



**PREVALENCE AND PATTERNS OF COMPLEMENTARY AND ALTERNATIVE
MEDICINE (CAM) USE IN THE TREATMENT OF CANCER IN A TERTIARY CARE
CENTRE - A HOSPITAL BASED STUDY**

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ABSTRACT

Background: In recent years, interest in and use of complementary and alternative medicine (CAM) have increased. Patients turn to CAM because of varied reasons. A wider exploration of epidemiological patterns of CAM use are of larger interests for management of cancer from patients as well as treating doctors' points of view.

Objective: To find prevalence and patterns of CAM use among cancer patients. **Material and Methods:** Present cross-sectional study was conducted at Radiotherapy/Oncology Outpatient Department (OPD) of Government Medical College and Hospital (GMCH), a tertiary healthcare facility in Chandigarh (UT), North India during June 2012 to May 2014. A systematic sampling design was adopted to select patients attending the Radiotherapy OPD of the health facility. Results were expressed by percentages and rates in different subgroups. Information regarding personal and family characteristics, beliefs and practices related with CAM, sources of CAM awareness, perceived reliefs/benefits of CAM use, and positive and negative motivations concerning CAM was collected in privacy. **Results:** A total of 1,117 cancer patients including 501(44.9%) were males and 616(55.1%) females participated in the study. There were 163(14.6%) patients having family history of cancer. Maximum percentage of users (33.6%) was recorded among elderly patients above 60 years of age. Low Socio- economic status contributed maximum to proportions of CAM use (40.5%). Users represented more by females, Hindus, married patients of low SES, vegetarian, joint families, housewives, less educated patients, having no family history of cancer. Among CAM users, breast cancer contributed 19.4% cases while Head and Neck cancer contributed 10.0% cases. The most common CAM therapy in use was found to be Ayurvedic treatment reported by 187(43.3%) patients followed by Yoga, Meditation being used by 139(32.2%) patients. Overall CAM use was found to be 38.7%. Large gaps existed between awareness and practice of CAM use. Overall proportion of CAM users among there who were aware was found to be (40.0%). **Conclusions and Suggestions:** Present study concluded that there was high degree of awareness and practice of CAM among cancer patients irrespective of their socio demographic characteristics, type of cancer, etc. Overall CAM use was found to be 38.7%. Large gaps existed between awareness and practice of CAM use. There is an urgent need of conducting further in depth epidemiological studies to evaluate the efficacy of various CAM therapies in use for cancer. Future Research should be also focus on investigating reasons and safety of CAM use.

KEYWORDS: Complementary and Alternative Medicine (CAM); Conventional Medicine.

INTRODUCTION

In recent years, interest in and use of complementary and alternative medicine (CAM) have increased. People often turn to Complementary and alternative medicine (CAM) when they have a long-lasting problem that conventional medicine hasn't completely cured. The recent increase in

the interest and growth CAM can be attributed to many reasons including technological, economic, cultural and social trends. Herbal medicine is still the mainstay of about 75–80% of the world population, mainly in developing countries, for primary health care.^[2] The number of patients seeking alternate and herbal therapy

is growing exponentially.^[3] It has been estimated that two-thirds of the world's population seek health care from sources other than conventional biomedicine.^[4] Patients turn to CAM because of varied reasons. Epidemiological patterns of CAM use are of larger interests for management of cancer from patients as well as treating doctors' points of view. A wider exploration of prevalence and patterns of CAM use among cancer patients is of interest. However, a little research has been carried out on usage patterns of CAM for cancer patients in India. The present study aims at finding the prevalence and usage pattern of CAM by cancer patients attending GMCH Chandigarh, a tertiary health care facility providing health care to patients from several states.

MATERIAL AND METHODS

The study was conducted at Radiotherapy/Oncology Outpatient Department (OPD) of Government Medical College and Hospital (GMCH), a tertiary healthcare facility in Chandigarh (UT), North India during June 2012 to May 2014. Oncology Department of GMCH Chandigarh is well equipped and treating different cancer patients. Chandigarh is a highly urbanized city and western culture is adopted by a large proportion of respondents in this modern city called "City Beautiful of India". Patients suffering from cancer from different neighboring states like Punjab, Haryana, Himachal Pradesh and Uttar Pradesh, and Utrakhnad etc. approach for treatment in health facilities situated in this city. In recent years, there is an alarming increase in incidence of cancer in these states in both rural and urban communities.

Study Design: A cross-sectional study design was adopted among patients of different types of cancer at different stages approaching for allopathic treatment at the health facility.

Sampling Design: A systematic sampling design was adopted to select patients attending the Radiotherapy OPD of the health facility. There were about 40–50 new patients attending the OPD every day. Among every third patient in a systematic manner with a random start every day was included. Patients revisiting the OPD were excluded while selecting the sample.

Information collected/study variables: Patients suffering from cancer were interviewed to collect desired Information using semi-structured interview schedule. In case patients were not in the condition of giving information due to any reason, their family members/close relatives accompanying them served as respondents. Information regarding personal and family characteristics, beliefs and practices related with CAM, sources of CAM awareness, perceived reliefs/benefits of CAM use, and positive and negative motivations concerning CAM was collected in privacy. Questionnaires/schedules were filled by interview method asking questions in local/understandable

language. Information was pretested and suitably modified through a pilot study.

Inclusion Criterion: Patients with confirmed diagnosis of any type of cancer irrespective of age, gender, site and staging of cancer approaching for allopathic treatment at the studied health facility for the first time willing to participate in the study were included.

Exclusion Criterion: Patients not undergoing allopathic treatment for cancer at the health facility or not willing to participate in the study due to any reason were excluded.

Optimum Sample Size: Power analysis was done to calculate optimum sample size for the proposed study. Sample size was calculated by using the following formula with approximation for large population

$$n_{opt} = \frac{Z^2_{1-\alpha/2} (1-P)}{\epsilon^2 P},$$

Where,

P = anticipated population proportion

1- α = confidence coefficient

ϵ = relative precision, and

Z(.) is the value of standard normal variate

On the basis of 60% CAM use as primary outcome parameter anticipated on the basis of pilot survey findings and assuming 95% confidence coefficient and 5% relative precision, optimum sample size of 1,024 cancer patients was obtained. This study covered a sample of 1,117 cancer patients.

Ethical Issues: Ethical Guidelines of ICMR (2006) on human participants were followed. A written informed consent was taken from the patients. Prior approval from Institutional Ethics Committee was taken for conducting the study.

RESULTS

There were total 1117 cancer patients surveyed from Government Medical College and Hospital (GMCH) Chandigarh. Among them, 501(44.9%) were males and 616(55.1%) were females. Among all surveyed patients, 382(34.2%) were elderly aged 60 years and above. Percentages of male and female elderly were found to be 39.3% and 30.0% respectively. Surveyed patients represented different occupational categories and of varied religious faiths comprising 839 (75.1%) hindus, 233(20.9%) sikhs and 43(3.8%) muslims. Among all, 946(84.7%) patients were married and 108(9.7%) widow/widower and only 62(5.6%) were unmarried. There were 672(60.2%) vegetarian and 445(39.8%) non vegetarian. There were 662(59.3%) patients from joint families and 454(40.6%) from nuclear. There were 163(14.6%) patients having family history of cancer. Among all, 967(86.6%) patients were aware about their disease. There were 204(18.3%) patients who were suffering from breast cancer and 114(10.2%) from head and neck, 102(9.1%) from cervical cancer, 53(4.7%) oral

cancer and 15(1.3%) prostate & 16(1.4%) GIT cancer rest 600(53.7%) were suffered from other type of cancer (Table1).

Table 2 shows distribution of CAM users and non users by background characteristics. Among Non Users, 381 (55.6%) were females as compared to 235 (54.4%) females among users. Maximum percentage of users was recorded among elderly patients wherein 141(33.6%) users were reported. Almost similar pattern of users and non users was observed according to place of residence and caste. Low Socio- economic status contributed maximum to proportions of CAM use wherein out of all users 175(40.5%) patients were using CAM. Among users there were 295(68.3%) patients from joint families as compared to 367(53.6%) among non users. Larger proportions of CAM users (16.0%) were reported among those having family history of cancer as compared to that among non users (13.7%). Users represented more by females, Hindus, married patients of low SES, vegetarian, joint families, housewives, less educated patients, having no family history of cancer. Among CAM users, breast cancer contributed 19.4% cases while Head and Neck cancer contributed 10.0% cases.

Table-3 presents awareness of CAM therapies available for cancer treatment by gender. Particularly, there were

952(88.1%), 966(86.5%) and 825(73.9%) patients who were aware of ayurvedic treatment, yoga/meditation and homeopathic treatment respectively. Therapy specific user rates of males and females are shown in Table-4. Among males, CAM therapies in common use were found to be Ayurveda (18.8%) followed by Spiritual Therapy (12.6%) and Yoga/Meditation (11.6%) whereas, among females, user rates of these therapies were reported to be (15.5%), (13.1%) and (13.1%) respectively. The most common CAM therapy in use was found to be Ayurvedic treatment reported by 187(43.3%) patients followed by Yoga, Meditation being used by 139(32.2%) patients. Overall CAM use was found to be 38.7%: 39.3% among males and 38.1% among females. Overall proportion of CAM users among there who were aware was found to be (40.0%).

CAM users were asked to give their views on comparison CAM and allopathic treatment (Table-5). Among 432 users, 162 (37.5%) were of the opinion that allopathy was better than CAM. Only 77 (17.8%) patients reported to have faith in CAM therapies considerable number of patients having faith has not responded regarding the therapy they had faith in Ayurveda was reported only by 4 (5.2 %) of those respondents who had faith and this was somehow to be maximum.

Table-1: Background Characteristics of Patients by Gender

Background Information	Male (N=501)		Female (N=616)		Total (N=1117)	
	No.	%	No.	%	No.	%
Age						
≤21 yr	24	4.8	20	3.2	44	3.9
21-35	37	7.4	56	9.1	93	8.3
36-49	105	21.0	169	27.4	274	24.5
50-59	138	27.5	186	30.2	324	29.0
60 & above	197	39.3	185	30.0	382	34.2
Family members						
1	14	2.8	10	1.6	24	2.1
2	26	5.2	46	7.5	72	6.4
3	31	6.2	59	9.6	90	8.1
4-6	272	54.3	340	55.2	612	54.8
7-9	110	22.0	106	17.2	216	19.3
10 and Above	48	9.6	55	8.9	103	9.2
Residence place						
Urban	150	29.9	242	39.3	392	35.1
Rural	351	70.1	370	60.1	721	64.5
Slum	0	0.0	04	0.6	04	0.4
Caste						
General Category	240	47.9	325	52.8	565	50.6
SC	138	27.5	158	25.6	296	26.5
ST	4	0.8	9	1.5	13	1.2
OBC	119	23.8	124	20.1	243	21.8
Religion						
Hindu	391	78.0	448	72.7	839	75.1
Muslim	23	4.6	20	3.2	43	3.8
Sikh	85	17.0	148	24.0	233	20.9
Christian	2	0.4	0	0.0	02	0.2

Marital status						
Married	450	89.8	496	80.5	946	84.7
Unmarried	36	7.2	26	4.2	62	5.6
Widow/Widower	15	3.0	93	15.1	108	9.7
Divorcee	0	0.0	1	0.2	01	0.1
Socio-economic status						
Low	212	42.3	233	37.8	445	39.8
Middle	138	27.5	163	26.5	301	26.9
High	151	30.1	220	35.7	371	33.2
Dietary habit						
Vegetarian	244	48.7	428	69.5	672	60.2
Non Vegetarian	257	51.3	188	30.5	445	39.8
Type of family						
Joint	315	62.9	347	56.3	662	59.3
Nuclear	186	37.1	268	43.5	454	40.6
Extended	0	0.0	01	0.2	01	0.1
Occupation						
Housewife/ unemployed	118	23.6	517	83.9	635	56.8
Service	78	15.6	31	5.0	109	9.8
Business	33	6.6	02	0.3	35	3.1
Labourer	103	20.6	21	3.4	124	11.1
Skilled Worker	28	5.6	12	1.9	40	3.6
Agriculture	82	16.4	09	1.5	91	8.1
Any Other	59	11.8	24	3.9	83	7.4
Educational status						
Illiterate	111	22.2	276	44.8	387	34.6
Primary	97	19.4	109	17.7	206	18.4
Middle	109	21.8	69	11.2	178	15.9
High School	107	21.4	65	10.6	172	15.4
Intermediate	26	5.2	24	3.9	50	4.5
Graduate	26	5.2	38	6.2	64	5.7
PG	13	2.6	25	4.1	38	3.4
Engineer	3	0.6	1	0.2	04	0.4
Any Other	9	1.8	9	1.5	18	1.6
Family history cancer						
Yes	58	11.6	105	17.0	163	14.6
No	443	88.4	511	83.0	954	85.4
Awareness about disease						
Yes	442	88.4	525	85.2	967	86.6
No	58	11.6	91	14.8	150	13.4
Site of cancer						
Brain Cancer	06	1.2	06	1.0	12	1.1
Breast Cancer	07	1.4	197	32.0	204	18.3
Oral Cancer	45	9.0	08	1.3	53	4.7
Cervical Cancer	04	0.8	98	15.9	102	9.1
Head & Neck Cancer	95	19.0	19	3.1	114	10.2
Prostate Cancer	15	3.0	0	0.0	15	1.3
GIT Cancer	02	0.4	14	2.3	16	1.4
Any Other	327	65.3	274	44.5	600	53.7

Table-2: Distribution of CAM Users and Non Users According to Background Characteristics

Background Characteristic	Non Users N=685	%	Users N=432	%	Total N=1117	%
Gender						
Male	304	44.4	197	45.6	501	44.9
Female	381	55.6	235	54.4	616	55.1
Age						
≤21yr	30	4.4	14	3.2	44	3.9

21-35	59	8.7	34	7.8	93	8.3
36-49	162	23.7	112	26.0	274	24.5
50-59	197	28.8	127	29.4	324	29.0
60 & above	237	34.5	145	33.6	382	34.2
Residence place						
Urban	241	35.2	151	35.0	392	35.1
Rural	444	64.8	281	65.0	725	64.9
General Category	349	50.9	216	50.0	565	50.6
SC	183	26.7	113	26.2	296	26.5
ST	4	0.6	9	2.1	13	1.2
OBC	149	21.8	94	21.8	243	21.8
Religion						
Hindu	515	75.2	324	75.0	839	75.1
Muslim	21	3.1	22	5.1	43	3.8
Sikh	148	21.6	85	19.7	233	20.9
Christian	1	0.1	1	0.2	2	.2
Marital status						
Married	563	82.2	383	88.7	946	84.7
Unmarried	40	5.8	22	5.1	62	5.6
Widow/Widower	82	12.0	26	6.0	108	9.7
Divorcee	0	0.0	1	0.2	1	.1
SES						
Low	270	39.4	175	40.5	445	39.9
Middle	189	7.6	112	25.9	301	26.9
High	226	33.0	145	33.6	371	33.3
Dietary habit						
Vegetarian	425	62.0	247	57.2	672	60.2
Non Vegetarian	260	38.0	185	42.8	445	39.8
Type of family						
Joint	367	53.6	295	68.3	662	59.3
Nuclear	318	46.4	136	31.5	454	40.6
Extended	0	0.0	1	0.2	1	0.1
Occupation						
Housewife	323	47.2	190	44.0	513	45.9
Service	64	9.3	45	10.4	109	9.8
Business	18	2.6	17	3.9	35	3.1
Labourer	70	10.2	54	12.5	124	11.1
Skilled Worker	26	3.8	14	3.2	40	3.6
Agriculture	52	7.6	39	9.0	91	8.1
Unemployed	89	13.0	33	7.6	122	10.9
Any Other	43	6.3	40	9.3	83	7.4
Educational status						
Illiterate	236	34.5	151	35.0	387	34.6
Primary	129	18.8	77	17.8	206	18.4
Middle	121	17.7	57	13.2	178	15.9
High School	107	15.6	65	15.0	172	15.4
Intermediate	27	3.9	23	5.3	50	4.5
Graduate	33	4.8	31	7.2	64	5.7
PG	21	3.1	17	3.9	38	3.4
Engineer	1	0.1	3	0.7	4	0.4
Any Other	10	1.5	8	1.9	18	1.6
Family history cancer						
Yes	94	13.7	69	16.0	163	14.6
No	591	86.3	363	84.0	954	85.4
Awareness about disease						
Yes	589	86.0	378	87.7	967	86.6
No	96	14.0	53	12.3	150	13.4
Site of cancer						

Brain cancer	9	1.3	3	0.7	12	1.1
Breast cancer	120	17.5	84	19.4	204	18.3
Oral cancer	32	4.7	21	4.9	53	4.7
Cervical cancer	72	10.5	30	7.0	102	9.1
Head & neck cancer	71	10.4	43	10.0	114	10.2
Prostate cancer	7	1.0	9	2.1	16	1.4
GIT cancer	12	1.7	4	1.0	16	1.4
Any other	362	52.9	238	55.6	600	53.7

Table-3: Respondents by Awareness of Different CAM Therapies and Gender

Knowledge	Male (N=501)		Female (N=616)		Total (N=1117)	
	NO	(%)	NO	(%)	NO	(%)
CAM therapy						
Ayurvedic Treatment	426	85.0	526	85.4	952	85.2
Unani	87	17.4	118	19.2	205	18.4
Siddha	14	2.8	20	3.2	34	3.0
Homeopathic treatment	366	73.1	459	74.5	825	73.9
Naturopathy/ Herbal Treatment	103	20.6	143	23.2	246	22.0
Acupuncture	90	18.0	152	24.7	242	21.7
Psychological Therapy	42	8.4	56	9.1	98	8.8
Spiritual Therapy/Prayer & Faith healing	202	40.3	260	42.2	462	41.4
Laughter Therapy	142	28.3	203	33.0	345	30.9
Physiotherapy	39	7.8	85	13.8	124	11.1
Yoga/Meditation	427	85.2	539	87.5	966	86.5
Any other	27	5.4	50	8.1	77	6.9
CAM use						
Yes	197	39.3	235	38.2	432	38.7
No	304	60.7	381	61.8	385	61.3

Table-4: Respondents by CAM Usage Pattern and Gender

CAM therapy used	Male (N=501)		Female (N=616)		Total (N=1117)	
	NO	(%)	NO	(%)	NO	(%)
Ayurvedic Treatment	94	18.8	93	15.1	187	16.7
Unani	5	1.0	7	1.1	12	1.8
Siddha	0	0.0	1	0.2	01	0.2
Homeopathic treatment	15	3.0	22	3.6	37	3.3
Naturopathy/ Herbal Treatment	12	2.4	10	1.6	22	2.0
Acupuncture	2	0.4	8	1.3	10	0.9
Psychological Therapy	2	0.4	2	0.3	04	0.4
Spiritual therapy/prayer & faith	63	12.6	81	13.1	144	12.9
Laughter Therapy	15	3.0	14	2.3	29	2.6
Physiotherapy	1	0.2	7	1.1	08	0.7
Yoga/Meditation	58	11.6	81	13.1	139	12.4
Overall	197	39.3	235	38.1	432	38.7

Table-5: Opinion of Users Regarding CAM Therapies and Allopathic Treatment for Cancer

Opinion	No N=432	(%)
Allopathic is better than CAM	162	37.5
No Relief/ Not effective	29	6.7
CAM gives good relief	10	2.3
CAM causes side effects	10	2.3
Both medicines are equally effective	10	2.3
CAM takes long time to relief	19	4.4
Mostly CAM doctors are fake	02	0.5
CAM is not acceptable by family members	04	0.9
Hard to manage	01	0.2
CAM works from roots	02	0.5

CAM Gives hope for life	01	0.2
CAM makes our mind strong	02	0.5
Allopathic medicines are very heavy doses	01	0.2
Don't know	02	0.5
Faith in any of the above therapies		
Yes	77	17.8
No	331	76.6
No Response	24	5.6

DISCUSSION

The present study was conducted to explore the actual usage pattern of CAM by cancer patients undergoing allopathic treatment at a tertiary health care facility in Chandigarh (U.T.). The study concluded that there was high degree of awareness and practice of CAM among and cancer patients irrespective of their socio-demographic characteristics, type of cancer etc. Overall CAM use was found to be 38.7% (39.3 % among males and 38.2% females) against overall awareness of 96.7% (97.4% for males and 96.1% for females) for at least one CAM. Gap between awareness and practice was found to be 58.0%.

Use of CAM in Indian community is reported quite common in the existing literature. In an Indian community study observed prevalence of CAM use was found to be 67.7% among individuals with diabetes and awareness of CAM among patients was high (71%). High prevalence of CAM use was found (67.7%) among all participants, and 95% among participants aware of CAM, mostly using 'naturopathy' (97.3% among users).^[6] A study conducted by the Indian Council of Medical Research (2007) of 45,000 people found that 33% used TCAM for 'common ailments', while only 18% preferred to use this system for serious ailments.^[7] It is estimated that 30% to 50% of the general adult population of industrialized nations use one form of CAM or another.^[8]

In the present study, overall CAM use was found to be 38.7% including 39.3% among males and 38.2% among females. In terms of cancer, until now there has been little data available regarding patient usage of CAM, although estimates have suggested usage may be around 38%.^[9] In a WHO report, sixty-two percent of adults used some form of CAM therapy during the past 12 months when the definition of CAM therapy included prayer specifically for health reasons. When prayer specifically for health reasons was excluded from the definition, 36% of adults used some form of CAM therapy during the past 12 months.^[10] The Present study reported the most common CAM therapy in use was found to be Ayurvedic treatment reported by (43.3%) patients followed by Yoga, Meditation being used by (32.2%) patients. Similar results have been shown in earlier study in Delhi.^[11] The main weakness of our study is that it is a hospital based survey; thereby excluding patients who have abandoned conventional treatment completely or never used it at all and does not represent CAM use in the community.

CONCLUSIONS AND SUGGESTIONS

Present study concluded that there was high degree of awareness and practice of CAM among cancer patients irrespective of their socio demographic characteristics, type of cancer, etc. Overall CAM use was found to be 38.7%. Large gaps existed between awareness and practice of CAM use. There is an urgent need of conducting further in depth epidemiological studies to evaluate the efficacy of various CAM therapies in use for cancer. Future Research should be also focus on investigating reasons and safety of CAM use.

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