

Population Based Cancer Incidence In 15 Districts of three Geographical Region, Mountain, Hills and Tarai for 2013-2014 In Nepal

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ABSTRACT

Now more and more cancers are being diagnosed in Nepal. But it is hard to assess the burden of cancer in national context based on available data. The available hospital based information neither shows the magnitude of the problem nor there has been any community-based study in the past. First time in Nepal population based Cancer registry (PBCR) was started in 15 districts of different geographical region i.e. Himal, Pahad, Tarai, which covered the 25.8% of total population of the nation. Therefore, outcome of this study can be used to infer an overall situation of cancer in Nepal.

In the year 2013-14, cancer cases were reported from data source institutions for the process of population based cancer registration. Among them the cases were verified by name, age, sex and disease i.e. topography/morphology. Cases were collected

from projected areas and multiple entry were excluded from data base and total 5089 (2469+2620) cases were analyzed for the purpose. The mean age at diagnosis in 2013 was 53.9 years and 53.2 years in 2014, whereas; mean age in average for 2013-14 was 53.6 years.

In the year 2013, the most frequent form of cancer for both sexes was bronchus & lung 15.7%, followed by cervix uteri 11.0%, and breast 7.6%. Among the female cases cervix uteri cancer 20.0% was the most frequent, followed by breast 13.5% and bronchus & lung cancer 12.9%. Similarly, bronchus & lung cancer 15.8% was the most common cancer among males, followed by stomach 6.1% and larynx cancer 4.3%. The most prevalent age group in male 70-74 years 19.9%, while in female it was in same age group 70-74 years 13.4%.

In the year 2014, the leading sites of cancer for both sexes was bronchus & lung 13.7%, followed by cervix uteri 10.5%, and breast 9.5%. Among the female cases cervix uteri cancer 18.0% was the most frequent, followed by breast 15.5% and bronchus & lung cancer 11.8%. Similarly, bronchus & lung cancer 16.5% was the most common cancer among males, followed by stomach 7.4% and larynx cancer 5.3%. The most prevalent age group in male 70-74 years 11.3%, while in female it was in same age group 60-64 years 12.3%. The present data provide population based cancer burden in Nepal. According to findings, cancer of bronchus& lung was the most common topography of cancer followed by cervix uteri and breast for both sex in 2013-14.

Keywords : Cancer registration, Hospital based, Incidence, Population based , Topography

I. INTRODUCTION

Hospital based cancer registry has been started in Nepal since 2003 by B.P. Koirala Memorial cancer Hospital (BPKMCH). However, population based

cancer registry (PBCR) was not started until 2013. To address the need of population based cancer registry, Cancer Prevention Control and Research Department of BPKMCH initiated the population based cancer registry in 2013. Population based cancer registry is

the process of recording new cancer patients from defined population. The information from cancer registry provides a data source for planning and evaluation of cancer control activities and epidemiological studies. The PBCR provides incidence rates, characteristics of the population concerned and clues to etiology and prevention.

Cancer is a emerging public health problem in developing countries. The magnitude of the problem of cancer in terms of its large number, warrant s particular attention of policy makers to evolve national programs of the action to develop, implement, coordinate and also to evaluate the cancer control activities in individual countries (Gupta et al., 1993).

According to GLOBOCAN 2012, an estimated 14.1 million new cancer cases and 8.2 million cancer related deaths occurred. Compared with 12.7 million and 7.6 million, respectively in 2008 (Ferlay et al., 2012)The importance of cancer registry data for development of national cancer control programs has already been stressed in the context of South Asia (Bhurgri, 2004).



Figure 1. Three Geographical area of 15 district, Mountain, Hills and Tarai

Table 1. Area and population covered by this study

District's Name	Male	Female	Total
Chitwan	298400	297681	658114
Makwanpue	243921	238877	528160
Bara	361920	347026	708947
parsa	322851	305630	628481
Nawalparasi	350017	352031	702048
Rupandehi	456337	445481	901818
Kapilvastu	306323	295986	602309
Dhading	204735	207581	412317
Gorkha	165830	175941	341771
Myagdi	65686	69928	135613
Tanahun	183533	195926	378559
Baglung	154590	166206	320796
Parbat	89095	95287	320796
Kaski	235364	240541	475905
Mustang	9017	8146	17163
	3447619	3442268	6889887

Total population of Nepal: 2,66,208,09 (2068)

Total Population of study area : 68,89,887

Coverage25.88% of total population

II. MATERIALS AND METHODS

This is retrospective analysis, the information of all new cancer cases of all age group were collected and recorded between 1st January to 31st December 2013-14 . The mortality data due to cancer was also collected from office of the vital events registration unit of each DDC/VDCs/ Municipalities of relevant districts. Collected data were coded according to ICD O 3dr and ICD-10 published by IARC/WHO and proceed for data analysis using SPSS 19.0.

Data Sources

- District Hospital, Medical college and other hospitals.
- District Health and Public Health Office and other relevant organizations.
- DDC /VDC/Municipality, i.e. office of vital event registration.
- Privet hospitals, Diagnostic lab, hospice etc.

Table 2. Data for Most Prevalent Cancers in 15 District for Both sex- 2013

ICD-10	Topography	#	%
C34	Bronchus and lung	390	15.7
C53	Cervix uteri	272	11.0
C50	Breast	188	7.6
C16	Stomach	138	5.5
C56	Ovary	106	4.2
C32	Larynx	94	3.8
C67	Bladder	93	3.7
C71	Brain	70	2.8
C22	Liver	64	2.5
C23	Gall bladder	62	2.4
-	Other cancer	992	40.1
Total		2469	100.0

Table 3. Data for Most Prevalent Cancers in 15 District for Male - 2013

ICD-10	Topography	#	%
C34	Bronchus and lung	215	19.3
C16	Stomach	83	7.4
C32	Larynx	59	5.3
C67	bladder	58	5.2
C22	Liver	36	3.2
C15	Esophagus	34	3.1
C49	Connective subcutaneous & other soft tissues	34	3.1
C71	Brain	33	3.0
-	Unspecified	29	2.7
C23	Rectum	27	2.4
-	Other cancer	505	45.3

Total 1113 100.0

Table 4. Data for Most Prevalent Cancers in 15 district for Female -1013

ICD-10	Topography	#	%
C53	Cervix uteri	272	20.1
C50	Breast	184	13.6
C34	Bronchus and lung	175	12.9
C56	Ovary	105	7.7
C71	Brain	37	2.7
C23	Gall bladder	37	2.7
C32	Larynx	35	2.5
C67	Bladder	35	2.5
C20	Rectum	28	2.0
C15	Esophagus	26	1.9
-	Other cancer	422	31.4
Total		1356	100.0

Table 5. Data for Most Prevalent Cancers in 15 district for Both sex -2014

ICD-10	Topography	#	%
C34	Bronchus and lung	361	13.7
C53	Cervix uteri	277	10.5
C50	Breast	249	9.6
C16	Stomach	144	5.4
C56	Ovary	123	4.6
C23	Gall bladder	110	4.2
C20	Rectum	86	3.3
C32	Larynx	85	3.2
C67	Bladder	76	2.9
C71	Brain	73	2.7
-	Other cancers	1036	39.5
Total		2620	100.0

Table 6. Collected Data for Most Prevalent Cancers in 15 district for Male -1014

ICD-10	Topography	#	%
C34	Bronchus and lung	180	16.7

C16	Stomach	81	7.4
C32	Larynx	58	5.4
C67	Bladder	55	5.0
C71	Brain	39	3.5
C20	Rectum	39	3.5
C22	Liver	38	3.4
C61	Prostate gland	37	3.4
-	Unspecified	35	3.2
	Colon		
C18	Colon	34	3.1
-	Other cancer	492	45.4
Total		1088	100.0

Table 7. Data for Most Prevalent Cancers in 15 district for Female -1014

ICD-10	Topography	#	%
C53	Cervix uteri	277	18.2
C50	Breast	238	15.6
C34	Bronchus and lung	181	11.8
C56	Ovary	123	8.0
C23	Gall bladder	80	5.2
C20	Stomach	63	4.1
C71	Rectum	47	3.0
C32	Thyroid	37	2.4
C22	Brain	34	2.2
C27	Larynx	27	1.7
-	Other cancers	425	27.8
Total		1532	100.0

III. Results

During the study period net 5089 cases were recorded as summarized in Tab 2-7. Female cases 54.9% were more common than in male 45.1%. for 2013. Similarly, in the year of 2014, female 58.5% were more than male 41.5%. The number of cases by site (ICD-10) and percentage of various cancer cases for males and females are given in Table.

In addition, data for the age distribution of the most common cancers are given in figure 1 and 2 for males and females, separately.

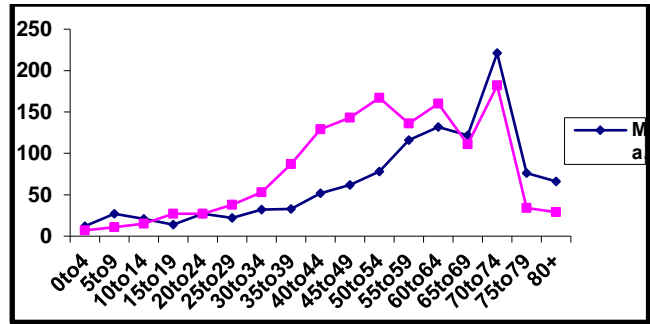


Figure 1. age distribution of cancer cases for both sex - 2013

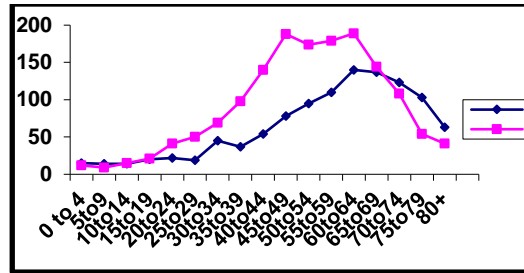


Figure 2. Age Distribution of Cancer cases for both sex - 2014

IV. Discussion

This study was undertaken at BP Koirala memorial cancer hospital, Bharatpur, Chitwan, Nepal, which is only national cancer institute of the nation, using secondary data of national cancer registry programme and data sources institution of study areas.

In this study, bronchus & lung cancer generally predominating in males, presumably because of smoking habits, and latter in females (Curado et al., 2007., Moor at al., 2010., Forman et al., 2012). A survey in rural communities of Nepal by Pandey et al. (1988) showed that in the 20+ years age group 85.4% of men and 62.4% of women were tobacco users. The prevalence of smoke less tobacco use, as well as smoking, is high, particularly among males and disadvantaged groups (Sinha at al., 2012). More recently, it was documented that older women are also very likely to smoke, especially those with a lower socioeconomic status (Pandey and Lin, 2013). Awareness of lung cancer by tobacco use and other risk factors varied with socioeconomic status amongst residents of Pokhara, Despite their awareness of smoking as a risk factor for lung cancer, most of them

still continue to smoke (Chawla et al., 2010). Furthermore, even medical student perceptions about the cause of lung cancer may be influenced by their smoking behavior and there was little knowledge of public health measures for smoking control (Khatiwada et al., 2012).

In this study cancer of cervix uteri was the second leading cancer site for both sex and top cancer topography for female. Among females cancer of cervix uteri is a common cancer site for developing countries but in developed countries breast cancer ranked as a leading cancer. (Curado et al., 2007; Moore et al., 2010; Forman et al., 2012). There is an urgent need for a reinvigorated and tailored approach to cervix cancer prevention among the educated youth in India, Nepal and Srilanka (Joy et al., 2011). From this data we have found a significant increase in cancer of cervix uteri in the future, suggesting the need for more focus and resource allocation on cervical cancer screening and treatment (Sathin et al., 2013). Self-collected sampling methods should be the subject of additional research in Nepal for screening HR-HPV, associated with pre-cancer lesions and cancer, in women rural communities with limited access to health services (Johnson et al., 2014). In the context of limited screening services in Nepal, the efforts should be to reduce the diagnostic delay especially patient and health care provider delay for early detection and reduction of mortality rate of cervical cancer (Gyenwali et al., 2014). Risk factors for cancer of cervix uteri like early age at marriage, and early age at first birth, multiparity, poor genital hygiene and infection with HPV virus infection are common in Nepal. Health education programs which are effective not only in increasing knowledge about cervical cancer and pap smear test but also effective in positively changing attitude towards the test should be organized to increase pap smear coverage (Ranabhat et al., 2014).

Breast cancer was the third most common cancer for

both sex and second leading cancer site in female for 2015. Cancer of breast proved to have overtaken cervical cancer in terms of incidence, as in the majority of countries of Asia (Curado et al., 2007; Moore et al., 2010; Forman et al., 2012). The fact that young Nepalese women account for over one quarter of all female breast cancers, many being diagnosed at an advanced stage (Sharma et al., 2005; Thapa et al., 2013) is of particular importance. The level of awareness of breast cancer, including knowledge of warning signs and BSE (breast self examination), is sub-optimal among Nepalese women (Sathian et al., 2014). Low knowledge on breast cancer, risk factors and screening practice among female groups (Shrestha, 2012). Community interventions have been a focus in Bangladesh (Ansink et al., 2008) and Kolkata (Basu et al., 2006) and deserve emphasis in the Nepali context. In both breast and cervical cancer cases compliance with both screening guidelines and subsequent referral and treatment are necessary (Dinshaw et al., 2007a; 2007b). It should be noted that BSE has been validated in the Nepalese setting (Tara et al., 2008).

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