33 percent girls of medical science had inadequate health literacy. Likewise, majority (59.09%) of girls of B.Ed. Level and only 17.77 percent girls

of health science had marginal health literacy. Similarly, 78.88 percent girls of HA/Staff Nurse had adequate health literacy while only 25 percent girls of B.Ed. had this level of health literacy.

**Health Literacy and Years of Level of Education**

The girl students with high education level are more likely to obtain for health-related knowledge. In the presented study, health literacy was increased as the level/year increased.

Table 6

*Health literacy and years of education level of girl students*

S.N.	Level	Level of qualification													
		H.A/Staff Nurse						Total	B.Ed.						
		1st year		2nd year		3rd year			1st year		2nd year		3rd year		
		No.	Per.	No.	Per.	No.	Per.	No.	Per.	No.	Per.	No.	Per.		
1	Inadequate	3	10.	-	-	-	-	3	9	30	4	12.12	1	4	14
2	Marginal	9	30	7	21.87	-	-	16	17	56.86	23	69.69	12	48	52
3	Adequate	18	60	25	78.12	28	100	71	4	13.33	6	18.18	12	48	22
	Total	30	33.33	32	35.55	28	31.11	90	30	34.04	33	37.5	25	28.40	88

The study showed that the girls students with first year of HA/Nursing (10.17%) and B.Ed. (30%) had inadequate health literacy. Marginal health literacy is also more in first year girl students of HA/Nursing (30.17%) and B.Ed (56.66%) than the other levels. The adequate health literacy was higher in girl students of third year of HA/Nursing (100%) and B.Ed. (48%). Adequate health literacy in second year of HA/Nursing (78.12%) and B.Ed. (18.18%) was more than the girls of HA/Staff Nurse of first year (60%) and B. Ed (13.33%).

**Health Literacy and Menstrual Hygiene Management**

Menstrual Hygiene Management (MHM) is the absorption of menstrual blood on clean material which can be changed in privacy. It also incorporates the availability of soap and clean water, to wash re-usable sanitary materials and the body, as well as a suitable place of disposal for used materials (WHO-UNICEF, 2012). MHM focuses on practical strategies for coping with monthly periods. MHM refers to ways women keep clean and healthy during menstruation and how they acquire, use and dispose of blood absorbing materials (Loughborough University, 2014).

Table 7 shows that, out of total, most (73.59%) girl students used sanitary pad, 39.95 percent used clean pieces of cloths and 10 percent used both. Out of total 47.05 percent inadequate, 83.82 percent marginal and 70.96 percent adequate literate girl students used sanitary pad. Likewise, most (70.58%) inadequate, 30.76 percent marginal and 29.03 percent adequate literate girl students used clean pieces of clothes during menstruation.

Table 7

*Role of health literacy on menstrual hygiene practice*

S.N.	Level	Menstrual hygiene practice									
		Used pad		Use of clean peace of cloths		Daily sewer		Twice a period		One time during period	
		No.	Per.	No.	Per.	No.	Per.	No.	Per.	No.	Per.
1	Inadequate	8	47.05	12	70.58	6	35.29	6	35.29	5	29.41
2	Marginal	57	83.82	25	36.76	34	50	26	38.32	8	11.76
3	Adequate	66	70.96	27	29.03	54	58.06	23	24.73	18	19.35
	Total	131	76.59	64	39.95	94	52.80	55	38.89	30	16.85

The table 7 also shows the data related to bathing practice of women during menstruation. This table shows that majority (52.80%) of girl students took bath once a day, 30.89 percent took bath once in twice a period and 16.85 percent had taken bath one time during period.

Among the girl students, 35.29 percent inadequate literate girl students took bath daily during the period. Likewise, 50 percent of marginal and 58.06 percent of adequate literate girl students took bath in twice a period. Out of total 35.29 percent inadequate, 38.32 percent marginal and 24.73 percent girl took bath in twice a period, out of total inadequate literate (29.41%), marginal literate (11.76%) and adequate literate girls (19.35%) took bath one time during the period.

### **Discussion**

The findings from situation of health literacy and menstrual hygiene practice of the study participants are discussed here.

#### ***Situation of health literacy***

To find out the literacy level of the girl students, S-TOFHLA tool is used. It is functional health literacy assessment tool design to evaluate adult health literacy. Findings of age, streams, cast and years or level of education indicate that health literacy level of the study participants is poor. In this study, the majority of the participants have adequate health literacy category (53.93%) followed by marginal health literacy (36.51%) and inadequate health literacy (9.55%) category. Ickes and Cottrell (2010) state that group of university students would seem to have good health literacy levels. Some studies conclude that low health literacy may be associated with poor outcomes in person and high health literacy levels is associated with higher level of health promotion behaviour (as cited in Xu, 2018). A woman's health literacy is an important element in her ability to engage in health promotion and prevention activities both for herself and her children. (Shieh & Halstead, 2009, cited as Larson, 2011). Studying more health education-related subjects was associated with a higher health literacy competency, due to these students' higher rates of accessing and understanding health information in the health promotion domain (Vozikis et al., 2014).

This study displays that the association between age and health literacy of girl students was not significant. These findings suggest that there is no role of high age to increase health literacy level. Some studies suggest that health literacy increases with age. But fewer data is revealed that age is negatively associated with health literacy (as cited in Vozikis, Drivas and Milioris, 2014). Similarly, the data presented in table no 4 shows that the association between caste and health literacy of girl students was not significant. The study result shows that there is same health literacy level among so called high caste and lower caste.

This study showed that health literacy level of girls of HA/staff nurse was higher than that of girls of B.Ed. The girls of HA/ Nursing are more likely to have health knowledge and health skills. They can obtain theoretical, practical and clinical information and skills. They attend regular in class as well as practical events. It may be stated that health education courses of B. Ed level seems not be context relevant and emphasizes on 'knowledge' and messages, rather than providing practical information and building skills to negotiate health. Inadequate teaching HPE leads girls to have poor health information and skills. So, ineffective teaching trends of health education should be enhanced including critical and interactive teaching opportunities

(Khanal, 2018). Vozikis, Drivas and Milioris (2014) raise the question of how university health education is related to students' health literacy. We hypothesized that enrolling in health promotion related courses of study would be associated with higher health literacy competency among university students.

Year and level of education is one of the most important positive factors that influence girl student's health literacy level. The adequate health literacy was higher in girl students of third year of HA/Nursing (100%) and B.Ed. These results suggest that the association between health literacy and level of education of girl students was significant. It seems that health literacy was high as the level increased.

### **Health Literacy and Menstruation Hygiene Practice**

Out of total, 47.05 percent inadequate, 83.82 percent marginal and 70.96 percent adequate literate girl students used sanitary pad. Majority of adequate literate girl students had taken bath once time during the period. Higher percentage of adequate health literate girl students had used sanitary pad than inadequate health literate and higher proportion of inadequate literate respondents had used piece of clothes as a pad during the period than adequate health literate respondents. This indicates that health literacy level has significant role in using sanitary pad for the period of menstruation period. The data illustration from table no. 7 concludes that bathing practice is affected by respondent's health literacy status.

The findings discussed in this paper provide valuable information that will inform to providers, policy makers and planners to know the situation of health literacy of college girls and will help to approach a strategy of health literacy in the study area. This study has limitations that must be considered. The main delimitation is related to the measurement of health literacy. This study is limited to HPE girl students of Bachelors level and health science of PCL level (HA and Staff Nurse). Therefore, this study does not enable to generalize to all campus going girls in Nepal. So, further study is needed to measure the validity and reliability of the measurement of health literacy.

### **Conclusion**

In conclusion, the study shows that health literacy level among girl students of campus is unsatisfactory. There is variation in health literacy level on the basis of age, caste, level, stream. The study result shows that there is similar health literacy level between so called high caste and lower cast. The study also concludes that health literacy is high as the level increased. Comparatively, the health literacy of girl students of B. Ed level is not satisfactory than HA and Staff Nurse. It can be concluded that level of health literacy influences the menstruation hygiene practice. This result also specifies that there is a role of health literacy level in menstruation hygiene management of girl students. Therefore, it is recommended that health literacy should be included in educational programme.

### **References**

- Appleton, A. A. (2010). *Promoting health literacy through the school nutrition environment*. Unpublished Thesis, Masters of Science of, Iowa State University. Retrieved from [lib.dr.iastate.edu/cgi/viewcontent.cgi?](http://lib.dr.iastate.edu/cgi/viewcontent.cgi?)
- Berkman, N. D., Davis, T. C. & McCormack, L. (2010). Health literacy: What is it? *Journal of Health Communication, International Perspectives*, 15 (2), Retrieved from <https://www.tandfonline.com/doi/full/10.1080/10810730.2010.499985>

- Centers for Disease Control and Prevention (2015). *Healthy weight-it's not a diet, it's a lifestyle! about BMI for children and teens*. Retrieved May 14, 2010, from <http://www.cdc.gov/media/subtopic/matte/pdf/03121aHealthyweightpdf>
- Hepburn, M. (2016). *The relationships between health literacy, self-efficacy and readiness for change to health promotion behaviours in Urban Black Women*, Seton Hall University Dissertations and Theses (ETDs). Retrieved from <http://scholarship.shu.edu/dissertations/2197>
- Ickes, M. J. and Cottrell, R. (2010). *Health literacy in college students*, Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/20304761>
- Khanal, S.P. (2018). *Role of health literacy in changing health behaviour among the girl student*, Unpublished Mini –research Report, Submitted to Research Division, Rectors Office, TU.
- Larson, J. L. D. (2011). *A descriptive study of rural women 's health literacy about vitamin D*. Submitted in partial fulfillment of the requirements for the degree of Masters of Nursing, Montana State University. Retrieved from <https://scholarworks.montana.edu/.../Larson>
- Liu, Y. B., Liu, L., Li, Y. F. and Chen, Y.L. (2015). Relationship between health literacy, health-related behaviours and health status: a survey of elderly Chinese. *International Journal of Environmental Research and Public Health*, Retrieved from [www.mdpi.com/journal/ijerph](http://www.mdpi.com/journal/ijerph).
- Loughborough University (2014). *Menstruation hygiene management for school girls*. Retrieved from [wedcmenstruationhygienemanagement\\_forschoolgirls.pdf](http://wedcmenstruationhygienemanagement_forschoolgirls.pdf).
- Mantwill, S. and Schulz, P. J. (2015). Health literacy in Mainland China: validation of a functional health literacy test in simplified Chinese, *Health Promotion International*, Volume 31, Issue 4, Retrieved from <https://doi.org/10.1093/heapro/dav043>
- Nutbeam, D (2000). Health literacy as a public health goal: a challenge for contemporary health education and communication strategies into the 21st century. *Health Promot Int*. 2000;15(3):259–268, Retrieved from <http://dx.doi.org/10.1093/heapro/15.3.259>
- Speros, C. (2005). *Health literacy: concept analysis*, Retrieved from <https://onlinelibrary.wiley.com/doi/epdf/10.1111/j.1365-2648.2005.03448.x>
- The Role of Health Literacy (2005). Retrieved from [http://www.emhf.org/resource\\_images/Navigating\\_Health\\_FINAL.pdf](http://www.emhf.org/resource_images/Navigating_Health_FINAL.pdf)
- Vozikis, A. Drivas, K. and Milioris, K. (2014). Health literacy among university students in Greece: determinants and association with self-perceived health, health behaviours and health risks, *Archives of Public Health*, Retrieved from <http://www.archpublichealth.com/content/72/1/15>
- WHO & UNICEF (2012). *Consultation on draft long list of goal, target, and indicator options for future global monitoring of water, sanitation, and hygiene*. WHO/UNICEF joint monitoring programme for water supply and sanitation and hygiene, Retrieved from [www.unwater.org](http://www.unwater.org)
- Win, M. Oo, Soe, P. P., Lwin, K. T. (2015). *Status and determinants of health literacy: a study among adult population in selected areas of Myanmar*, Retrieved from <https://www.ijcmph.com/index.php/.../972>
- Xu, X. Y. (2018). *Health literacy, self-efficacy, and associated factors among patients with diabetes*. Retrieved from <https://www.healio.com/public-health/journals/hlrp/2018-4-2>

# Food Consumption Habits and Nutritional Status of Women and Infants

Tanka Maya Pokharel\*

## ABSTRACT

This paper attempts to find-out the existing knowledge of nutrition on food consumptions and dietary practices of women and infants. I have used the systematic review of the Hinari database which were published from 2012 April to 2018. These data show that women and infant food consumption behaviour and nutrition status is directly related to family food consumptions. Research shows that low cobalamin and folic acid was found in women before they conceive and folate deficiency was uncommon on food consumptions. Low intakes of iron are consistent with a high prevalence of anaemia seen in the six to twenty-four months of children. Food beliefs and practices tend to reduce women's consumption of micronutrient-rich foods, such as dietary restrictions during menstruation, pregnancy and lactation. The research shows that are overlapping with these beliefs and practices on intra household allocation of food. The poor dietary practice among pregnant women which ranges from 39.3 percent to 66.1 percent have limited nutritional knowledge and wrong perception towards dietary behaviour. It was also found that basis underweight is greater in rural areas (31percent) than in urban areas (23percent). Those children whose mothers are illiterate are more than twice as likely to be underweight than the children whose mothers have at least basic education.

**Key words:** Dietary practice, food consumption, food behaviour and practice deficiency, nutritional knowledge.

## Introduction

Nutrition is the intake of food considered in relation to the body's dietary needs. It is also the science that deals with the digestion, absorption and metabolism of food that is the utilization of food in the body. Good nutrition, an adequate, well balanced diet combined with regular physical activity is cornerstone of good health. Poor nutrition can lead to reduced immunity. Increased susceptibility to disease, impaired physical and mental development, and reproductively (WHO, 2018).

Nutrients are constituents of food which helps to maintain our body function, growth and renewal of its components and to protect our organ. According to the AHS (2015/16), urban households consume about 1.7 times more than the rural households. Nepalese household expends Rs. 322730 per year on which 53.8% of per capita income is spent on consuming food. MOPE has also indicated the same data that is nearly 42.2 percent of the household's heads were in the age group 30 to 49 years but 25.9 percent households were headed by female who played the major role on food consumption decision making. The male members of reproductive age group population were 48.8 percent and 51.6 percent were females on which the total reproductive age population was 58.8 percent in Nepal (NDHS, 2016). Knowledge of

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pregnancy finds the gap on new born care, low dietary diversity and micronutrient adequacy is observed among lactating women in a semi-urban area of Nepal.

### **Methods**

Data were entered into an online database using standard abstraction items, one for existing reviews and reports and another for original research. To carry out this systematic review study, first of all, I made a search of the Henari database found in feeding practice of mother and infant nutritional status of mother and infant between 2012- April to 2018 which were sorted by national and international research. Among them, I had chosen ten research articles, six from feeding practice of mother and infant and four from nutritional status of mother and infants. The reviewed literatures had different theoretical and philosophical bases such as Health Belief Model (HBM) which help to determine on the effect of nutrition belief based on health belief model on nutritional knowledge and dietary practice of pregnant women (Dissie, 2017). I had also correlated among the findings of reviewed articles. This paper has been prepared for the nutritional condition assessment for women and children. I have consulted different studies and web sites, such as WHO, Hinari, Research4life, Google Scholar and Proquest.

### **Results and Discussions**

The detailed shape of the literature shows that women and infant nutrition towards the key theme are knowledge of nutrition and its relation with dietary behaviours, food consumption and dietary practices and impact of food consumption and dietary practice on nutrition basis of the systematic review.

#### ***Knowledge of Nutrition and its Relation with Dietary Behaviours***

On the basis of knowledge of nutrition and its relation with dietary behaviours, Ethiopia study shows that poor dietary practice among pregnant women ranges from 39.3 percent to 66.1 percent. Limited nutritional knowledge and wrong perception towards dietary behaviours were underlying factors for that result. Similarly, IOM Australia has suggested, that folate is needed before 28 days of pregnancy. On the basis of baseline survey and lab test result, women in pregnancy period need more nutrients care but results showed that low folate was used in pregnancy (Opie et al., 2016). HBM construct was assessed using five-point Likert scale for dietary knowledge and practice (Diddana, Kelkay, Dola, & Sadore, 2018). Infants under six months should be exclusively breastfed but only 66 percent of the infants under six months were found to be breastfed (NDHS 2016). It was found that in addition to breast milk, six percent of these young infants consume plain water, six percentages consume non-milk liquids, 10 percent consume other milk and 12 percentages consume complementary foods. Only nine percent of infants under six months were fed using a bottle with a nipple.

Eighty-three percent of children aged six-eight months received timely complementary food (NDHS 2016). Survey shows that 10 percent of children were wasted and two percent were severely wasted. On the basis of food consumption, children can be underweight for their age because they are stunted, wasted or both. Weight-for-age is an overall indicator of nutritional

health. Research has used the waterloo classification for nutritional status. Food beliefs and practices tend to reduce women's consumption of micronutrient-rich foods, such as dietary restrictions during menstruation, pregnancy and lactation. Overlapping with these beliefs and practices overall intra household allocation of food is evident in the study communities.

### ***Food Consumption and Dietary Practices***

Girls mostly consume fruits, vegetables than boys but milk and snacks are more demanded by boys. Similarly, those people who sleep for short time can consume more food because of hormonal change of body and obesity (Westerlund et al., 2009). Sleep length is not only the way to measure obesity. More study suggests to consume low alcohol who are planning pregnancy, it also suggests to intake good nutrients, exercise and avoid smoking (Campbell et al., 2016). The survey shows that general practices among 238 women who became pregnant within three months of being interviewed and the main outcome measures folic acid supplements intake, alcohol consumption, smoking, diet, and physical activity before pregnancy, hygiene value and gestational weight; pregnancy needs to be well nutrient. Seven feeding guidelines like grains roots and tubes, legumes nuts, dairy products, flesh foods, eggs, Vitamin "A" rich fruits and vegetables including other fruits and vegetables for better nutrition for women and infant (Van Esterik, 2012). Furthermore, it has suggested that infant should be consumed minimum four items in 24 hours ANC visit, nutrition, folate & vitamins necessary for pregnancy.

Study was focused on pre-lacteal feeding and discarding colostrum. The research shows that there was a practice of providing all newborn babies with butter ghee, oil honey, sugar or animal milk before the initiation of breastfeeding. Nepalese study shows that complementary feeding in the form of home-made cereal based (Lito), animal or powder milk are commonly introduced from one month of life due to common belief that mother milk alone is not sufficient for their children (Henjum et al., 2015). Nutritional status of infant, food and nutrition program and institute of public health Mexico shows that adoption of recommended breastfeeding and complementary feeding behaviours along with the access to appropriate quality and quantity of foods are essential components for optimal nutrition of infants. Research shows that iron, zinc and vitamin B-6 are deficient in complementary food diets in Bangladesh. Low intakes of iron are consistent with a high prevalence of anaemia seen in infants (Lutter & Rivera, 2003). More explore on intakes calcium, vitamin 'A', thiamine, folate and vitamin 'C' depends on the age range in question and set of requirements used in the assessment. There were high nutritional requirements relative to body size and small amount of foods. Complementary food diets are inadequate like iron, zinc and vitamin B-6. Riboflavin, niacin, calcium, thiamine, folate, vitamin C and vitamin A are also likely to be inadequate for them (Lutter & Rivera, 2003). Dietary diversity is often defined as the number of certain food groups consumed by an individual or family (Declerck, 2016). Study has recommended that different age groups individual dietary diversity is related to increased nutrient adequacy of the diet. Dietary diversity was found positively correlated with the micronutrient for children. Association between dietary diversity and micronutrient uptake, ecological knowledge plays an

important role in efforts to direct food systems at improved human nutrition. Determinants of exclusive breast-feeding study were in Pokhara, Nepal among the eighty-five mothers who had delivered within two months shows that breast feeding factors, friends, types of delivery, cultural practices and baby. First fed also impacts on nutrition of infant (NDHS, 2016). Cultural factors, food beliefs and practices tend to reduce women's consumption of micronutrient-rich foods such as dietary restrictions during menstruation, pregnancy and lactation. On beliefs and practices, an overall pattern of dis-favouritism of females in the intra household allocation of food is evident in the study communities. While staple food items like vegetables, meat, ghee, are often preferentially allocated to valued household members including adult males and small children (Gittelsohn et al., 1997). Antenatal care in Nepal shows that 4070 mothers who completed the seven recommend components like blood pressure, urine, syphilis, anaemia, iron supplements, worm infestations, tetanus toxic injection and health education were included in the basic criteria for antenatal care. ANC visit would improve the quality of women health but lack of education and poor economic status of women played a vital role in decreasing ANC visit which suggested health education and awareness to be in first priority before ANC. It was experienced 287,000 maternal deaths globally in a yearly (2010). Injury infection and morbidity were the main causes of the MMR in Nepal. Maternal mortality rate was 281/100000 live birth. ANC visit decreased the anaemia, pregnancy, induced hypertension, preterm labour, promote positive pregnancy risk of low birth weight. The sample research shows that 29 percent of women have received good ANC services (Joshi, Torvaldsen, Hodgson, & Hayen, 2014).

#### ***Impact of Food Consumption and Dietary Practice on Nutrition***

Those people who sleep for short time can consume more food because of hormonal change of body and obesity (Westerlund, Ray, & Roos, 2009). Research shows that low dietary diversity and micronutrient adequacy among lactating women in a semi-urban area of Nepal, the mean usual energy of lactating women intake was 8464 kJ/d. The main source of energy were protein, fat and carbohydrates that was found to be taken 11 percent, 13 percent and 76 percentage respectively (Henjum et al., 2015). The micronutrient intake of lactating women was below the estimated average requirements of vitamin C and Zinc. About 60 percentage of the energy intake was positively associated with dietary diversity, women's educational level and socio-economic status.

The low micronutrient intakes are probably explained by low dietary diversity and a low intake of micronutrient-rich foods (Henjum et al., 2015). The 2011 DHS found that one in three children in Cameroon suffer from malnutrition. The study shows that 13 percentage to 14 percent children who were victims of severe malnutrition in 2004 increased chronically from 32 percentage to 33 percentage. UNICEF estimated that at least 105,000 children less than five years old died of malnutrition annually in Cameroon. Furthermore, 210,000 children less than 5 years suffered from chronic malnutrition with 120,000 of them living in the North and extreme North regions of the country (Vitalis et al., 2018). This study further suggested that nearly two thirds of infants below six months of age were introduced to homemade cereals

(Lito) as complementary food whereas 10 percentage and seven percentage introduced cereals (Henjum et al., 2015). A study on nutritional status and dietary practices on early pregnancy shows that Bangladeshi adolescents have little knowledge about nutrition. Among the 1552 pregnant adolescent, 36 percent had low body mass index, 28 percentage were anaemic, 10 percent had iron deficiency and 32 percent had vitamin A deficiency. We can conclude that consumption of animal source foods was 10.3 times a week. Education socio economic status associated with dietary practice also affects on BMI on early pregnancy (Mridha, Matias, Arnold, & Dewey, 2018).

Global Hunger with a population of 1.24 billion and among them over 17 percentage of India's population was undernourished. Hungnam report (2011) also estimated that 42 percentage of Indian children under 5 years of age were underweight which accounts for India having the highest number of undernourished children globally (Mridha et al., 2018). The Nepalese nutrition diet is shifting away from agricultural staple-based food to modern processed food with higher in total energy, total fat and sugar causing the overweight and diet related non-communicable disease. Economic structure has also changed shifting from away on agricultural food supply system. The Nepalese diet are triggered by income and urbanization so far it causes the processed food, edible oil and sugar easily available at market and also fast food (Henjum et al., 2015). Research based on the nutritional status and food intake of cobalamin and folate among non-pregnant women of reproductive age group in Bhaktapur, Nepal shows that cobalamin and folate are especially important for women of childbearing age due to their overall role in foetal growth and development. On the base of research, cobalamin and folate use was lacking in Bhaktapur, Nepal (Chandyo et al., 2016). Research explains on the basis of blood samples from 500 non-pregnant women and their 24-h dietary recalls with food frequency questionnaires from a sub-sample of 379 women. It was found that 72 percent nutritional Cobalamin intake was daily whereas low cobalamin was found in 42 percent of the women; folate deficiency was uncommon on food consumption (Chandyo et al., 2016).

Pregnancy obesity and maternal nutritional status during pregnancy study was based on factor analysis conducted by USA. This research shows that pregnant women who are obese have more risk of pre-eclampsia. Study used BMI indicators on pre-pregnancy and before conception. It also suggested that obese generated various problems that women need to concentrate, to be aware from food intake (Tomedi et al., n.d.). Nepalese study shows that relationship between maternal nutritional status, food intake and pregnancy weight gain is none related to the risk of low birth weight in Nepal. The cross-session study was used where altogether 376 women were selected among 27.9 percentage delivery cases. When observed among them low birth weight was higher in rural than urban areas. Maternal protein intake ( $r=0.05$ ) ( $P<0.001$ ), folate intake were significantly different in rural and urban areas (Acharya et al., 2016).

Nepalese study shows that immunization reduced low birth weight and empowered under powered to detect reduction of public health importance. The research showed larger impact on birth weight on better vaccine. In this study, vaccination vs. saline was used among 3693 women. They were randomized placebo (1846) another influenza vaccine (1847) mothers with flu vaccine. On the basis of comparison of three countries, the research suggested that recommended foods and vegetables consumption per day is 25percent in men and 29percent in women. In UK & Germany, people recommended meat as good sources of nutrition. In China 18-30 year's women mainly recommended fruits, vegetables, sugar sweetened beverages as their major feeding practice.

Finally, the study shows that maternal influenza vaccination did not improve birth weight and reduce influenza infections. The effect was mild to moderate malnutrition of six month life protected from nutrient food.

### **Conclusion**

Different studies show low nutritional status of infants and mother of different countries. The BMI of pregnant women is comparatively low as compared with standard BMI index. There is a wide variety of behaviours that is related to feeding practice of women and infant that promotes or prevents certain women and food consumption behaviours and nutrition status. Women's own food consumption behaviour strong correlates of infant food consumption behaviour. Some behaviours such as active and restrictive guidance are effective only in certain context, active being more effective in encouraging fruits and vegetables consumption, while restrictive guidance is more effective in discouraging unhealthy eating such alcohol, smoking, and junk food consumption. Low dietary diversity and micronutrient adequacy is observed among lactating women in a semi-urban area of Nepal. Even now a days there is no any provision to pregnant mother and infant for their nutrition right. Food security is most be launched in all over the country. Nutrition education program in the community should be launched as a health education programme.

### **References**

- Acharya, O., Zotor, F. B., Chaudhary, P., Deepak, K., Amuna, P., & Ellahi, B. (2016). Maternal nutritional status, food intake and pregnancy weight gain in Nepal. *Journal of Health Management, 18*(1), 1–12. <https://doi.org/10.1177/0972063415625537>
- Campbell, E. E., Dworatzek, P. D. N., Penava, D., de Vrijer, B., Gilliland, J., Matthews, J. I., & Seabrook, J. A. (2016, January 8). Factors that influence excessive gestational weight gain: moving beyond assessment and counselling. *Journal of Maternal-Fetal and Neonatal Medicine*. <https://doi.org/10.3109/14767058.2015.1137894>
- Chandyo, R., Ulak, M., Sommerfelt, H., Schneede, J., Ueland, P., Strand, T., ... Strand, T. A. (2016). Nutritional Intake and Status of Cobalamin and Folate among Non-Pregnant Women of Reproductive Age in Bhaktapur, Nepal. *Nutrients, 8*(6), 375. <https://doi.org/10.3390/nu8060375>

- Diddana, T. Z., Kelkay, G. N., Dola, A. N., & Sadore, A. A. (2018). Effect of nutrition education based on health belief model on nutritional knowledge and dietary practice of pregnant women in Dessie Town, Northeast Ethiopia: A cluster randomized control trial. *Journal of Nutrition and Metabolism*, 2018. <https://doi.org/10.1155/2018/6731815>
- Declerck, F. sA. J. (n.d.). S42. Retrieved from [www.nutritiondata.com](http://www.nutritiondata.com)
- Gittelsohn, J., Thapa, M., & Landman, L. T. (1997). Cultural factors, caloric intake and micronutrient sufficiency in rural Nepali households. *Social Science & Medicine*, 44(11), 1739–1749. [https://doi.org/10.1016/S0277-9536\(96\)00375-9](https://doi.org/10.1016/S0277-9536(96)00375-9)
- Henjum, S., Elin Torheim, L., Thorne-Lyman, A. L., Chandyo, R., Fawzi, W. W., Shrestha, P. S., & Strand, T. A. (2015). Low dietary diversity and micronutrient adequacy among lactating women in a peri-urban area of Nepal. *Public Health Nutrition*, 18(17), 3201–3210. <https://doi.org/10.1017/S1368980015000671>
- HHS. (2018). *Part E. Systematic review literature search methodology 2018 physical activity guidelines gdvisory committee scientific report E-1*. Retrieved from [https://health.gov/paguidelines/second-edition/report/pdf/06\\_E\\_Systematic\\_Review\\_Literature\\_Search\\_Methodology.pdf](https://health.gov/paguidelines/second-edition/report/pdf/06_E_Systematic_Review_Literature_Search_Methodology.pdf)
- Joshi, C., Torvaldsen, S., Hodgson, R., & Hayen, A. (2014). Factors associated with the use and quality of antenatal care in Nepal: a population-based study using the demographic and health survey data. *BMC Pregnancy and Childbirth*, 14(1), 94. <https://doi.org/10.1186/1471-2393-14-94> [doi]
- Lutter, C. K., & Rivera, J. A. (2003). Nutritional status of infants and young children and characteristics of their diets. *The Journal of Nutrition*, 133(9), 2941S–2949S. <https://doi.org/10.1093/jn/133.9.2941S>
- Mridha, M. K., Matias, S. L., Arnold, C. D., & Dewey, K. G. (2018). Factors associated with nutritional status and dietary practices of Bangladeshi adolescents in early pregnancy. *Annals of the New York Academy of Sciences*, 1416, 66–76. <https://doi.org/https://dx.doi.org/10.1111/nyas.13568>
- NDHS, (2016). *Nepal Population Report 2016*. Ministry Of Population and Education (pp. 1–232). Retrieved from [http://www.mope.gov.np/downloadfile/Nepal Population Report 2016\\_1481259851.pdf](http://www.mope.gov.np/downloadfile/Nepal%20Population%20Report%202016_1481259851.pdf)
- Opie, R. S., Neff, M., & Tierney, A. C. (2016). A behavioural nutrition intervention for obese pregnant women: Effects on diet quality, weight gain and the incidence of gestational diabetes. *Australian and New Zealand Journal of Obstetrics and Gynaecology*, 56(4), 364–373. <https://doi.org/10.1111/ajo.12474>
- Tomedi, L. E., Chang, C.-C. H., Newby, P. K., Evans, R. W., Luther, J. F., Wisner, K. L., & Bodnar, L. M. (n.d.). Pre-pregnancy obesity and maternal nutritional biomarker status during pregnancy: a factor analysis. *Public Health Nutrition*, (8), 1414–1418. <https://doi.org/10.1017/S1368980013000736>

- Van Esterik, P. (2002). Contemporary Trends in Infant Feeding Research. *Annual Review of Anthropology*, 31(1), 257–278. <https://doi.org/10.1146/annurev.anthro.31.040402.085428>
- Westerlund, L., Ray, C., & Roos, E. (2009). Associations between sleeping habits and food consumption patterns among 10–11-year-old children in Finland. *British Journal of Nutrition*, 102(10), 1531. <https://doi.org/10.1017/S0007114509990730>
- WHO | Marketing of breast-milk substitutes: National implementation of the international code. (2018). WHO. Retrieved from [http://www.who.int/nutrition/publications/infantfeeding/code\\_report2018/en/](http://www.who.int/nutrition/publications/infantfeeding/code_report2018/en/)

## Risk of Zoonoses among Livestock Farmers in Nepal

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### ABSTRACT

In Nepal most of the people are engaged in agriculture and livestock farming but having low knowledge and poor practices are making them prone to zoonoses threats. The aim of this study is to identify the risk of common zoonoses and existing knowledge, practices among livestock farmer in Nepal and all over the world. The study was conducted based on literature review. Literature search from Google Scholar, PubMed and Hinari databases was used for the study. The study shows that farmers have low knowledge and risky practices related to zoonoses. Sixty-five percent (n=40) of pork handlers were not following safety. Thirty six percent cattle farmers used to dispose placenta, 39.65% of them aborted foetus. Similarly, 23.25% farmers gave intra uterine medication with bare hands and 30% were sleeping in animal shed (n=250). African and South East Asian countries are facing more burden of zoonoses. Due to global warming and climate change, different zoonoses are emerging and re-emerging presentation in the world. Different research findings suggest that "One Health Approach" might help to fight against the zoonoses all over the world.

**Key words:** Endemic, emerging zoonoses, livestock, outbreak, zoonoses.

### Introduction

Livestock is a part of human life, either single family, small society or a developed country started their successful journey from a small chicken, calf or short farm. During the civilization animal occupy a special role in human society. Without the proper care this relationship may lead to a serious public health risk with huge economic consequences. There are growing concern about disease that human can acquire from animals. Taylor, Latham, and Woolhouse (2001) reported that 61% of all human pathogens are zoonotic.

Nepal is a pluralistic society with diverse ethnic, linguistic and socio-economic characteristics. Most of the farmers cultivate mixed crops as well as rear livestock according to the needs of their families and follow traditional practices which may increase risk for zoonoses. Nowadays, paradigm has been shifted. Due to the globalization, industrialization, and commercialization, people are shifting to commercial farming. But this may raise a question whether farmers are competent enough with relevant training and education. Illiteracy, poverty, traditional practices might have strong association with zoonotic diseases prevalence in countries like Nepal.

According to World Health Organization (WHO), 'Zoonoses are those diseases and infections which are naturally transmitted between vertebrate animals and human'. There are many

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examples of zoonotic diseases prevalent in the world. The three recent worldwide viral outbreaks, namely SARS (Severe Acute Respiratory syndromes), the bird flu (H5N1) and the swine flu (H1N1) are all examples of infections passed from animals to humans. Even the HIV virus was transferred from chimpanzee to humans in the last century (Basnyat, 2013). The Asian country India has the highest prevalence of rabies followed by Africa (WHO, 2018). Brucellosis, Taenia cysticercosis and Swine flu also have high prevalence in India. In 2009 Swine flu was pandemic all over the world emerging from Mexico. (Kang, Gunaseelan, & Abbas, 2014; Adhikari et al, 2009; Joshi et al 2018). In Nigeria 3044 human deaths occurred due to brucellosis and 300 thousand humans were affected by bovine tuberculosis in 2016 (FAO, 2018). Rabies, taenia cysticercosis, brucellosis, toxoplasmosis swine flu, avian influenza, dengue fever are the major zoonotic diseases with endemic potential in Nepal (DoHS, 2072/073).

People who are close to animal and have a poor knowledge and practices are more susceptible to zoonoses disease. Livestock farmers, veterinarian, para- veterinarian are closer to animal due to their profession. Similarly, children who are close to their pets are also at risk for zoonoses. People living around the wildlife human interface region such as buffer zones of protected area are also in greater zoonoses risk (Niroula, 2016).

Due to the lack of studies on the incidence and prevalence of zoonotic disease, a clear picture about them cannot be drawn in Nepal. However, a few studies that have been conducted shows that many common zoonotic diseases are present at an alarming proportion. On the other hand, in country like Nepal, ethnicity, culture and traditional practices are making us more susceptible to the zoonotic disease (Niroula, 2016). Drinking raw yak blood on some occasions in the Himalayans regions, drinking cow urine in some Hindu religious ceremonies etc. are some examples of them.

This paper tries to explore the knowledge and practice related to zoonosis on livestock farmers and identify the impacts of different socio- demographic variables in the field of livestock farming in Nepal. Study was conducted based on literature review. To cover the objectives, this paper tries to answer some research questions like, What are the practices of livestock farmers on safety precaution during exposure with animals? What is the gap between the knowledge and current practices related to zoonosis prevention in the community?

## **Methods**

Literature review was conducted across multiple data- bases including Google scholar, PubMed, BioMed and Hinari databases for study published in English using the word search terms related to livestock farmers and zoonoses, like knowledge, practice, emerging, re-emerging, risk, precaution, culture and livestock etc. Some articles and documents published by Department of Health Service were also reviewed. Study title and abstracts were searched with full article obtained and re-evaluated for inclusion and exclusion under the following criteria:

Inclusion criteria: Article related to zoonoses and livestock farmers, zoonoses related to interventional studies, knowledge and practice in zoonoses field and zoonoses prevalence related studies.

Exclusion criteria: Articles other than English language, livestock with commercial aspects and articles which are not relevant to zoonotic disease and case report. Based on above criteria, a total 123 abstract were reviewed, with 57 full text review and 18 papers included in the final analysis.

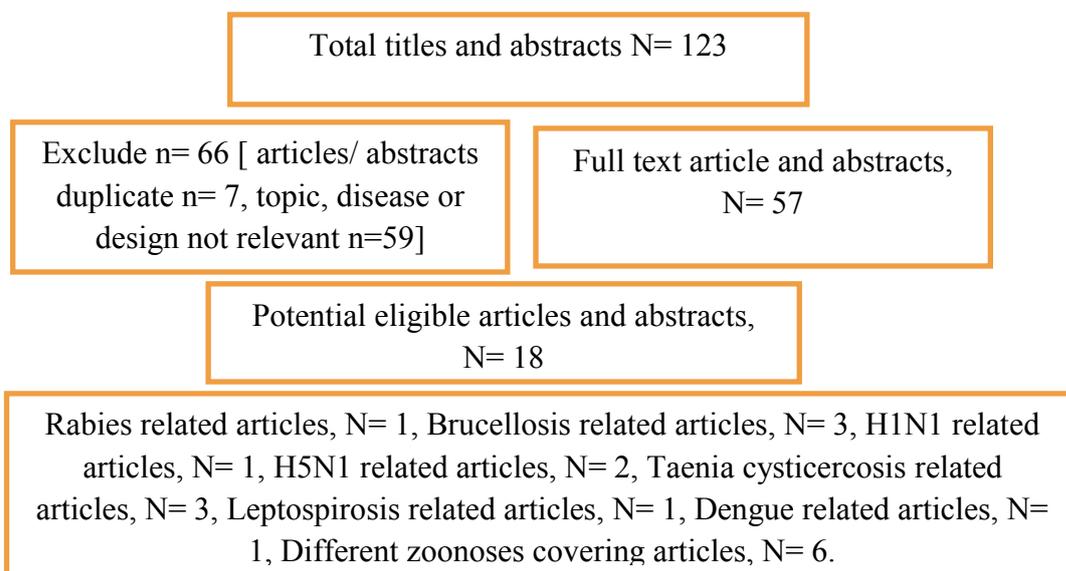


Figure 1. Identification and selection of eligible studies

**Ethical Consideration:** It is just a review article and available relevant literature are obtained from multiple data- bases including Google scholar, PubMed, BioMed, Hinari etc.

**Global situation of zoonotic disease prevalence based on literature review:**

**Rabies:** Rabies is an acute highly fatal viral disease of central nervous system caused by Lyssa virus type I. It is primarily a zoonotic disease of the warm-blooded animal, particularly carnivorous such as dogs, and wolves. Some countries have achieved rabies free status by virus campaigns of elimination. The virus is transmitted through wounded or abraded skin or mucous membrane when the infected animal licks or bites another animal or man.

Globally annual 55,000 people died due to the rabies and 45% global burden in SEAR. However, it is a vaccine preventable disease (WHO, 2018). Human rabies is present in 150 countries and territories, except for Antarctica. The ratio is highest in Asia (India) and this is closely followed by Africa. However, estimates of burden have always been uncertain due to absence of reliable data. Dog is the main source of human rabies deaths, contributing up to 90% of all rabies deaths. Rabies elimination /eradication countries like Australia, Japan, Hongkong, Maldives, UK etc eradicated through the dog licensing, euthanasia of stray dogs and mass vaccination. About 1.5 billion people are at potential risk of rabies infection and 4 million people receive ARV (Pant, 2012). Rabies is endemic in Nepal about 1500 people die every year due to rabies (WHO, 2018). To control the rabies ARV is available in 54 hospital regularly for post exposure prophylaxis (PEP). Government of Nepal expands US\$ 1.5 million/ year to buy ARV (EDCD, 2016).

**Brucellosis:** Brucellosis is the most common bacterial infection caused by a group of bacteria from the genus *brucella* that spreads from animal to human, most often through the unpasteurized milk, cheese and other dairy products. Sometimes, it spreads from direct contact with infected animals and their discharge. In the initial stage brucellosis can be hard to identify because symptoms are much similar like other flu.

According to World Organization for Animal Health, Brucellosis is the second most important zoonotic disease in the world after rabies (Acharya, Niroula, & Kaphle, 2017). Annually about 200 per million individuals die from human brucellosis. In India, approximately 80% people live with in close contact to domestic and wild animals which create critical risk of zoonotic disease transmission such as brucellosis (Kang, Gunaseelan, & Abbas, 2014). Brucellosis has been reported endemic in Nepal. Most of the livestock farmers have no knowledge about human brucellosis which may outbreak anytime and anywhere. In Nepal the first human case was reported in 1979 in Pokhara (Acharya et al., 2017). Similarly, in 2015 brucellosis outbreak in Dhunkarka VDC, Kavre with seven human infection (Rupblica, Sep-7, 2015). Health care practitioners should be aware of possibilities of this zoonotic infection and include brucellosis as a differential diagnosis in patients with nonspecific symptoms and unexplained prolonged fever.

**Swine Flu (H1N1):** Swine flu, caused by H1N1 virus, is a relatively new strain of an influenza virus the symptoms of which are similar to the regular flu. It is newly emerged zoonotic disease which is dangerous for human because our immune system has had no change to prepare the defensive measures which can protect us from normal flu. Some people are more at risk of catching swine flu like, people aged over 65, children below five, people with chronic disease, pregnant women and anyone with compromised immune system (WHO, 2010).

Swine flu pandemic outbreak in 2009 began from Mexico reported with 25,214 cases and 217 cases died, then spread all over the world. At least 74 countries reported approximately 30,000 confirmed laboratory cases. In 2010 February world-wide, more than 213 countries reported laboratory confirmed cases with at least 16,455 deaths. Globally, afflicted at least 394,133 people in Asia with 2,137 confirmed deaths: there were 1,035 deaths confirmed in India, 737 in China, 415 in Turkey, 192 in Thailand, and 170 deaths in South Korea. Among the Asian countries, South Korea had the most confirmed cases, followed by China, Hong Kong, and Thailand and 172 H1N1 case was reported with 2 deaths in Nepal in 2009 (Adhikari et al., 2009). Very recent re-emerging outbreaks in Sep 2018 about 2100 people suffered by Swine flu and Hongkong flu with 4 death in Saptari district in Nepal (Sharma, 2018).

**Avian Influenza (H5N1):** Avian influenza (H5N1) refers to the disease caused by avian (bird) influenza type A viruses. H5N1 virus naturally occurs among wild aquatic birds worldwide and can infect domestic poultry and other birds and animal species. Avian flu does not normally infect humans, but it can happen when virus is in the air and a person breathes it in. Since the avian influenza A (H5N1) virus had re-emerged in 2003 and 2004, after the first report of infection in humans in 1997 during a poultry outbreak in Hong Kong (WHO, 2013).

In SEAR, the total number of human avian influenza A cases reported since the beginning of 2004 till 2013 is 228 with 181 fatalities. In 2013 alone, there were 4 cases, with 4 fatalities, of

human influenza A H5N1 reported to WHO from Bangladesh and Indonesia (WHO, 2013). In Nepal, at 2065 Avian influenza was first time seen in Hetauda. Till now it was seen 106 times in Nepal and 36 times in Kathmandu (Aryal, 2013).

**Taenia Cysticercosis:** Taeniasis is an intestinal infection, adult tapeworms caused by ingestion of infected pork. Cysticercosis is infection with larvae of *T. solium*. Adult worms may cause mild GI discomfort or passage of a motile segment in the stool. It is usually asymptomatic unless larvae enter the brain, resulting in neurocysticercosis, which can cause seizures and various other neurologic signs. Three human *Taenia* species, *T. solium*, *T. saginata*, and *T. asiatica*, are endemic in rural regions of Asia and several patients report from in Asian countries indicate the wide prevalence of *taenia solium* cysticercosis. Cysticercosis is the causes of epilepsy in up to 50% of India patients presenting with partial seizures. It is also major causes of epilepsy in Indonesia, Vietnam and Nepal (Joshi et al., 2018).

**Dengue Fever:** Dengue is also called a break-bone fever. It is a vector born viral disease caused by Dengue Virus (DENV). *Aedes aegypti* mosquitoes are the vector of dengue fever. They are usually found in urban and suburban areas as they like to breed in man-made containers like drains, flowerpots. Before 1970 only 9 countries had experienced severe dengue epidemics, but now more than 100 countries have epidemic. The incidence of dengue has been growing dramatically all over the world in recent decades consequently affecting health of children in some Asian and Latin American countries. The prevalence of dengue estimates that 3.9 billion people in 128 countries are at risk of infection with dengue virus. Africa and SEA are most seriously affected by dengue fever (WHO, 2018). Climate change, poor WASH practices is the most challenging aspect to control zoonosis in Nepal. DoHS state that in F/Y 2072/073 total number of dengue case reported from 12 districts were 302. Initially most cases had travelled to the neighbouring country (India), although lately indigenous cases are also being reported.

## Results

Rabies, brucellosis, swine flu, avian influenza, taenia cysticercosis, dengue fever, are common zoonotic disease with endemic potential in developing countries like Nepal. In this situation if farmers have low knowledge and poor practices, they are more susceptible to zoonoses due to their closeness with livestock. The following is a brief scenario of some zoonotic disease and livestock farmers knowledge and practices based on selective reviewed article:

Title	Purpose of study	Methods	Results / Findings
Rabies Control Strategy in SAARC Member Countries (Pant, 2012).	Rabies control strategy, program, challenges and constraints in SAARC countries.	Strategic review and analysis of hospital data.	-Majority of human rabies case (90%) transmitted from domestic dogs. -1.5 billion people are at potential risk of rabies infection.
Review of Brucellosis in Nepal (Acharya et al., 2017).	Evaluate the current status of human brucellosis in developing country like Nepal.	systematic review	-Incidence of brucellosis has been increasing threats in Asia. -for brucellosis eradication needs funds & collaboration with veterinary, public health & political as well.
Epidemiological Modelling of Bovine Brucellosis in India	-To develop an epidemiological model of brucellosis	Mathematical modelling of infectious	Annually 1- 200 per million individuals died from human brucellosis. In India approximately 80% people live with in

(Kang et al., 2014).	transmission. -To estimate the impact of different prevention and control strategy.	disease dynamics designs and test.	close contact to domestic and wild animal which create critical risk of zoonotic disease transmission such as brucellosis.
KAP relating to brucellosis in small holder dairy farmers. Pakistan (Arif et al., 2017).	To find out KAP towards brucellosis among small holder dairy farmers	Cross sectional survey study	- Overall KAP are not satisfactory. - 74% respondents had not idea about human brucellosis. 97% respondents did not know mode of transmission about brucellosis. 60% consume raw milk. - Half of the family have a close contact with animal and share the same housing.
Outbreak of pandemic influenza A, H1N1 2009 in Nepal (Adhikari et al., 2009).	Find out the actual outbreak's situation and H1N1 severity in Nepal	Laboratory based, cross-sectional study	Out of 609 collected samples, 302 (49.6%) were Universal Influenza A positive. Among the influenza A positive samples, 172(28.3%) were positive for Pandemic influenza A/H1N1 and 130 (21.3%) were Seasonal influenza A. Most of the pandemic cases (53%) were found among young people with ≤ 20 years. Case Fatality Ratio for Pandemic influenza A/H1N1 in Nepal was 1.74%.
KAP related to AI among poultry workers of Bangladesh (Hossan, Eusufzai, Elii, & Jamayef, 2015).	To find out KAP of poultry farmers in Bangladesh.	Cross sectional random survey	- Only 34% respondents said that they were washing hands after poultry care. - 32% used personal protective equipment during the poultry care can prevent Avian influenza. - Most of the respondents informed Rapid Response Team (RRT) for management of sick or dead poultry.
Taeniasis / cysticercosis situation in Nepal (Joshi et al., 2018).	To analyse the prevalence of Taeniasis in Nepal.	Hospital based study	- Post-mortem surveys of pigs at slaughter establishments in Kathmandu and Dharan showed 14% (34/250) of pigs positive for cysticercosis. - A human helminthological survey in Syangja Nepal indicated a very high prevalence of taeniasis, with 43% positive (77/180), while in Tanahun 18% were positive (28/152).
Dengue and Severe Dengue (WHO, 2018).	- WHO documents	-	- Prevalence of dengue estimates that 3.9 billion people in 128 countries are at risk of infection with dengue virus. - Dengue case was increased from 2.2 million in 2010 to 3.2 million in 2015 in member countries of WHO.

Annual report of DoHS 2072/073	-	-	<ul style="list-style-type: none"> <li>- Africa and SEA are most seriously affected by dengue.</li> <li>- Dengue positive case was decline dramatically (785, 302 &amp; 134 in 070/71, 071/72 &amp; 072/073 respectively) but case was distributed in increasing trend (12, 15 &amp; 26) districts. It was high prevalence in terai among the farming community.</li> </ul>
Assessment of pork handlers' knowledge and hygienic status of pig meat shops of Chitwan ... (Ghimire et al., 2013).	To find out knowledge and hygienic practices of pig meat shops	Cross sectional study	<ul style="list-style-type: none"> <li>- 65% (n=40) pork handlers were aware about pork borne disease but none of them had heard about campylobacteriosis.</li> <li>- Only 30% of the pork handlers wore apron regularly. None of them wore gloves and masks and 40% even did not wash hands regularly.</li> <li>- The hygienic practices like sanitation of equipment's and regular washing of hands were significantly associated (<math>p &lt; 0.05</math>) with level of education.</li> </ul>
Evaluation of farmers KAP about zoonotic disease in Turkey (Cakmur et al., 2015). Zoonotic disease, human health, & farm animal welfare (WSPA, 2009).	To determine KAP of Turkey's livestock farmers.  WSPA reports related to zoonoses and human health.	Cross sectional study  -	<ul style="list-style-type: none"> <li>- There were risky practices among farmers compared to middle level knowledge among educated people about zoonotic disease on Turkey.</li> <li>- Industrialization of livestock led to zoonotic risk.</li> <li>- The risk of new strains of influenza that can infect humans is of serious concern, now and in the future.</li> <li>- Farm animal numbers have risen rapidly, and large-scale concentration of poultry and pigs. This increases the risk of new strains of influenza viruses emerging and spreading.</li> </ul>
Awareness, knowledge & risk of zoonotic disease among livestock farmers in Punjab (Hundal et al., 2016).	Investigate risk and assess knowledge and awareness level of zoonotic diseases among livestock farmers.	Purposive study	<ul style="list-style-type: none"> <li>- Respondents not only disposed off the infected placenta 35.6% (n=250) aborted foetus (39.6%), or feces (56.4%) from a diarrheic animal but also gave intrauterine medication (23.2%) bare-hands and 30% were sleeping in animal shed.</li> <li>- About 84.8%, 46.0%, 32.8%, 4.61%, and 92.4% of livestock farmers were aware of zoonotic nature of rabies, brucellosis, tuberculosis, anthrax, and bird flu, respectively.</li> <li>- The transmission of rabies through dog bite (98.4%), need of post-</li> </ul>

Assessment of community KAP on milk borne zoonoses disease in Ethiopia (Delelegn&Girma, 2018).	Assess KAP and determine the effect of demographic character towards milk bornedisease	Cross sectional random sampling.	exposure vaccination (96.8%), and annual vaccination of dogs (78%) were well-known facts but only 47.2% livestock owners were aware of the occurrence of abortion due to brucellosis and availability of prophylactic vaccine (67.6%) against it as a preventive measure. -Most of farmer did not get a training on related field. -64% illiterate population did not know preventive methods of milk borne disease. 57% did not check milk for its quality.
Leptospirosis: An emerging infectious disease in Nepal (Bhattachan et al., 2016).	To determine the prevalence of Leptospira spp in Japanese Encephalitis negative cases.	Hospital based study using ELIZA method	-Among 993 JE negative case, positivity rate of leptospira SPP was reported 41.8% (416/993).
National livestock policy of Nepal: Needs and Opportunities (Pradhanang et al., 2015).		- policy review	National livestock policy mainly focused on economic development, equity, poverty alleviation, gender mainstreaming, inclusion of marginalized and underprivileged communities, and climate vulnerability.
Neglected zoonosis situation in Nepal (Jha, 2015).	Reports	-	- National zoonotic diseases control programme is lacking. - Surveillance plan and laboratory diagnostic capacity for priority zoonotic diseases is not adequate. -There are high chances of disease transmission in weekly livestock market. - Poor linkage with animal health and public health. - One health approach is very weak in Nepal.

## Discussion

Livestock is relatively closer for farmers mainly in developing countries, because they act as a critical source of survival. In Nepal, 66% of the population are engaged in agriculture, but it is evident that 25% people are living under the poverty line (CBS, 2012). This fact reflects that, most of the farmers in Nepal followed the traditional farming with various professional hazards. Some literature which were reviewed in this article reflect that, not only Nepali farmers but farmers in many others developing countries also followed the risky practices in this field, which causes huge economic and human losses.

Ghimire et al. (2013) mention the low knowledge and risky practices related to zoonoses among the pork handlers in Chitwan Nepal. Hossan et al. (2015) showed the poor practices

among poultry farmers in Bangladesh. Delelegn & Girma, (2018) found that, most of farmer did not get a training on related field. Sixty four percent illiterate population did not know preventive methods of milk borne disease, 57% did not check milk for its quality in Ethiopia. Arif et al. (2017) found that overall knowledge attitude and practices (KAP) are not satisfactory among livestock farmers related to brucellosis in Pakistan. About half million of estimated new cases of brucellosis was reported throughout the world with high prevalence in Africa and SEAR. But due to illiteracy and poor knowledge, farmers not only disposed off the infected placenta (35.6%), aborted foetus (39.6%), or feces (56.4%) from a diarrheic animal but also gave intrauterine medication (23.2%) with bare hands in Punjab (Hundal et al., 2016).

Tape worm infestation is common not only in pigs consuming society but is also caused by uncooked (pork) meat and unhygienic vegetables. It is responsible for neuro cysticercosis which is difficult to diagnose. Epilepsy cases in Nepal are increasing up to 7.3/1000 population, and 50 percent of the case are due to neuro cysticercosis (Joshi, Bista, Ito, & Yamasaki, 2007). Low socio-economic status, free range of pig rearing system, food preparation and consuming habits are responsible for worsening the situation.

Due to impact of global warming and climate change, many emerging zoonoses appear in the world which increase the zoonoses burden and public health threats. In the same time industrialization of livestock led to zoonoses risk (WSPA, 2009) specially in new strain of influenza virus. Due to the impact of climate change, *Aedes aegypti* which is the vector of dengue is surviving in hilly and mountainous region which is a burden on public health in developing country like Nepal. In global scenario, dengue case increased from 2.2 million in 2010 to 3.2 million in 2015 in member countries of WHO. However, in Nepal dengue cases were declining but still the disease is prevalent in hilly and mountainous districts, which may also be the impact of climate change and global warming.

Swine flu (H1N1) and Avian influenza (H5N1) are viral zoonotic diseases which seem like normal flu but create severe public health threat as they are highly infectious. They can spread in epidemic and pandemic nature with huge economic and human loss if required measures are not carried out in time. Very simple preventive measures like hand washing and mask wearing practices support to protect flu like these.

Globalization, industrialization and commercialization led to huge number of people having adopted the livestock profession with sound income. But this raises the question whether they are competent with well training and sound knowledge of fundamental requirement for zoonoses protection to livestock farmers. Delelegn & Girma (2018) show that people adopted farming profession without any training and do not have knowledge for zoonoses prevention.

We generally assume that if people have good knowledge, they will use hygienic practices. But surprisingly, receiving the higher education only significantly upgrades their knowledge, but level of attitude and practices did not change based on that knowledge. Majority of the population (80.1%) knew that sick animal's corpse should be buried deep, but the ratio of these practices was identified only 22.5%. (Cakmur et al., 2015). So, based on above evidence there was a huge gap between knowledge and practices among the farmers in Turkey. This

evidence raised the challenges in the field of health education and health promotion all over the world.

Reports shows that, there were single or multiple zoonoses threats associated with the traditional management and unhygienic practices in most of the developing countries. But due to illiteracy and ignorance, people are unaware that livestock may be source of zoonotic disease and some of them are amplifier host in different lethal pathogens and some play a role for transformation as asymptomatic carrier. Our cultural and traditional values, poverty and illiteracy make us closer with livestock without any safety and precaution. Nowadays in the field of zoonoses, 'One Health' concept is taking effect which acts as a collaborative, multisectoral, and transdisciplinary approach working at the local, regional, national, and global levels with the goal of achieving optimal health outcomes recognizing the interconnection between people, animals, plants, and their shared environment.

### **Conclusion**

In conclusion, many developed countries have eliminated and eradicated different fatal zoonoses while, on the other hand, people in developing countries are dying even of vaccine preventable diseases. In the global context, African and South East Asian countries are facing more burden of zoonoses. Based on reviewed literature, livestock farmers had low knowledge and poor practices related to zoonoses in many developing countries including Nepal, which is a threat for zoonoses outbreaks anytime and anywhere. So, we need to make intervention plan without any delay based on One Health concept. Health education in school curriculum, awareness activities, prophylaxis treatment and vaccination programme are some suggestive preventive aspects to control zoonotic disease with the collaboration of all stakeholders under the same umbrella based on one health concept.

### **References**

- Acharya, K. P., Niroula, N., & Kaphle, K. (2017). Review of brucellosis in Nepal. *Epidemiology and Health*. Published online 2017 Apr 24. doi: 10.4178/epih.e2017018.
- Adhikari, B. R., Shakya, G., Upadhyay, B.P., KC, K. P., Shrestha, S. D., & Dhungana, G. R. (2009). Outbreak of Pandemic Influenza A/H1N1 2009 in Nepal. Published online 2011 Mar 23. doi: 10.1186/1743-422X-8-133
- Arif, S., Thomson, P. C., Jover, M. H., McGill, D. M., Warriach, H. M., & Heller, J. (2017). "Knowledge, attitude and practices relating to Brucellosis in small holder dairy farmers in two provinces in Pakistan". Retrieved from <http://doi:10.1371/journal.pone.0173365>. eCollection 2017.
- Anonymous, (2015). Kavre outbreak caused by brucellosis. *Republica Online Paper*, Retrieved from <http://admin.myrepublica.com/society/story/27732/kavre-outbreak-caused-by-brucellosis.html>
- Aryal, R. (2013). Havoc of bird flu in poultry farm industry of Nepal. Retrieved from <https://rameshtalks.wordpress.com/tag/bird-flu-in-nepal/>
- Basnyat. (2013). From animals to human. *Published in Magazine Issue: Vol: 07 No. -I June 14-2013 (Jestha 31, 2070)*.

- Bhattachan, B., Bhattachan, A., Sherchan, JB., Dhoubhadel, BG., & Sherchan JB. (2016). Leptospirosis: An Emerging Infectious Disease in Nepal. *Journal of Institute of Medicine*, Aug-Dec., 2016, 38:2-3 PP 63-68
- Cakmur, H., Akoglu, L., Kahraman, E., & Atasever, M. (2015). Evaluation of Farmers' Knowledge-Attitude-Practice About Zoonotic Diseases in Kars, Turkey. doi: 10.5505/kjms.2015.83436
- CBS (2012). Central Bureau of Statics. National Population and and Housing Census 2011 (National Report). Volume 01.
- Deleegn, M., & Girma Y. (2018). Assessment of community knowledge, attitude and practice on milk borne zoonoses disease in Debre- Birhan town, north Shewa, Ethiopia. *A Journal of Public Health and Epidemiology*. doi:10.5897/JPHE2017.0983
- DoHS (2072/73). Annual reports of Department of Health Services. Kathmandu, Teku: *Minister of Health and Population, Department of Health Services*.
- EDCD (2016). Early Warning and Reporting System (EWARS), Guidelines Government of Nepal. *Epidemiology and Disease Control Division, Kathmandu*.
- FAO (2018). Food and Agriculture Organization of United Nation. The Monetary Impact of Zoonotic Disease on Society Nigeria, Evidence from Four Zoonoses. Retrieved from: <http://www.fao.org/3/i8968en/i8968EN.pdf>
- Ghimire, L., Dhakal, S., Pandeya, Y. R., Chaulagain, S., Mahato, B. R., Satyal, R.C., & Singh, D.K., (2013). Assessment of pork handlers' knowledge and hygienic status of pig meat shops of Chitwan district focusing campylobacteriosis risk factors. A research articles. Retrieved from [doi.org/10.3126/ijim.v2i1.8004](https://doi.org/10.3126/ijim.v2i1.8004)
- Hossan, M.S., Eusufzai, S.Z., Elihi, M.M & Jamayet, N. (2015). knowledge, attitude and practices related to Avian Influenza among poultry workers of Bangladesh. *Bangladesh Journal of Veterinary Medicine*. doi: 10.3329/bjvm.v14i1.28819
- Hundal, J.S., Singh, U., Singh, N., Kansal, S. K., & Bhatti, J. S. (2016). Impact of Training on Knowledge of Goat Farmers in Punjab. *Department of Veterinary and Animal Husbandry Extension Education, College of Veterinary Sciences GADVASU, Ludhiana-141 004, India*.
- Jha, V. C. (2015). Neglected zoonoses situation in Nepal. Retrieved from [http://cdn.aphca.org/dmdocuments/Events/15-16\\_July-15/Presentations/Day1/13-NZD%20Nepal\\_Dr%20Jha.pdf](http://cdn.aphca.org/dmdocuments/Events/15-16_July-15/Presentations/Day1/13-NZD%20Nepal_Dr%20Jha.pdf)
- Joshi, D.D., Maharjan, M., Jshnsen, MV., Willingham, A. L., Gaihr, Y., & Sharma, M. (2018). Taeniasis/cysticercosis situation in Nepal. Retrieved from [https://idocslide.com/the-philosophy-of-money.html?utm\\_source=taeniasis-cysticercosis-situation-in-nepal](https://idocslide.com/the-philosophy-of-money.html?utm_source=taeniasis-cysticercosis-situation-in-nepal)
- Joshi, D. D., Bista, P. R., Ito, A., and Yamasaki, H. (2007). Present Situation of Porcine Taeniasis and Human Cysticercosis in Nepal. Retrieved from <http://www.tm.mahidol.ac.th/seameo/2007-38-suppl-1/38suppl1-144.pdf>
- Kang, G. J., Gunaseelan, L., & Abbas, K. M. (2014). Epidemiological Modeling of Bovine Brucellosis in India. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4537291/>

- Niroula, N. (2016). Risk of Zoonosis. Retrieved from *Kathmandu Post* July 29, 2016.
- Pant, G. R. (2012). Rabies Control Strategy in SAARC Member Countries. Retrieved from <http://www.oie.int/doc/ged/D12940.pdf>
- Pradhanang, U. B., Pradhanang, S. M., Sthapit, A., Krakauer, N.Y., Jha, A., & and TarendraLakhankar, T. (2015). National Livestock Policy of Nepal: Needs and Opportunities. Retrieved from Online journal. Doi: doi:10.3390/agriculture5010103
- Sharma, D. (2018). Difficult for Flu treatment without specialist doctor in Saptari. Published on *Swasthya Khabar Patrica*. Dated: September - 16, 2018.
- Taylor, L. H., Latham, S. M., & Woolhouse, M. E. (2001). Risk factors for human disease emergence. Retrieved from [http://Philos Trans R Soc Lond B Biol Sci. 2001 Jul 29; 356\(1411\): 983-989](http://Philos Trans R Soc Lond B Biol Sci. 2001 Jul 29; 356(1411): 983-989).doi: 10.1098/rstb.2001.0888
- WHO (2010). Emergencies preparedness, response. Retrieved from// [http://www.who.int/csr/disease/swineflu/frequently\\_asked\\_questions/risk/en/](http://www.who.int/csr/disease/swineflu/frequently_asked_questions/risk/en/)
- WHO (2013). Avian Influenza in the South-East Asia Region. Retrieved from [http://www.searo.who.int/entity/emerging\\_diseases/topics/avian\\_influenza/en/](http://www.searo.who.int/entity/emerging_diseases/topics/avian_influenza/en/)
- WHO (2018). Strategic Framework for Elimination of Human Rabies Transmitted by Dogs in Southeast Asian Region. Retrieved from <https://apps.who.int/iris/handle/10665/205920>
- WHO (2018). Dengue and Severe Dengue. Retrieved from <http://www.who.int/news-room/fact-sheets/detail/dengue-and-severe-dengue>
- WSPA (2009). Zoonotic Diseases, Human Health and Farm Animal Welfare. Retrieved from <https://www.ciwf.org.uk/media/3756123/Zoonotic-diseases-human-health-and-farm-animal-welfare-16-page-report.pdf>

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Health Education Association of Nepal (HEAN) is a non-profit making professional organization of Nepal. It was established in 1991 AD. It has more than one hundred active members comprising distinguished members, life members and general members so far.

Improvement of Health status of the people through health education and policy advocacy for creating supportive environment is the motto of the Association. It aims at promoting health of the people by empowering them in informed decision-making. It also intends to facilitate in the professional development of health educators all over the country.

HEAN is bound to organize and conduct different programmes on health promotion and health education such as school health programme, comprehensive sexuality education, environment and community health, mental health, communicable and non-communicable diseases, nutrition and consumer health and many other health issues and concerns.

Any citizen having Bachelor Degree of education in health or any other health and behavior sciences willing to contribute in the improvement of health education profession may be the member of the association.