

CANCER INCIDENCE BY DISTRICT FOR 2020 - DATA FROM NATIONAL COMPREHENSIVE CANCER CENTER OF NEPAL

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Abstract

Cancer is the malignant growth resulting from an uncontrolled cell division one of the major public health problems in the world. This study aims to determine district wise distribution of cancer incidence in national comprehensive cancer centre (B.P.Koirala Memorial Cancer Hospital) of Nepal for 2020. This was a descriptive study with primary and secondary data collection in 1st January to 31st December 2020. Out of 24093 new patients 4608 were diagnosed with cancer. The cancers were common in age group of 60-64 years. Most of the patients were from Chitwan followed by Rupendehi and Nawalparasi. The most frequent form of cancer for both sexes was bronchus & lung followed by cervix uteri and breast. 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, Incidence, District, National.

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 10516 new cancer cases were reported by hospital based national cancer registry 2017. 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 in national comprehensive cancer centre (B.P.Koirala Memorial Cancer Hospital) of Nepal for 2020.

MATERIALS AND METHODS

This was a descriptive study with primary and secondary data of new cancer that are recorded and collected in 2020 from different department and unit of national comprehensive cancer centre (B.P. Koirala Memorial Cancer Hospital) of Nepal.

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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.

RESULTS

Table 1. Cancer cases by sex

Sex	Number	Percent
Male	2091	45.37
Female	2517	54.63
Total	4608	100

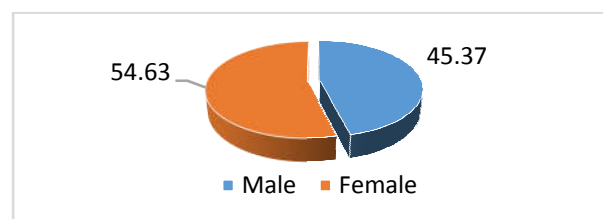


Fig. 1. Cancer cases by sex

Table 2. Cancer cases by age group and sex

Age group	Sex				Total	
	Male		Female		#	%
	#	%	#	%	#	%
0-4 yrs	28	1.34	10	0.40	38	0.82
5-9 yrs	40	1.91	20	0.79	60	1.30
10-14 yrs	36	1.72	25	0.99	61	1.32
15-19 yrs	51	2.44	54	2.15	105	2.28
20-24 yrs	58	2.77	67	2.66	125	2.71
25-29 yrs	78	3.73	85	3.38	163	3.54
30-34 yrs	82	3.92	117	4.65	199	4.32
35-39 yrs	110	5.26	208	8.26	318	6.90
40-44 yrs	115	5.50	230	9.14	345	7.49
45-49 yrs	158	7.56	295	11.72	453	9.83
50-54 yrs	198	9.47	334	13.27	532	11.55
55-59 yrs	240	11.48	285	11.32	525	11.39
60-64 yrs	269	12.86	296	11.76	565	12.26
65-69 yrs	259	12.39	215	8.54	474	10.29
70-74 yrs	201	9.61	166	6.60	367	7.96
75-79 yrs	119	5.69	62	2.46	181	3.93
80 + yrs	49	2.34	48	1.91	97	2.11
Total	2091	100.00	2517	100.00	4608	100

Table 3. Cancer cases by districts. Cancer cases by districts

S.N.	Districts	Male		Female		total	
		#	%	#	%	#	%
1	Achham	10	0.48	16	0.64	26	0.56
2	Arghakachi	24	1.15	36	1.43	60	1.30
3	Baglung	39	1.87	43	1.71	82	1.78
4	Baitadi	9	0.43	14	0.56	23	0.50
5	Bajhang	2	0.10	3	0.12	5	0.11
6	Bajura	9	0.43	14	0.56	23	0.50
7	Banke	40	1.91	59	2.34	99	2.15
8	Bara	85	4.07	82	3.26	167	3.62
9	Bardia	37	1.77	47	1.87	84	1.82
10	Bhaktapur	4	0.19	2	0.08	6	0.13
11	Bhojpur	3	0.14	7	0.28	10	0.22
12	Chitwan	155	7.41	212	8.42	367	7.96
13	Dadeldhura	10	0.48	8	0.32	18	0.39
14	Dailekh	21	1.00	16	0.64	37	0.80
15	Dang	47	2.25	67	2.66	114	2.47
16	Darchula	3	0.14	11	0.44	14	0.30
17	Dhading	7	0.33	10	0.40	17	0.37
18	Dhankuta	3	0.14	3	0.12	6	0.13
19	Dhanusha	76	3.63	87	3.46	163	3.54
20	Dolkha	0	0.00	0	0.00	0	0.00
21	Dolpa	0	0.00	1	0.04	1	0.02
22	Doti	9	0.43	8	0.32	17	0.37
23	Gorkha	36	1.72	44	1.75	80	1.74
24	Gulmi	26	1.24	39	1.55	65	1.41
25	Humla	0	0.00	0	0.00	0	0.00
26	Ilam	14	0.67	18	0.72	32	0.69
27	Jajarkot	8	0.38	5	0.20	13	0.28
28	Jhapa	55	2.63	60	2.38	115	2.50
29	Jumla	7	0.33	5	0.20	12	0.26
30	Kailali	62	2.97	91	3.62	153	3.32
31	Kalikot	6	0.29	4	0.16	10	0.22
32	Kanchanpur	46	2.20	44	1.75	90	1.95
33	Kapilvastu	57	2.73	68	2.70	125	2.71
34	Kaski	55	2.63	60	2.38	115	2.50
35	Kathmandu	7	0.33	7	0.28	14	0.30
36	Kavrepalchowk	6	0.29	1	0.04	7	0.15
37	Khotang	4	0.19	7	0.28	11	0.24
38	Lalitpur	21	1.00	24	0.95	45	0.98
39	Lamjung	2	0.10	2	0.08	4	0.09
40	Mahottari	53	2.53	67	2.66	120	2.60
41	Makwanpur	58	2.77	71	2.82	129	2.80
42	Manang	3	0.14	0	0.00	3	0.07
43	Morang	62	2.97	81	3.22	143	3.10
44	Mugu	5	0.24	1	0.04	6	0.13
45	Mustang	1	0.05	1	0.04	2	0.04
46	Myagdi	8	0.38	13	0.52	21	0.46
47	Nawalparasi	84	4.02	117	4.65	201	4.36
48	Nuwakot	3	0.14	2	0.08	5	0.11
49	Okhaldhunga	0	0.00	1	0.04	1	0.02
50	Palpa	25	1.20	48	1.91	73	1.58
51	Panchthar	8	0.38	11	0.44	19	0.41
52	Parbat	19	0.91	24	0.95	43	0.93
53	Parsa	70	3.35	64	2.54	134	2.91
54	Pyuthan	21	1.00	33	1.31	54	1.17
55	Ramechhap	0	0.00	3	0.12	3	0.07
56	Rasuwa	1	0.05	0	0.00	1	0.02
57	Rautahat	50	2.39	66	2.62	116	2.52
58	Rolpa	20	0.96	20	0.79	40	0.87
59	Rukum	14	0.67	17	0.68	31	0.67
60	Rupendehi	120	5.74	164	6.52	284	6.16
61	Salyan	12	0.57	17	0.68	29	0.63
62	Sankhuwasabha	6	0.29	5	0.20	11	0.24
63	Saptari	51	2.44	30	1.19	81	1.76
64	Sarlahi	54	2.58	64	2.54	118	2.56
65	Sindhuli	18	0.86	9	0.36	27	0.59
66	Sindhupalchowk	3	0.14	0	0.00	3	0.07
67	Siraha	52	2.49	68	2.70	120	2.60
68	Solukhumbu	1	0.05	1	0.04	2	0.04
69	Sunsari	42	2.01	48	1.91	90	1.95
70	Surkhet	41	1.96	29	1.15	70	1.52
71	Syanjha	37	1.77	51	2.03	88	1.91
72	Tanahun	57	2.73	77	3.06	134	2.91
73	Taplejung	5	0.24	6	0.24	11	0.24
74	Tehrathum	4	0.19	5	0.20	9	0.20
75	Udayapur	16	0.77	33	1.31	49	1.06
76	Nawalpur	18	0.86	12	0.48	30	0.65
77	Rukum west	1	0.05	2	0.08	3	0.07
78	Districts of India	43	2.06	31	1.23	74	1.61
Total		2091	100.00	2517	100.00	4608	100

Table 4. Cancer cases by district for both sex in descending order

S.N.	Districts	Number	Percent
1	Chitwan	367	7.96
2	Rupendehi	284	6.16
3	Nawalparasi	201	4.36
4	Bara	167	3.62
5	Dhanusha	163	3.54
6	Kailali	153	3.32
7	Morang	143	3.1
8	Parsa	134	2.91
9	Tanahun	134	2.91
10	Makwanpur	129	2.8
11	Kapilvastu	125	2.71
12	Mahottari	120	2.6
13	Siraha	120	2.6
14	Sarlahi	118	2.56
15	Rautahat	116	2.52
16	Jhapa	115	2.5
17	Kaski	115	2.5
18	Dang	114	2.47
19	Banke	99	2.15
20	Kanchanpur	90	1.95
21	Sunsari	90	1.95
22	Syanjha	88	1.91
23	Bardia	84	1.82
24	Baglung	82	1.78
25	Saptari	81	1.76
26	Gorkha	80	1.74
27	Palpa	73	1.58
28	Surkhet	70	1.52
29	Gulmi	65	1.41
30	Arghakachi	60	1.3
31	Pyuthan	54	1.17
32	Udayapur	49	1.06
33	Lalitpur	45	0.98
34	Parbat	43	0.93
35	Rolpa	40	0.87
36	Dailekh	37	0.8
37	Ilam	32	0.69
38	Rukum	31	0.67
39	Nawalpur	30	0.65
40	Salyan	29	0.63
41	Sindhuli	27	0.59
42	Achham	26	0.56
43	Baitadi	23	0.5
44	Bajura	23	0.5
45	Myagdi	21	0.46
46	Panchthar	19	0.41
47	Dadeldhura	18	0.39
48	Dhading	17	0.37
49	Doti	17	0.37
50	Darchula	14	0.3
51	Kathmandu	14	0.3
52	Jajarkot	13	0.28
53	Jumla	12	0.26
54	Khotang	11	0.24
55	Sankhuwasabha	11	0.24
56	Taplejung	11	0.24
57	Bhojpur	10	0.22
58	Kalikot	10	0.22
59	Tehrathum	9	0.2
60	Kavrepalchowk	7	0.15
61	Bhaktapur	6	0.13
62	Dhankuta	6	0.13
63	Mugu	6	0.13
64	Bajhang	5	0.11
65	Nuwakot	5	0.11
66	Lamjung	4	0.09
67	Manang	3	0.07
68	Ramechhap	3	0.07
69	Sindhupalchowk	3	0.07
70	Rukum west	3	0.07
71	Mustang	2	0.04
72	Solukhumbu	2	0.04
73	Dolpa	1	0.02
74	Okhaldhunga	1	0.02
75	Rasuwa	1	0.02
76	Dolkha	0	0
77	Humla	0	0
78	Districts of India	74	1.61
Total	Total	4608	100

Table 5. Cancer cases by district for male in descending order

S.N.	Districts	Cases	Percent
1	Chitwan	155	7.41
2	Rupendehi	120	5.74
3	Bara	85	4.07
4	Nawalparasi	84	4.02
5	Dhanusha	76	3.63
6	Parsa	70	3.35
7	Kailali	62	2.97
8	Morang	62	2.97
9	Makwanpur	58	2.77
10	Kapilvastu	57	2.73
11	Tanahun	57	2.73
12	Jhapa	55	2.63
13	Kaski	55	2.63
14	Sarlahi	54	2.58
15	Mahottari	53	2.53
16	Siraha	52	2.49
17	Saptari	51	2.44
18	Rautahat	50	2.39
19	Dang	47	2.25
20	Kanchanpur	46	2.2
21	Sunsari	42	2.01
22	Surkhet	41	1.96
23	Banke	40	1.91
24	Baglung	39	1.87
25	Bardia	37	1.77
26	Syanjha	37	1.77
27	Gorkha	36	1.72
28	Gulmi	26	1.24
29	Palpa	25	1.2
30	Arghakachi	24	1.15
31	Dailekh	21	1
32	Lalitpur	21	1
33	Pyuthan	21	1
34	Rolpa	20	0.96
35	Parbat	19	0.91
36	Sindhuli	18	0.86
37	Nawalpur	18	0.86
38	Udayapur	16	0.77
39	Ilam	14	0.67
40	Rukum	14	0.67
41	Salyan	12	0.57
42	Achham	10	0.48
43	Dadeldhura	10	0.48
44	Baitadi	9	0.43
45	Bajura	9	0.43
46	Doti	9	0.43
47	Jajarkot	8	0.38
48	Myagdi	8	0.38
49	Panchthar	8	0.38
50	Dhading	7	0.33
51	Jumla	7	0.33
52	Kathmandu	7	0.33
53	Kalikot	6	0.29
54	Kavrepalchowk	6	0.29
55	Sankhuwasabha	6	0.29
56	Mugu	5	0.24
57	Taplejung	5	0.24
58	Bhaktapur	4	0.19
59	Khotang	4	0.19
60	Tehrathum	4	0.19
61	Bhojpur	3	0.14
62	Darchula	3	0.14
63	Dhankuta	3	0.14
64	Manang	3	0.14
65	Nuwakot	3	0.14
66	Sindhupalchowk	3	0.14
67	Bajhang	2	0.1
68	Lamjung	2	0.1
69	Mustang	1	0.05
70	Rasuwa	1	0.05
71	Solukhumbu	1	0.05
72	Rukum west	1	0.05
73	Dolkha	0	0
74	Dolpa	0	0
75	Humla	0	0
76	Okhaldhunga	0	0
77	Ramechhap	0	0
78	Districts of India	43	2.06
Total		2091	100

Table 6. Cancer cases by district for female in descending order

S.N.	Districts	Cases	Percent
1	Chitwan	212	8.42
2	Rupendehi	164	6.52
3	Nawalparasi	117	4.65
4	Kailali	91	3.62
5	Dhanusha	87	3.46
6	Bara	82	3.26
7	Morang	81	3.22
8	Tanahun	77	3.06
9	Makwanpur	71	2.82
10	Kapilvastu	68	2.7
11	Siraha	68	2.7
12	Dang	67	2.66
13	Mahottari	67	2.66
14	Rautahat	66	2.62
15	Parsa	64	2.54
16	Sarlahi	64	2.54
17	Jhapa	60	2.38
18	Kaski	60	2.38
19	Banke	59	2.34
20	Syanjha	51	2.03
21	Palpa	48	1.91
22	Sunsari	48	1.91
23	Bardia	47	1.87
24	Gorkha	44	1.75
25	Kanchanpur	44	1.75
26	Baglung	43	1.71
27	Gulmi	39	1.55
28	Arghakachi	36	1.43
29	Pyuthan	33	1.31
30	Udayapur	33	1.31
31	Saptari	30	1.19
32	Surkhet	29	1.15
33	Lalitpur	24	0.95
34	Parbat	24	0.95
35	Rolpa	20	0.79
36	Ilam	18	0.72
37	Rukum	17	0.68
38	Salyan	17	0.68
39	Achham	16	0.64
40	Dailekh	16	0.64
41	Baitadi	14	0.56
42	Bajura	14	0.56
43	Myagdi	13	0.52
44	Nawalpur	12	0.48
45	Darchula	11	0.44
46	Panchthar	11	0.44
47	Dhading	10	0.4
48	Sindhuli	9	0.36
49	Dadeldhura	8	0.32
50	Doti	8	0.32
51	Bhojpur	7	0.28
52	Kathmandu	7	0.28
53	Khotang	7	0.28
54	Taplejung	6	0.24
55	Jajarkot	5	0.2
56	Jumla	5	0.2
57	Sankhuwasabha	5	0.2
58	Tehrathum	5	0.2
59	Kalikot	4	0.16
60	Bajhang	3	0.12
61	Dhankuta	3	0.12
62	Ramechhap	3	0.12
63	Bhaktapur	2	0.08
64	Lamjung	2	0.08
65	Nuwakot	2	0.08
66	Rukum west	2	0.08
67	Dolpa	1	0.04
68	Kavrepalchowk	1	0.04
69	Mugu	1	0.04
70	Mustang	1	0.04
71	Okhaldhunga	1	0.04
72	Solukhumbu	1	0.04
73	Dolkha	0	0
74	Humla	0	0
75	Manang	0	0
76	Rasuwa	0	0
77	Sindhupalchowk	0	0
78	Districts of India	31	1.23
Total		2517	100

Table 7. Top ten cancer cases for both sex

S.N.	ICD-10	Cancer sites	Number	Percent
1	C34	Bronchus and lung	554	12.02
2	C53	Cervix uteri	495	10.74
3	C50	Breast	466	10.11
4	C16	Stomach	235	5.1
5	C23	Gall bladder	213	4.62
6	C56	Ovary	213	4.62
7	C02	Tongue	163	3.54
8	C20	Rectum	162	3.52
9	C67	Bladder	150	3.26
10	C41	Bones,joints & articular cartilage of other & unspecified sites	138	2.99

Table 8. Top ten cancer cases for male

S.N.	ICD-10	Cancer sites	Number	Percent
1	C34	Bronchus and lung	319	15.26
2	C16	Stomach	130	6.22
3	C02	Tongue	123	5.88
4	C67	Bladder	106	5.07
5	C23	Gall bladder	97	4.64
6	C41	Bones,joints & articular cartilage of other & unspecified sites	92	4.03
7	C06	Other and unspecified parts of mouth	75	3.59
8	C20	Rectum	68	3.25
9	C22	Liver and intrahepatic bile duct	68	3.25
10	C32	Larynx	67	3.2

Table 9. Top ten cancer cases for female

S.N.	ICD-10	Cancer sites	Number	Percent
1	C53	Cervix uteri	495	19.67
2	C50	Breast	438	17.4
3	C34	Bronchus and lung	235	9.34
4	C56	Ovary	213	8.46
5	C23	Gall bladder	116	4.61
6	C16	Stomach	105	4.17
7	C20	Rectum	94	3.73
8	C73	Thyroid gland	51	2.03
9	C41	Bones,joints & articular cartilage of other & unspecified sites	46	1.82
10	C22	Liver and intrahepatic bile duct	44	1.75

DISCUSSION

This study was undertaken at BP Koirala memorial cancer hospital, Bharatpur, Chitwan, Nepal, Which is only national comprehensive cancer center in Nepal. 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 excluded from the database. Then the data were coded according to ICD- 03 and ICD-10 published by IARC/WHO. At last net 4608 cases were proceed for analysis using SPSS 19.0. According to the available data, cancer cases were higher in Chitwan district 367 (7.96%) followed by Rupandehi 284 (6.16%) and Nawalparasi 201 (4.36%) for both sex. Among the female cases Chitwan 142 (6.72%) followed by Rupandehi 108 (5.11%) and Nawalparasi 101 (4.78%) and. Similarly, Chitwan 155 (7.41%) followed by Rupandehi 120 (5.74) and Bara 85 (4.07) for male.

Conclusion

Most of the cancer cases were from Chitwan followed by Rupandehi and Nawalparasi district.

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