



CANCER INCIDENCE BY DISTRICT FOR 2019 - DATA FROM NATIONAL CANCER CENTER (BPKMCH) OF NEPAL

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Abstract

Cancer is an emerging public health problem in Nepal. The cancer data can be use for effective planning and police formation to control and prevent the disease. This study aims to determine the distribution of cancer incidence in different districts of the nation. This was a descriptive study with primary and secondary data collection in 1st January to 31th December 2019. In the year of 2019, net 4894 new cancers were diagnosed in this Centre. Whereas, 4700 were Nepalese cases. Among the Nepalese cases, Most of the cases were from Chitwan followed by Nawalparasi and Rupendehi. According to available data, 2111 (44.91%) male and 2589 (55.09%) were female. The most frequent form of cancer for both sexes was C34 bronchus & lung 622 (13.23%), followed by C53 cervix uteri 544 (11.57%), and C50 breast 493 (10.48%). The incidence of cancer was seen to be increasing day by day. Well organized awareness activities, HPV vaccination and screening programme was recommended to control and prevent the cancer burden in Nepal.

Keywords: Cancer, District, Hospital, Incidence.

INTRODUCTION

Cancer is the second leading cause of death globally, accounting for an estimated 9.6 million deaths, or one in six deaths, in 2018. Lung, prostate, colorectal, stomach and liver cancer are the most common types of cancer in men, while breast, colorectal, lung, cervical and thyroid cancer are the most common among women (GLOBO CAN 2018). Globally, about 1 in 6 deaths is due to cancer. Approximately 70% of deaths from cancer occur in low- and middle-income countries. Asia accounts for 60% of the world population and half the global burden of cancer. The incidence of cancer cases is estimated to increase from 6.1 million in 2008 to 10.6 million in 2030. According to WHO, India has a cancer mortality rate of 79 per 100,000 deaths and accounts for over 6 percent of total deaths. These numbers are very close to those of high-income countries. In Nepal, total 10117 new cancer cases were reported by hospital based National Cancer Registry Programme of Nepal. The cancer burden continues to grow globally, exerting tremendous physical, emotional and financial strain on individuals, families, communities and health systems. Many health systems in low- and middle-income countries are least prepared to manage this burden, and large numbers of cancer patients globally do not have access to timely quality diagnosis and treatment. Various studies showed that cancer disease is increasing day by day and there are different yearly reports about the prevalence of cancer disease. Therefore, the aim of this study is to determine current status of cancer incidence by district.

MATERIALS AND METHODS

This was a descriptive study with primary and secondary data of new cancer that are recorded and collected in 2019 from different department and unit of B.P.Koirala Memorial Cancer Hospital (BPKMCH), Bharatpur Chitwan, Nepal. The data were entry, edit, and coded based on ICD-O3rd and ICD -10, published by IARC/WHO. Whereas, analysis was carried out by using SPSS 19.0.

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RESULTS

Table 1. Distribution of cancer cases by sex

Nationality	Male	Female	Total	Percent
Nepali	2111	2589	4700	96.04
Indian	108	86	194	3.96
Total	2219	2675	4894	100.00

Table 2. Distribution of cancer cases by sex

Sex	Number	Percent
Male	2111	44.91
Female	2589	55.09
Total	4700	

Table 3. Distribution of cases by broad age group and sex

Broad-age group	Sex				Total	
	Male		Female		#	%
	#	%	#	%	#	%
0-14 yrs	88	4.17	73	2.82	161	3.42
15-34 yrs	226	10.72	253	9.77	479	10.19
35-64 yrs	1055	49.97	1695	65.47	2750	58.52
65+ yrs	742	35.14	568	21.94	1310	27.87
Total	2111	100.00	2589	100.00	4700	100.00

Table 4. Distribution of cancer cases by age group and sex

Age group	Sex				Total	
	Male		Female		#	%
	#	%	#	%	#	%
0-4 yrs	25	1.18	35	1.35	60	1.27
5-9 yrs	31	1.46	7	0.27	38	0.80
10-14 yrs	32	1.51	31	1.19	63	1.34
15-19 yrs	54	2.55	35	1.35	89	1.89
20-24 yrs	50	2.36	52	2.00	102	2.17
25-29 yrs	49	2.32	77	2.97	126	2.68
30-34 yrs	73	3.45	89	3.43	162	3.44
35-39 yrs	100	4.73	165	6.37	265	5.63
40-44 yrs	106	5.02	236	9.11	342	7.27
45-49 yrs	147	6.96	344	13.28	491	10.44
50-54 yrs	179	8.47	336	12.97	515	10.95
55-59 yrs	240	11.36	296	11.43	536	11.40
60-64 yrs	283	13.40	318	12.28	601	12.78
65-69 yrs	267	12.64	248	9.57	515	10.95
70-74 yrs	237	11.22	204	7.87	441	9.38
75-79 yrs	158	7.48	76	2.93	234	4.97
80 + yrs	80	3.78	40	1.58	120	2.55
Total	2111	100.0	2589	100.0	4700	100.0

Table 5. Distribution of cases by districts and sex

S.N.	Districts	Sex		Female		Total	
		Male	%	#	%	#	%
1	Achham	11	0.52	7	0.27	18	0.38
2	Arghakachi	36	1.70	25	0.96	61	1.29
3	Baglung	23	1.08	55	2.12	78	1.65
4	Baitadi	13	0.61	9	3.34	22	0.46
5	Bajhang	9	0.42	6	0.23	15	0.31
6	Bajura	3	0.14	5	1.19	8	0.17
7	Banke	36	1.70	54	2.08	90	1.91
8	Bara	72	0.37	88	3.39	160	3.40
9	Bardia	31	1.46	55	2.12	86	1.82
10	Bhaktapur	2	0.09	0	0.07	2	0.04
11	Bhojpur	10	0.47	20	0.77	30	0.63
12	Chitwan	142	6.72	183	7.06	325	6.91
13	Dadeldhura	5	0.23	7	0.27	12	0.25
14	Dailekh	14	0.66	15	0.57	29	0.61
15	Dang	51	2.41	72	2.78	123	2.61
16	Darchula	1	0.04	11	0.42	12	0.25
17	Dhading	14	0.66	22	0.84	36	0.76
18	Dhankuta	9	0.42	7	0.27	16	0.34
19	Dhanusha	70	3.31	78	3.01	148	3.14
20	Dolkha	1	0.04	0	0	1	0.02
21	Dolpa	1	0.04	3	0.11	4	0.08
22	Doti	6	0.28	6	0.23	12	0.25
23	Gorkha	49	2.32	35	1.35	84	0.74
24	Gulmi	44	2.08	54	2.08	98	1.14
25	Humla	2	0.09	2	0.07	4	0.04
26	Ilam	19	0.90	26	1.00	45	0.95
27	Jajarkot	9	0.42	6	0.23	15	0.31
28	Jhapa	73	3.45	100	3.86	173	3.68
29	Jumla	7	0.33	7	0.27	14	0.29
30	Kailali	70	3.31	63	2.70	133	2.82
31	Kalikot	9	0.42	10	0.38	19	0.40
32	Kanchanpur	32	1.51	43	1.66	75	1.59
33	Kapilvastu	42	1.98	73	2.81	115	2.44
34	Kaski	54	2.55	72	2.78	126	2.68
35	Kathmandu	9	0.42	5	0.19	14	0.29
36	Lamjung	17	0.80	29	1.12	46	0.97
37	Mahottari	58	2.74	62	2.39	120	2.55
38	Makwanpur	62	2.93	59	2.27	121	2.57
39	Morang	76	3.60	115	4.44	191	4.06
40	Mugu	1	0.04	1	0.03	2	0.04
45	Mustang	0	0.09	1	0.03	1	0.02
46	Myagdi	13	0.61	18	0.69	31	0.65
47	Nawalparasi	101	4.78	148	5.71	249	5.29
48	Nuwakot	3	0.14	0	0	3	0.06
49	Okhaldhunga	1	0.04	3	0.11	4	0.08
50	Palpa	30	4.78	58	2.24	88	1.87
51	Panchthar	17	0.80	13	0.50	30	0.63
52	Parbat	22	1.04	23	0.88	45	0.95
53	Parsa	56	2.65	93	3.59	149	3.17
54	Pyuthan	17	0.80	26	1.00	43	0.91
55	Ramechhap	1	0.04	0	0	1	0.02
57	Rautahat	56	2.65	60	2.31	116	2.46
58	Rolpa	16	0.75	21	0.81	37	0.87
59	Rukum	15	0.71	12	0.46	27	0.57
60	Rupendehi	108	5.11	136	5.25	244	5.19
61	Salyan	10	0.47	17	0.65	27	0.57
62	Sankhuwasabha	13	0.61	7	0.27	20	0.42
63	Saptari	67	3.17	61	2.35	128	2.72
64	Sarlahi	64	3.03	59	2.27	123	2.61
65	Sindhuli	7	0.33	12	0.46	19	0.40
66	Sindhupalchowk	2	0.09	1	0.03	3	0.06
67	Siraha	57	2.70	73	2.81	130	2.76
68	Solukhumbu	1	0.04	2	0.07	3	0.06
69	Sunsari	66	3.12	70	2.70	136	2.89
70	Surkhet	36	1.70	36	1.39	72	1.53
71	Syanjha	55	2.60	62	2.39	117	2.48
72	Tanahun	45	2.13	59	2.27	104	2.21
73	Taplejung	7	0.33	8	0.30	15	0.31
74	Tehrathum	9	0.42	3	0.11	12	2.25
75	Udayapur	23	1.08	17	0.65	40	0.85
	Total	2111	100.0	2589	100.0	4700	100.0

Table 6. Distribution of cancer cases by district for both sex in descending order

S.N.	Districts	Cases	Percent
1	Chitwan	325	6.91
2	Nawalparasi	249	5.29
3	Rupendehi	244	5.19
4	Morang	191	4.06
5	Jhapa	173	3.68
6	Bara	160	3.40
7	Parsa	149	3.17
8	Dhanusha	148	3.14
9	Sunsari	136	2.89
10	Kailali	133	2.82
11	Siraha	130	2.76
12	Saptari	128	2.72
13	Kaski	126	2.68
14	Dang	123	2.61
15	Sarlahi	123	2.61
16	Makwanpur	121	2.57
17	Mahottari	120	2.55
18	Syanjha	117	2.48
19	Rautahat	116	2.46
20	Kapilvastu	115	2.44
21	Tanahun	104	2.21
22	Gulmi	98	1.14
23	Banke	90	1.91
24	Palpa	88	1.87
25	Bardia	86	1.82
26	Gorkha	84	0.74
27	Baglung	78	1.65
28	Kanchanpur	75	1.59
29	Surkhet	72	1.53
30	Arghakachi	61	1.29
31	Lamjung	46	0.97
32	Ilam	45	0.95
33	Parbat	45	0.95
34	Pyuthan	43	0.91
35	Udayapur	40	0.85
36	Rolpa	37	0.87
37	Dhading	36	0.76
38	Myagdi	31	0.65
39	Bhojpur	30	0.63
40	Panchthar	30	0.63
41	Dailekh	29	0.61
42	Rukum	27	0.57
43	Salyan	27	0.57
44	Baitadi	22	0.46
45	Sankhuwasabha	20	0.42
46	Kalikot	19	0.40
47	Sindhuli	19	0.40
48	Achham	18	0.38
49	Dhankuta	16	0.34
50	Bajhang	15	0.31
51	Jajarkot	15	0.31
52	Taplejung	15	0.31
53	Jumla	14	0.29
54	Kathmandu	14	0.29
55	Dadeldhura	12	0.25
56	Darchula	12	0.25
57	Doti	12	0.25
58	Tehrathum	12	2.25
59	Bajura	8	0.17
60	Dolpa	4	0.08
61	Humla	4	0.04
62	Okhaldhunga	4	0.08
63	Nuwakot	3	0.06
64	Sindhupalchowk	3	0.06
65	Solukhumbu	3	0.06
66	Bhaktapur	2	0.04
67	Mugu	2	0.04
68	Dolkha	1	0.02
69	Mustang	1	0.02
70	Ramechhap	1	0.02
	Taal	4700	100.00

Table 7. Distribution of cases by district for male in descending order

S.N.	Districts	Cases	Percent
1	Chitwan	142	6.72
2	Rupendehi	108	5.11
3	Nawalparasi	101	4.78
4	Morang	76	3.60
5	Jhapa	73	3.45
6	Bara	72	0.37
7	Dhanusha	70	3.31
8	Kailali	70	3.31
9	Saptari	67	3.17
10	Sunsari	66	3.12
11	Sarlahi	64	3.03
12	Makwanpur	62	2.93
13	Mahottari	58	2.74
14	Siraha	57	2.70
15	Parsa	56	2.65
16	Rautahat	56	2.65
17	Syanjha	55	2.60
18	Kaski	54	2.55
19	Dang	51	2.41
20	Gorkha	49	2.32
21	Tanahun	45	2.13
22	Gulmi	44	2.08
23	Kapilvastu	42	1.98
24	Banke	36	1.70
25	Surkhet	36	1.70
26	Arghakachi	36	1.70
27	Kanchanpur	32	1.51
28	Bardia	31	1.46
29	Palpa	30	4.78
30	Baglung	23	1.08
31	Udayapur	23	1.08
32	Parbat	22	1.04
33	Ilam	19	0.90
34	Lamjung	17	0.80
35	Pyuthan	17	0.80
36	Panchthar	17	0.80
37	Rolpa	16	0.75
38	Rukum	15	0.71
39	Dhading	14	0.66
40	Dailekh	14	0.66
41	Myagdi	13	0.61
42	Baitadi	13	0.61
43	Sankhuwasabha	13	0.61
44	Achham	11	0.52
45	Bhojpur	10	0.47
46	Salyan	10	0.47
47	Kalikot	9	0.42
48	Dhankuta	9	0.42
49	Bajhang	9	0.42
50	Jajarkot	9	0.42
51	Kathmandu	9	0.42
52	Tehrathum	9	0.42
53	Sindhuli	7	0.33
54	Taplejung	7	0.33
55	Jumla	7	0.33
56	Doti	6	0.28
57	Dadeldhura	5	0.23
58	Bajura	3	0.14
59	Nuwakot	3	0.14
60	Humla	2	0.09
61	Sindhupalchowk	2	0.09
62	Bhaktapur	2	0.09
63	Darchula	1	0.04
64	Dolpa	1	0.04
65	Okhaldhunga	1	0.04
66	Solukhumbu	1	0.04
67	Mugu	1	0.04
68	Dolkha	1	0.04
69	Ramechhap	1	0.04
70	Mustang	0	0.09
Total		2111	100.00

Table 8. Distribution of cases by district for female in descending order

S.N.	Districts	Cases	Percent
1	Chitwan	183	7.06
2	Nawalparasi	148	5.71
3	Rupendehi	136	5.25
4	Dolpa	123	0.11
5	Morang	115	4.44
6	Jhapa	100	3.86
7	Parsa	93	3.59
8	Bara	88	3.39
9	Dhanusha	78	3.01
10	Siraha	73	2.81
11	Kapilvastu	73	2.81
12	Kaski	72	2.78
13	Dang	72	2.78
14	Sunsari	70	2.70
15	Kailali	63	2.70
16	Mahottari	62	2.39
17	Syanjha	62	2.39
18	Saptari	61	2.35
19	Rautahat	60	2.31
20	Sarlahi	59	2.27
21	Makwanpur	59	2.27
22	Tanahun	59	2.27
23	Palpa	58	2.24
24	Bardia	55	2.12
25	Baglung	55	2.12
26	Gulmi	54	2.08
27	Banke	54	2.08
28	Kanchanpur	43	1.66
29	Surkhet	36	1.39
30	Gorkha	35	1.35
31	Lamjung	29	1.12
32	Ilam	26	1.00
33	Pyuthan	26	1.00
34	Arghakachi	25	0.96
35	Parbat	23	0.88
36	Dhading	22	0.84
37	Rolpa	21	0.81
38	Bhojpur	20	0.77
39	Myagdi	18	0.69
40	Udayapur	17	0.65
41	Salyan	17	0.65
42	Dailekh	15	0.57
43	Panchthar	13	0.50
44	Doti	6	0.23
45	Rukum	12	0.46
46	Sindhuli	12	0.46
47	Darchula	11	0.42
48	Kalikot	10	0.38
49	Baitadi	9	3.34
50	Taplejung	8	0.30
51	Sankhuwasabha	7	0.27
52	Achham	7	0.27
53	Dhankuta	7	0.27
54	Jumla	7	0.27
55	Dadeldhura	7	0.27
56	Bajhang	6	0.23
57	Jajarkot	6	0.23
58	Kathmandu	5	0.19
59	Bajura	5	1.19
60	Tehrathum	3	0.11
61	Okhaldhunga	3	0.11
62	Humla	2	0.07
63	Solukhumbu	2	0.07
64	Sindhupalchowk	1	0.03
65	Mugu	1	0.03
66	Mustang	1	0.03
68	Bhaktapur	0	0.07
Total		2589	100.00

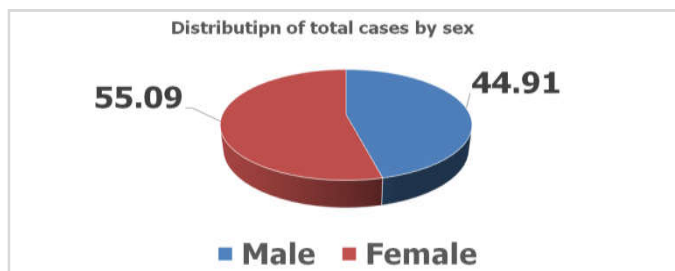


Figure 1. Distribution of total cases by sex

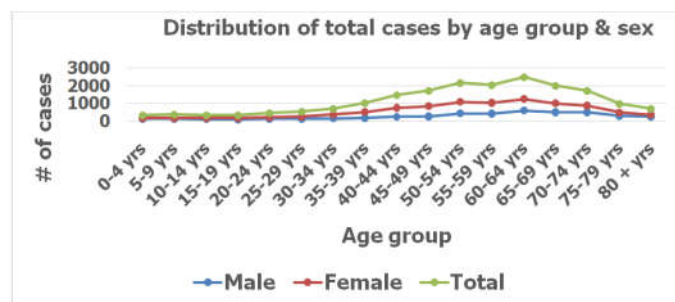


Table 9. Distribution of cases by site for both sex

S.N.	ICD-10	Topography	Number	Percent
1	C 34	Bronchus and lung	622	13.23
2	C 53	Cervix uteri	544	11.57
3	C 50	Breast	493	10.48
4	C 16	Stomach	206	4.38
5	C 02	Other and unspecified parts of tongue	173	3.68
6	C 23	Gall bladder	173	3.68
7	C 06	Other and unspecified parts of mouth	153	3.25
8	C 56	Ovary	153	3.25
9	C 67	Bladder	152	3.23
10	C 32	Larynx	113	2.40
11	**	Other cancer	1918	40.85
Total			4700	100.00

Discussion

This study was undertaken at BP Koirala Memorial Cancer Hospital, Bharatpur, Chitwan, Nepal, which is only national cancer institute of the nation. In this study, collected data were checked, edited, coded and entered in the computer using proprietary software made by BPKMCH. In order to avoid the multiple entry of the cancer cases were verified by name, age, sex, address and topography of cancer cases. All multiple entries were deleted and Non-Nepalese cases were excluded from the database. Then the data were coded according to ICD-03 and ICD-10 published by IARC/WHO. At last net 4700 cases were preceded for analysis using SPSS 19.0. According to the available data, cancer cases were higher in Chitwan district 325(6.91) followed by Nawalparasi 249 (5.29) and Rupandehi 244 (5.19) for both sex. Among the female cases Chitwan 183 (5.29) followed by Nawalparasi 148 (5.71) and Rupandehi 136 (5.25). Similarly, Chitwan 142 (6.72) followed by Nawalparasi 108 (5.11) and Rupandehi 101 (4.78).

Conclusion

Most of the cancer cases were diagnosed in Chitwan because BPKMCH is located in the district itself and followed by Nawalparasi and Rupandehi district due to the access of nearby hospital.

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