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Utilization of Complementary and Alternative Medicine among Patients with cancer at Bhaktapur cancer hospital in Nepal.

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ABSTRACT

Introduction:- Today, complementary and alternative medicine (CAM) is popular all over the world. Billions of dollars are spent on this thriving business. Despite the massive progress of sophisticated conventional medicine to prevent, detect and treat cancer, many patients still resort to complementary and alternative medicine (CAM) treatment in both developed and developing states for a variety of reasons and have both negative and positive results.

Aim: - The study was aimed to assess the Utilization of Complementary and Alternative Medicine among Patients with cancer at Bhaktapur cancer hospital in Nepal.

Methods:- A descriptive cross-sectional study design and quantitative approach were adopted among 94 patients to find out the utilization of CAM among cancer patients attending at Bhaktapur Cancer Hospital between 2019/5/5 to 2019/5/16. A semi-structured interview schedule was used for data collection. The duration of the interview was of 15 – 20 minutes and surveys were done at selected wards after obtaining approval

from concerned authority and informed written consent using a survey instrument of 20 questions regarding complementary and alternative medicine (CAM) consumption.

Results: - A total of 94 patients were included. Mean age was 47 (min-max: 18 – 74). Most of the patients had Uterine (21.3%), lungs (12.8%), and breast cancers (11.7%) followed by the cervix (10.6%) and colorectal (10.6%) cancer. Out of 94 patients ,58 (61.7 %) received CAM .Among 58 users 36.2% of them used CAM while receiving conventional treatment of cancer. More than one CAM was being practiced by a single cancer patient and the majority (79.3%) did not inform their clinician about the CAM they are using. Female gender, shorter disease duration, advanced disease age, and prior use of CAM were significantly associated with CAM use. Patients using CAM were generally informed by close friends, relatives, and religious groups.

CHAPTER I

INTRODUCTION

1.1 Background of the study

Across the globe, complementary and alternative medicine (CAM) is trending day by day. Billions of dollars are spent on this booming business. The World Health Organization (WHO) estimates that 4 billion people, 80 percent of the world population, presently use herbal medicine for some aspect of primary health care(1). Considering that a study from the Tikapur Kailali district in Nepal found that 3/4 (75%) people use CAM with allopathic medicines, more than half (58%) apply as medicine at the initial stage of the illness and more interestingly, more than half (51%) believe that CAM is the good way to promote sexual health and 17 % used it for cancer and palliative care (2). Results on the use of CAM vary significantly in developed and developing countries, as surveys vary in terms of definitions of CAM and specific types of therapy included in the questionnaires. According to US National Center for Complementary and Alternative Medicine (NCCAM) “a group of diverse medical and health care systems, practices and products that are not presently considered to be a part of conventional medicine is termed as CAM”. (3)

Many cancer patients have switched to complementary and alternative medicine (CAM) in the hope of finding a cure for their disease and making them feel better. According to a study published in JAMA Oncology, cancer patients who receive complementary drugs (CM) are more likely to refuse conventional cancer treatment and may have an increased risk of death. It is used in addition to conventional cancer treatment and has been shown to help patients improve their quality of life and feel more positive, but its effects on real survival outcomes are unknown. Many cancer patients have switched to complementary and alternative medicine (CAM) in the hope of finding a cure for their disease and making them feel better. According to a study published in JAMA Oncology, cancer patients who receive complementary drugs (CM) are more likely to refuse conventional cancer treatment and may have an increased risk of death. It is used in addition to

conventional cancer treatment and has been shown to help patients improve their quality of life and feel more positive, but its effects on real survival outcomes are unknown.

(3) CAM that is absorbed systemically and biologically active is the most likely to interfere with concomitant chemotherapy and could potentially cause harm to cancer patients. The population of patients with curative intent is at increased risk when taking biologically active CAM adjuvant with chemotherapy, altering the intensity of the chemotherapy dose, which can adversely affect disease-free survival and overall survival. Body-mind CAM, which has no biological activity, has shown superior efficacy to standard care when used to support patients undergoing chemotherapy and, if applied with reasonable patient-specific precautions, is safe to use with the treatment of adjuvant chemotherapy. (4). Therefore, cancer patients should be warned of these possible interactions and advised to openly discuss the use of CAM with their treating physician. For that reason, the general concept that natural products are harmless should be changed to a more realistic and responsible attitude. Tighter legislation and regulation (including internet sales and advertising) could play a crucial role in this awareness raising process. (5)

Hence, this study is planned to document the use of CAM among cancer patients in selected hospitals

1.2 Rationale of the study

The highest weight of cancer occurs in developing nations, where the use of Complementary and alternative medicine (CAM) is still widespread and it has both positive and negative outcomes.

Complementary and Alternative Medicine (CAM) is used by about 80% of the population in Nepal. The decision to use these forms of treatment may or may not be guided by a professional. (6)Regardless of this trend, few studies have been conducted to report Complementary and alternative medicine (CAM) practices of patients with cancer in the developing world. Also, there are considerable gaps in the literature on CAM use. CAM that is absorbed systemically and biologically active is the most likely to interfere with concomitant chemotherapy and could potentially cause harm to cancer patients. The population of patients with curative intent is at increased risk when taking biologically

active CAM adjuvant with chemotherapy, altering the intensity of the chemotherapy dose, which can adversely affect disease-free survival and overall survival. Body-mind CAM, which has no biological activity, has shown superior efficacy to standard care when used to support patients undergoing chemotherapy and, if applied with reasonable patient-specific precautions, is safe to use with the treatment of adjuvant chemotherapy. (4) Hence, cancer patients should be warned of these possible interactions and advised to openly discuss the use of CAM with their treating physician. For that reason, the general concept that natural products are harmless should be changed to a more realistic and responsible attitude. (5)

Therefore, this study will be conducted to evaluate the sample population of Bhaktapur Cancer hospital, considering its need. The foremost thrust of this research will be to assess the utilization of Complementary and Alternative Medicine (CAM)from surveying a sample population of cancer patients

1.3 Significance of the study

The findings give the baseline information for the future researcher to conduct further research on CAM.

It improves the understanding of CAM utilization and has appropriate Complementary and alternative medicine use

1.4 Objectives of the study

1.4.1 General objectives

To assess the utilization of complementary and alternative medicine among patients with cancer at Bhaktapur cancer hospital

1.4.2 Specific objectives

To assess Socio-demographic characteristics of patients

To identify the use of a different type of alternative medicine practice in the selected area.

To identify the factors related to the use of complementary and alternative medicine.

To measure the association of selected socio-demographic variables with CAM utilization.

1.5 Research questions

What is the utilization of complementary and alternative medicine (CAM) among cancer patients

1.6 Variables

1.6.1 Independent variables

1. Socio-demographic characteristics

Age

Gender

marital status

Religion

Employment status

Education level

Residence

2. Prior use of CAM for other comorbidities
3. Source of information

Conventional health care personnel

Friends

Family member

Religious group

Relatives

Mass media

Printed materials

Other Patents

4. Factor-related to use CAM

Characteristics of disease

Duration of disease

Stage of disease

Treatment received/receiving

Purpose of use

Dissatisfaction with physician

Relief from symptoms

cure the cancer

boost the immune system

1.6.2Dependent variables

Utilization of complementary and alternative medicine (CAM)

1.7 Conceptual framework

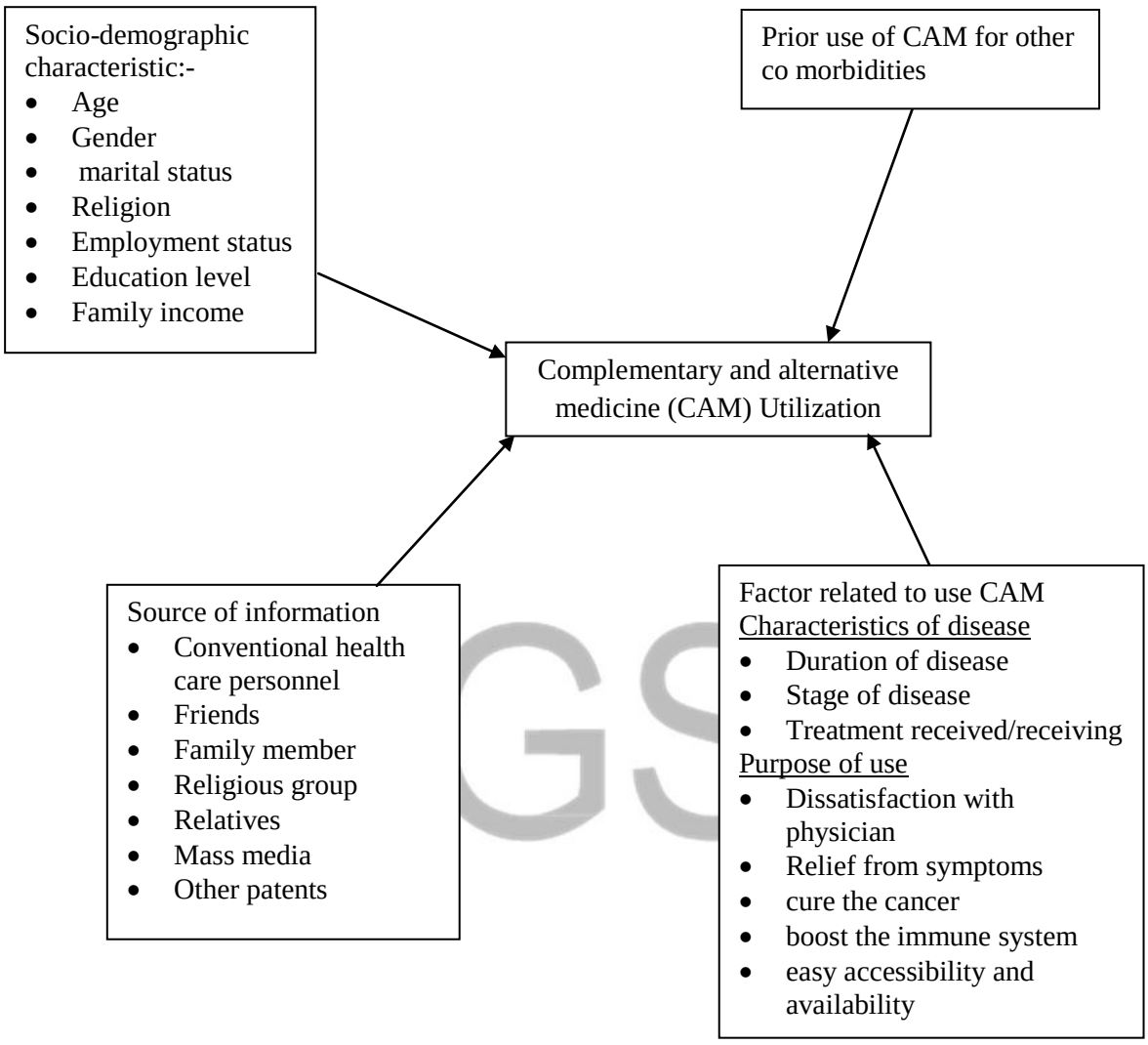

Figure 1: Conceptual Framework of CAM users

In the figure, the Utilization of complementary and alternative medicine (CAM) is the dependent variable which depends on independent variables: socio-demographic characteristics, source of information, prior use of CAM, and various other related factors.

1.8 Operational definition

Complementary and Alternative Medicine

CAM is the term for medical products and practices that are not part of standard medical care and used by cancer patients

Utilization of Complementary and Alternative Medicine

Use of one or more alternatives as

Acupressure

Acupuncture

Ayurveda

Homeopathy

Massage

meditation

yoga practice

spiritual therapy as Om Santi

Homeopathy

Rekki

Patient

All hospitalized individual who has been diagnosed with cancer.

1.9 Delimitations of the study

The study was conducted only for academic purposes. So, the finding cannot be generalized in another setting or national context.

The validity of results may not necessarily be reflective of all patients as studies were conducted using population samples of (n=94) cancer patients attending, at Bhaktapur cancer hospital only.

CHAPTER II
LITERATURE REVIEW

2.1 Introduction

Across the globe, complementary and alternative medicine (CAM) is trending day by day.CAM covers a broad and diverse group of treatments and products that do not tend to be widely used by conventional healthcare professions. (7) The decision to use these forms of treatment may or may not be guided by a professional. CAM can be administered through physical and mental therapies such as acupuncture and meditation or systemic absorption through the administration of biologically active substances such as herbs, vitamins, minerals, and food supplements. CAM, like traditional Chinese medicine (TCM), can combine body-mind therapies with biologically active substances. For example, a practitioner of traditional Chinese medicine may recommend acupuncture and/or biologically active herbs and naturopaths can combine mental therapies with herbs and dietary supplements. Biologically active CAM that is systemically absorbed is the most likely to interfere with concomitant chemotherapy and potentially cause harm to cancer patients. (8–13)

Some mechanisms of action for biologically-active herbal CAM with chemotherapy have been postulated to occur at an enzyme level, through metabolic pathways or through altering ATP binding cassette transporters. (14) As biologically-active CAM, such as herbal products, are being sought by cancer patients with increasing frequency,(9) It has been estimated that in the population of patients receiving chemotherapy and taking CAM, at least 27% are at risk of a clinically relevant interaction. (15)

2.2 Review of literature

“A study of Enugu urban, Southeast Nigeria revealed the maximum incidence of CAM use at one time or another (84.7%). The cross-sectional study concludes that Biological

products, 347 (56%), were the most frequently used CAM with honey and herbal preparations followed by spiritual therapy, 306 (49.4%). The foremost route of administration for CAM products was oral and about 40% of the respondents combined CAM with conventional medicine. Over half, 349 (56.3%), of the respondents used CAM alone for treatment and 271 (43.7%) used conventional medicine alone while 248 (40%) combined CAM and conventional medicine. The majority (78.6%) of CAM users benefited from CAM products after using them while a few 184 (29.7%) complained of adverse reactions". (16)

"Another study at the GURH chemotherapy center found that 154 (79%) patients were CAM users. The most commonly used modes of CAM were traditional herbal medicine (72.1%) and only 20.8% of patients discussed the use of CAM with their health care provider. This study concluded that educational status, average monthly income, disease stage, and comorbidity were strong predictors of CAM use. No significant differences in quality of life were found among CAM users and non-users, except in financial difficulties ($p = 0.020$) ". (17)

"The study of Germany among 448 respondents with breast- and/or gynecological cancer demonstrated 74.1% use complementary medication simultaneous to their systemic therapy. The survey writes vitamins and minerals supplements (72.3%), medicinal teas (46.7%), phytotherapy (30.1%), and mistletoe (25.3%) were the most frequently applied methods. The analysis showed that various patients, disease and therapy characteristics like receiving chemotherapy ($p=0.002$), and younger age (younger than 60 years; $p=0.017$) are significantly associated with its CAM "(18)

"The same research on Peru people at National Cancer Institute, point out 68.3% of people claimed to use herbal medicine (HM) regularly for general health preservation. The study claims, 56.8% of the patients turned to plants first to treat the disorders for which they later came to the cancer care center, most importantly on its comparison with the number of plant species used routinely ($n = 78$), a selection of plants was made by patients in response to the symptoms of cancer ($n = 46$). At least 2 plant species, Aloe

vera, and Morinda citrifolia were notably associated with the treatment of liver cancer–related symptoms in the patient group. (19) ”

“Moreover analysis on Australian population showed 60% of study respondents engaged in CAM use at the time of commencing chemotherapy treatment, of which most (41/45) were orally ingested CAM. The study included the majority of the female population (71%) and the breast was the most prevalent cancer type (65%), with 71% having a stage 1 or 2 cancer while 56% were married and 71% had completed education at the high school level or above. The study confirms a higher proportion of females, married and high-income respondents was appreciably involved CAM use group ”(4)

"From September 2015 to February 2016, a cross-sectional study was conducted with data from 482 cancer patients in Mongolia who attended the National Cancer Center, where 47.9% reported using one or more CAM. Animal products were the most popular CAM modes, followed by herbal products. Half of the users used CAM while receiving conventional cancer treatment. Among users, only 29% discussed the use of CAM with their doctors. Female gender, younger age, higher education, shorter disease duration and previous use of CAM were significantly associated with the use of CAM”(20)

"According to the Beirut Medical Center study in the United States, 41% of Americans were involved in CAM. Mostly "food supplements / special foods" were a major used CAM mode. Approximately 10% of respondents used CAM on an alternative base, 58% did not reveal their doctor of CAM use, and only 2% cited health professionals as influencing their choice of CAM. The result of the multiple logistic regression analyzes showed that the use of CAM was positively associated with the Lebanese nationality likewise paying for treatment out of pocket was negatively associated with unemployment and having other chronic diseases. " (21).

“Having in a study in Trinidad and Tobago indicates the prevalence of 39.1% cancer patients. By type, 39.6% were breast cancer, 44.4% were prostate cancer, 37% were ovarian cancer and 38.7% were colon cancer patients. Patients reported the together use

of more than one mode of CAM, without understanding its possible side-effects. Patients knew about CAM primarily through friends (69.3%) and family (69.3%). Most patients were generally satisfied (93.6%) and considered CAM useful (89.8%), but the majority never confronted their use of CAM to their doctors (78.8%). The study unit concluded CAM use was more common among women (68.6%), Indo-Trinidadians (63.5%), and patients aged 41–50 years (37.2%). CAM was used mainly because of a desire to try anything that might help (67.6%), followed by it is congruent with the patient's beliefs (59.1%). The perceived value of CAM included empowerment, control, cure, and improved quality of life. CAM use was associated with age, but no predictors of CAM use were identified."(17)

"Izmir University Hospital, Izmir, Turkey writes 22% of respondents consume CAM. 40% received CAM before or after and 60% received concomitant with CT .Similar to another related study there were no differences according to age, primary site, disease stage, marital status, number of children, and educational level between CAM users and non- users. Women, Rate of the low-income level were the strong predictors and herbal products (98%)were of most used. All patients take CAM daily by Oral route with some other root-preferred without proper knowledge and suggestion with clinicians in common. Two-third discontinued CAM but many patients answered that they could use the same CAM again. 33.8% of patients discontinued CAM due to the ending of CAM treatment plan, 29.0% discontinued due to cost, 20.9% discontinued due to warnings about side effects of CAM when used concomitant with CT by medical staff. 79% of the patients experienced no side effects of CAM yet a significant number experienced nausea and vomiting, diarrhea, Vaginal bleeding, renal failure, and fatigue. The belief of natural products strengthens their body, family members insistence, improve appetite, Conventional Treatment did not benefit and CAM as a supportive treatment were found as respondents response to CAM consumption ."(22)

2.3 Summary reviewed of literature

CAM covers a broad and diverse group of treatments and products that do not tend to be widely used by conventional healthcare professions. (7). Because surveys vary in terms

of definitions of CAM and of specific types of therapy included in questionnaires, the measurement of overall prevalence is a bit complex and its patterns across the nation vary. Cancer type, disease progression, fear of recurrence, race, physician dissatisfaction, co-morbidity, higher social status, being married, living in a city area, normal weight, and prior CAM use be significant factors for CAM use by cancer patients. The significance of having a higher income has not always been supported in Literature. Age is a significant factor, although evidence is contradictory. (23) Evidence links increased CAM use to cancer patients who are not satisfied by the initial oncology consultation and proffered options for conventional treatment. (23)

Delaying conventional care for the treatment of cancer, through choosing to use only CAM after a cancer diagnosis, can worsen patient outcomes. (24). A large amount of CAM studies have been done in the US or other western countries and CAM studies done outside of western countries have inconsistent results. There is indirect evidence for both positive and negative effects of herbal CAM use with chemotherapy; however, currently, there is not enough information available about herb-chemotherapy interactions to make definite recommendations. (25). Results so far published have shown that CAM can lead to improving the quality of life of cancer patients and their general well-being (16).

CHAPTER III
RESEARCH METHODOLOGY

3.1 Research design

Descriptive cross-sectional study design and quantitative approach were adopted to find out the utilization of CAM use among cancer patients.

3.2 Study setting/ Area and study population

3.2.1 Study setting

The study was conducted on cancer patients in Bhaktapur Cancer Hospital.BCH is a 110-bedded national level cancer hospital of Nepal that provides chemotherapy, radiotherapy, surgery, brachytherapy services including palliative care services every year around 5,000 cancer patients are treated in BCH(26). The survey was collected from deluxe, Annex, palliative, cabin, hematoma, daycare, surgical and chemotherapy wards from 2019/5/5 to 2019/5/16 at evening shift, Per day 18 respondents on alternate days were interviewed during the evening shift.

3.2.2 Study population

All adult cancer patients who were hospitalized at Bhaktapur Cancer Hospital between 2019/5/5 to 2019/5/16 (a total of 94 patients) were interviewed.

3.2.3 Inclusion Criteria

≥ 18 years of age

Hospitalized

Patients who were willing to participate in the study.

3.3 Sample size

The required sample size was 94

Population proportion (p) = 60 =0.6% (median prevalance from the study)

q= 1-P=1-0.5=0.4

Margin error (M.E) = 10% =0.1

Confidence interval (C.I)= Z=90% = 1.64

e = 0.05

N= 110

As we know that,

$$n_o = \frac{z^2pq}{e^2}$$

$$= \frac{(1.96)^2*0.6*0.4}{(0.05)^2}$$

= 368.79 (369)

$$n = \frac{N* n_o}{n_o + N-1}$$

$$= \frac{369 *110}{369+110-1}$$

$$= \frac{40590}{478}$$

= 84.91 (85)

Adding 10 % for nonresponse

=10% of 84.91 %

=8.291(9) =94 patients

3.4 Sampling technique

A nonprobability purposive sampling technique was used to select settings and samples.

3.5 Instrumentation

The semi-structured interview schedule was used for a duration of 15- 20 minutes. A total of 20 questions will be employed. The patient chart was used to see cancer type and stage. The questionnaire consisted of two parts

Part one included questions that ask information regarding the socio-demographic and including age, sex, marital status, educational level, employment status, residence, and characteristics of disease and treatment like cancer site (all cancer types), clinical stage, type of treatment (chemotherapy, surgery, or both) and duration since diagnosis

The second section of the questionnaire included queries assessing the utilization of CAM concerning its duration, source of information about CAM, discussion with physicians about CAM use and reason for alternative medicine, and patient's belief on CAM. (22)

3.5.1 Validity and Reliability

Validity and Reliability of the instrument were maintained by extensive literature review, consulting with the concerned teacher, subject experts, research experts, research guide, colleagues, linguistic professional, concerning paper and journal research.

Also questionnaire, originally written in English, was translated into the local language (Nepali) and back to English to ensure that the translated version gives the proper meaning.

The questionnaire was pretested on 10 cancer patients at the National Hospital and Cancer Research Centre before the real data collection that was excluded from the final study, and relevant modifications were instituted.

3.6 Ethical consideration

Approval was obtained from the concerned authority of the research committee of the Norvic institute of nursing education(NINE) and institutional ethical review board (IRB) of Norvic international hospital.

Ethical approval was taken from the Concerned authority of Bhaktapur Cancer hospital to conduct research.

Clarification about the study was given before, during, and after study.

Informed written consent was also obtained before conducting this study from each participant. Respondents' information obtained was kept confidential.

3.7 Plan for data collection

Approval from the research committee of NINE and IRB (Institutional Ethical Review Board) of Norvic international hospital was obtained. Then formal permission was taken from the concerned authority.

Informed written consent was taken from all respondents.

Data were collected by a self-administered semi-structured interview schedule.

3.8 Plan for data analysis

The final data collection tool was ensured for completeness, and responses were entered into and analyzed by the Statistical Package for the Social Sciences (SPSS) software version 20 for Windows.

Data were analyzed according to objectives, after analysis of data, the findings will be presented through tabulation.

Frequencies, percentages, and means were used to describe different variables.

The characteristics of CAM consumers and nonconsumers were compared by using Pearson's chi-square test with significance levels of less than .05 ($P < .05$).

CHAPTER IV
DATA ANALYSIS AND INTERPRETATION

Introduction

This chapter deals with an in-depth analysis and interpretation of the findings on the Utilization of Complementary and Alternative Medicine among Patients with Cancer at the Bhaktapur Cancer Hospital of Nepal. All the data were analyzed and interpreted based on the objectives of the study.

After analysis, obtained data were presented by using the table as follows:

Table 1Socio-demographic characteristics of Cancer Patients
Table 2Disease Variables of the patients
Table 3 Respondent characteristics of CAM users and non-CAM
Table 4Comparison of other variables between CAM users and non-users
Table 5 Utilization of CAM
Table 6 CAM use followed by cancer patients
Table 7 Concomitant use of CAM and its information to the clinician
Table 8 Believe about CAM benefits

Table 1: Socio-demographic characteristics of Cancer Patients

n=94

Variables	Frequency	Percent
Age		
18 – 33	10	10.6
34-48	43	45.7
49-63	22	23.4
64+	19	20.2
Mean age	47.25(13.71)	
Gender		
Male	38	40.4
Female	56	59.6
Religion		
Hindu	53	56.4
Buddhist	23	24.5
Muslim	3	3.2
Christianity	15	16.0
Marital status		
Married	84	89.4
Single	10	10.6
Employment status		
Employed	59	62.8
Unemployed	35	37.2
Education level		
No formal education	51	54.3
Primary education	19	20.2
Middle/high school	14	14.9
College/university	10	10.6
Income		
<10000	20	21.3
10000-30000	35	37.2
>30000	39	41.5

The demographic features of the whole study population are summarized in detail in Table 1. Out of 94 respondents, 45.7% of people were age between 34 to 48. Similarly,

more than half of the patients (59.6%), were females and the rest (40.4%) were males. Among all the respondents, 56.4% belonged to the Hindu religion which is highest among all other religions whereas only 3.2% of people were Muslim. Based on marital status, 89.4% of respondents were married and then 10.6% were single. Also (62.8%) were employed, more than half of the respondents had no formal education (54.3%) and (41.5%) had relatively high monthly household income >30000.

Table 2: Disease Variables of the patients

n=94

Variables	Frequency	Percent
Primary cancer sites		
Breast	11	11.7
Uterine	20	21.3
Lungs	12	12.8
Stomach	4	4.3
Esophagus	5	5.3
Leukemia	3	3.2
Colorectal	10	10.6
Cervix	10	10.6
Ovarian	4	4.3
Gallbladder	3	3.2
Pancreas	1	1.1
Thyroid gland	1	1.1
Liver	2	2.1
Mouth and oropharynx	7	7.4
Sarcoma	1	1.1
Stage of cancer		
I	6	6.4
II	23	24.5
III	36	38.3
IV	29	30.9
Duration of disease		
Less than 6 month	63	67.0
More than 6 month	31	33.0
***Conventional treatment**		
Surgery	35	37.2
Chemotherapy	72	76.6
Radiotherapy	63	67.0
Others	32	34.1

*Multiple responses possible. It may add up to more than 100 %.

Clinical characteristics of the survey respondents are presented in Table 2.Out of 94 patients, 20 patients (21.3%) were found to have uterine cancer which is the highest among all other types of cancer. Similarly, 12 patients (12.8%) were suffering from Lung cancer followed by Breast cancer (11.7%), Colorectal, and Cervix cancer were found (10.6 %) each. More than ($1/3^{rd}$) one-third of the cases were in stage III followed by stage IV with the Majority (67%) of respondents, duration of disease was less than 6 months. The majority (76.6%) of the respondents were receiving chemotherapy followed by Radiotherapy (67.0%), Surgery (37.2%), and other treatments (34.1%).

Table 3 Respondent characteristics of CAM users and non-CAM

n=94

Variables	CAM users (%) N = 58	CAM non users (%) N = 36	Chi-square 'P' value
Age			
18 – 33	5(8.7%)	5(13.9%)	0.56
34-48	32(55.2%)	11(30.5%)	
49-63	9(15.5%)	13(36.2%)	
64+	12(20.7%)	7(19.4%)	
Gender			
Male	12(20.7%)	26(72.2%)	<.001
Female	46(79.3%)	10(27.8%)	
Education level			
No education	32(55.2%)	19(52.7%)	.907
Primary education	11(18.9%)	8(22.2%)	
Middle/high school	8(13.8%)	6(16.7%)	
College/university	7(12.1%)	3(8.4%)	
Income			
<10000	12(20.7%)	8(22.2%)	.691
10000-30000	20(34.5%)	15(41.6%)	
>30000	26(44.8%)	13(36.2%)	

The above table depicts the number of patients who used CAM and who didn't use CAM based on the patient's demographics with corresponding Chi-Square. There were no differences according to age, educational level, income, between CAM users, and non-users. Of all socio-demographic variables tested, CAM usage was only associated with gender.

Table 4: Comparison of other variables between CAM users and non-users

n=94

Variables	CAM users (%) N = 58	CAM non users (%) N =36	Chi-square 'P'value
Type of cancer			
Breast	9(15.5%)	2(5.6%)	.032
Uterine	13(22.41%)	2(5.6%)	
Lungs	8(13.8%)	9(25%)	
Stomach	1(1.7%)	3(8.4%)	
Esophagus	4(6.9%)	1(2.7%)	
Leukemia	2(3.4%)	1(2.7%)	
Colorectal	6(10.35%)	4(11.1%)	
Cervix	6(10.35%)	4(11.1%)	
Ovarian	4(6.9%)	0	
Gallbladder	1(1.8%)	2(5.6%)	
Pancreas	1(1.8%)	0	
Thyroid gland	0	1(2.8%)	
Liver	0	2(5.6%)	
Mouth and oropharynx	3(5.2%)	4(11.1%)	
Sarcoma	0	1(2.7%)	
Stage of disease			
I	1(1.8%)	5(13.9%)	<.001
II	3(5.2%)	20(55.5)	
III	31(53.4%)	5(13.9%)	
IV	23(39.6%)	6(16.7%)	
Duration of disease			
less than 6 month	51(87.9%)	12(33..4%)	<.001
≥ 6 months	7(12.1)	24(66.6%)	
Prior use of CAM			
Yes	49(52.1%)	8(8.5%)	<.001
No	9(9.6%)	28(29.8%)	

Type of cancer, disease stage, duration of disease, and prior use of CAM was significantly associated with CAM use.

Table 5 Utilization of CAM

n=94

Variables	Frequency	Percent
Prior use of CAM		
Yes	57	60.6
No	37	39.4
Prevalence of CAM		
Yes	58	61.7
No	36	38.3

The given table presents the data regarding CAM use. Prior use of CAM for other problems was frequently as high as (60.6 %) in cancer patients. On the other hand, the prevalence of CAM use among entire respondents was (61.7%).

Table 6: CAM use followed by cancer patients

n =58

Variables		Frequency	Percent
***CAM modalities**			
Biologically active	Ayurveda	30	51.7
CAM	Homeopathy	10	17.2
	Yoga practice	8	13.8
Mind-Body	Massage	18	31.0
CAM	Meditation	4	6.9
	Spiritual therapy	20	34.5
Duration of CAM			
Less than 6 months		46	79.3
≥ 6 months		12	20.7
***Reason for CAM use**			
Dissatisfaction with physician		2	3.4
To cure the cancer		18	31.0
To boost the immune system		46	79.3
Relief from symptom		31	53.4
Easy accessibility and availability		37	63.8
***Source of Information**			
Conventional health care personnel		7	12.1
CAM practitioner		24	41.4
Friends		30	51.7
Family members		11	19.0
Religious group		24	41.4
Relatives		27	46.6
Mass media		25	43.1
Other Patents		16	27.6

*Multiple responses possible. It may add up to more than 100 %

Out of 58 respondents, more than half of the respondents used Ayurveda (51 %), whereas more than one-third of respondents used Spiritual therapy (34.50%) followed by

Massage(31%) as complementary/alternative medicine. The Majority (79.3%) of patients practice CAM for less than 6 months however only 12(20.7%) of them practice CAM for ≥ 6 months. Forty-six (79.3%) of the patients used CAM due to the belief of natural products boost their immune system, 37 of them (63.8%) use due to easy accessibility and availability,31 of them (53.4%) used CAM to get relief from symptoms. More than half of the respondents were informed by close friends (51.7%), in the same way (46.6%) were informed by relatives and also a significant no (41.4%) were referred by religious groups. On the whole, details are illustrated in table 6

Table 7 Concomitant use of CAM and its information to the clinician

n =58

Variables	Frequency	Percent
Concomitant use of CAM		
Yes	21	36.2
No	37	63.8
Information to clinician		
Yes	12	20.7
No	46	79.3

Twenty-one patients (36.2%) received CAM concomitant with treatments and 37(63.8%) of them received treatments/CAM alone. More than three quarters (79.3%) did not inform their clinician about the CAM they were using while only 12 (20.7%) inform their clinicians of its use.

Table 8 Believe about CAM benefits

n= 94

Variable	Frequency	Percent
Yes	37	39.4
No	32	34.0
Don’t know	25	26.6

The given table shows the beliefs of respondents on CAM benefits. Thirty-seven patients (39.4 %) thought CAM was beneficial and more than a third of them (34%) thought they are not beneficial while quarter respondents (26.6%) don’t know whether CAM benefited them or not.

CHAPTER V
DISCUSSION, CONCLUSION, RECOMMENDATION, AND DISSEMINATION

5.1 Discussion

The study was aimed to assess the Utilization of Complementary and Alternative Medicine among patients with cancer at the Bhaktapur Cancer Hospital of Nepal. Therefore the discussion had been done by focusing on the finding of analysis and interpretation of data.

This study showed cancer dominance among age between 34 to 48 (45.7%) nevertheless other similar study shows age variances, the Oncology Department of San Fernando General Hospital in Trinidad and Tobago showed cancer dominance among age above 60 (38.2%)(17) in different to Nigerian survey showed cancer supremacy among 26–33 age group (29.8%)(27).

Similarly in this study socio-demographic characteristics of participants show that the majority of patients with cancer (59.6%) were females which are supported by many of the literature conducted to date. A 2014 study of Nigeria on CAM utilization revealed, Of the 732 respondents interviewed, (62.8%)were females cancer patients (27), similarly Mongolia study in 2016 showed (61.2 %) (20).

Principally in this research, (56.4%) belonged to the Hindu religion which is highest among all other religions on the contrary Christianity was high among Nigeria (99.3%) (27). Also, Christianity was high (58.85 %) among the study respondents from the survey of the Oncology Department of San Fernando General Hospital in Trinidad and Tobago(17).

The literature review of CAM use among Nigeria found (58.7%) as married respondents (27) whereas in Ethiopia study it was (82.5 %)(28). Here out of 94 respondents, (89.4%) of respondents were married.

Additionally in the current study (62.8%) were employed unlike in the study of **D**.Erku, A. Mekuria, S. Belachew only (29.2%) were employed (28). Whereas in the M.Bahall study only (30.3%) were employed (17).

In this study, more than half of the respondents had no formal education (54.3%). In the study of D.Erku, A. Mekuria, S. Belachew majority (78.5%) had secondary level education (28). Also, M.Bahall's study in Trinidad and Tobago showed secondary school education was (43.4%)(17). Also, Arslan, C Guler, and Associate M study showed (0.3 %) had no formal education with the highest (53.5%) being at the elementary education. (22)

Furthermore, this study showed (41.5%) had relatively high monthly household income >30000. Unlike Arslan, C Guler, and Associate M study only 3% had more than >30000 monthly income (22) .D.Erku, A. Mekuria, S. Belachew, et al research showed an average income of <125 USD on high in (73.1%) respondents (28).

In this study out of 94 patients, 20 patients (21.3%) were found to have uterine cancer which is the highest among all other types of cancer. Similarly, 12 patients (12.8%) were suffering from Lung cancer followed by Breast cancer (11.7%). Whereas at turkey on Alternative medicine usage among solid tumor patients receiving chemotherapy survey colorectal (62.2%) and breast cancer (23.3%) was in common, besides gastrointestinal cancer (38%) was common in Mongolia study (20)

This study depicts that the majority (76.6%) of respondents were receiving chemotherapy followed by Radiotherapy (67.0%). Whereas at turkey on Alternative medicine usage among solid tumor patients receiving chemotherapy survey mass were receiving

chemotherapy n=289 (100 %) followed by surgery (85%) (22), also in Mongolia study (66.2%) were receiving chemotherapy (20)

Similarly in this research more than one-third of the cases were in advanced stage ie stage III(38.3%) followed by stage IV (30.9 %) is opposed to the study of Euthopia many(63.1%) were in the early stage and least (36.9%) were in the advance(28)

The duration of disease less than 6 months in this survey (n=94) was 63(67%) which is more similar to the study (66%) by C.Buckner, R. Lafrenie, J .Caswell et al. (20) but in the study of D. Erku, A. Mekuria, S. Belachew, it was just (41%)

Prior CAM use, Age, Sex, Marital status, education, income, Tumour Stage and its types have been significantly linked to CAM use as per the research conducted by Peter James Smith at the Sunshine Coast Cancer Care Service, Nambour Hospital, Queensland, Australia(4). Subsequently Gender, marital status, education level, and income had statistically significant relationships with the use of CAM among patients in Enugu Urban, Southeast Nigeria. However, in this study, five variables were identified as significant to CAM use: Gender, type of cancer, disease stage, duration of disease, and prior use of CAM.

In this study, prior use of CAM for treating other problems was (60.6 %) while in Mongolia it is just (48.1%)

The prevalence of CAM use found in this study of 94 cancer patients was (61.7 %). This is more similar to analysis on the Australian population which showed the utilization rate of 60% in study respondents"(4). Several such research is conducted internationally and the outcome is as high as (84.7%) and low as (39.1%).

The most common CAM modalities practiced by cancer patients in this study were Ayurveda (51.7 %), followed by Spiritual therapy (34.50%) after that Massage(31%) was most common furthermore many(79.3%) were practicing this for ≥ 6 months

duration. Indeed more similar trend was found on I.Okoronkwo, J. Onyia-Pat, P. Okpala et al study where (56%) patients use Biological products followed by Spiritual therapy (49.4%)(27). According to M Bahall, on Prevalence, patterns, and perceived value of complementary and alternative medicine among cancer patients (94.20%) respondents use medicinal herbs(17). C. Buckner, R. Lafrenie, J .Caswell et al founded that Products of animal origin (150 of 231 users, (64.9%) were the most popular modalities of CAM used for cancer-related outcomes followed by herbal medicine (32.9%)(20).

M.Bahall's study at San Fernando General Hospital, reported the most common reason for deciding to use CAM was the desire to try anything that could help (n = 96, 67.6%), followed by being consistent with their beliefs and their inner self (n = 81, 59.1%). The less common reason was that Conventional Medicine was too mechanistic and lacked the human touch (n = 12, 8.8%). (17). According to C.Buckner, R. Lafrenie, J .Caswell, et al, The higher probability of recovery (41.6%) was the most frequently reported reason for using CAM. The Utilization of CAM was also linked with boosting the immune system (35.5%)(20).On the contrary, in this research, the most popular reason for CAM use was to improve the immune system (79.3%), followed by its easy accessibility and availability (63.8%).

In the 2016 turkeys study, Patients were generally informed about CAM by advertisements on media devices (24%) and by their social circle(42%). One-fourth (24%) of the patients were informed about CAM by a doctor (22)although, In this survey, the major source of information was friends (51.7%), relatives(46.4%), and religious groups(41.4%). An important part of the data was (12.1%) of the respondents was informed by conventional health care personnel to use CAM.

A recent US survey revealed (60%) (45/75) of study respondents engaged in CAM use at the time of commencing treatment and only one patient experienced a side effect from CAM and this was weight loss through dietary modification. (4) but in the Nepalese survey, the least percentage (36.2%) of study respondents used CAM concomitant with treatments probably due to perceived side effects. Moreover, (63%) of US respondents

discussed with the doctors about CAM they are using unlike here in Nepal discloser rate was low as (20.7%)

Trinidad and Tobago research project in 2015 showed Patient beliefs on CAM benefits was (59.1%) (17). Interestingly I.Okoronkwo, J. Onyia-Pat, P. Okpala et al say (73.1 %) patients feel CAM as effective (27)while this study showed just (39.4%).

5.2 Limitations of the study

A limitation of the study was that all of the included studies were conducted using population samples of cancer patients attending, at a single site, Bhaktapur cancer hospital Nepal. The validity of results may not necessarily be reflective of other cancer centers and additional exterior multiple site studies encircling a broader population are necessary to verify the results.

Patients withhold information that they were embarrassed about

5.3 Dissemination

Norvic Institute Of Nursing Education Research (NINE) committee

Nepal Health Research Council

Research advisor

Bhaktapur Cancer Hospital, Nepal

Norvic Institute of Nursing Education Library

5.4 Implications

The study provides baseline data for the concerned authority. The study will be helpful for the future researcher to research the related topic in different settings and designs. This data will provide important information for clinicians as it emphasizes that their patients often use CAM. The study will also help identify the need for patient education, counseling including brochure development. Likewise, the finding of the study might be helpful for the future researcher for the literature review.

5.5 Recommendations

A large-scale study can be conducted on the outcome of CAM use in the cancer patient.

In this research, Ayurveda is used by (51.7%), therefore further research on its benefits and adverse effects will facilitate safety and efficacy to cancer patients.

On the other hand, (79.3%)patients were found to use CAM without information to clinicians, so the introductory course regarding Complementary and Alternative Medicine can be carried out in medical professionals to help both health care providers and patients to communicate about CAM use.

5.6 Conclusion

The present study is the former survey on Complementary and Alternative Medicine (CAM) of patients with cancer in Nepal which found a prevalence of 67% in 94 respondents. This finding confirms that Complementary and Alternative Medicine (CAM) is prevalent among Nepalese cancer patients furthermore it remains one of the principal primary health care resources, even for a severe disease like cancer. Further research on CAM efficacy should be carried out and based on its outcome CAM practices should be taken into consideration to aid in cancer prevention and treatment, and can be incorporated as integrative cancer management.

ACKNOWLEDGMENT

This thesis couldn't have been possible without the participation and assistance of so many people whose names may not all be enumerated. Their contributions are sincerely appreciated and gratefully acknowledged. However, I would like to express my deep appreciation and indebtedness particularly to the following: my college, research guide, research committee, Hospital Director, Doctors, Matron, and all the staff of Bhaktapur Cancer Hospital. I would also gratitude the librarian of my college for providing me necessary books. I am also grateful to my colleagues, seniors, and all those who have contributed to their valuable suggestions.

Above all, with most astonishingly I wish to acknowledge the hundreds of patients I have met over many years in my carrier. Their attraction to complementary and alternative medicine (CAM) compelled me to undertake this thesis practically as lots of information needed for this thesis, provided by them and their cooperation enhanced me to set my objectives and act upon information gained to make an academic contribution.

Thanking you
Sima Thapa
PBBN

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APPENDICES I

Informed Consent

INFORMED CONSENT FORM

Norvic Institute of Nursing Education, Chakrapath, Kathmandu

Purbanchal University

Namaskar, I am Sima Thapa, a third-year student of Post Basic Bachelor of Nursing from Norvic Institute of Nursing Education Maharajgunj Chakrapath. This study is being conducted for the partial fulfillment of the course objectives of PBBN 3rd year. The purpose of the study is to assess the utilization of complementary and alternative medicine among patients receiving cancer treatment at a selected cancer hospital

Participation in this study will be voluntary, I would like to assure you that your identity will not reveal anywhere and all the responses will be kept confidential and information given by you will be used for purpose of this study only. You are free to withdraw from the interview at any time or refuse to answer any particular question that you feel uncomfortable. I would appreciate if you participate in the study and answer all the question as the information provided by you would be very significant for this study.

I agree to participate in the study……..1

I do not agree to participate in the study……2

If you agree to participate in this study, please provide your signature or handprint in the below-mentioned place.

……

Signature of the respondent's researcher

Date:

Right	Left

APPENDICES I

Norvic Institute of Nursing Education

Chakrapath, Kathmandu

Please tick [√] the appropriate option or write an answer.

Part I (sociodemographic and clinical characteristics)			
S.N	Questions	Answers	**Code no**
1.	Age	☐ 18 – 33	
		☐ 34-48	
		☐ 49-63	
		☐ 64+	
2.	Gender	☐ Male ☐ female Other (specify):- ……..	
3.	Religion	☐ Hindu ☐ Muslim	
		☐ Buddhist ☐ Christianity	
		Other (specify)	
4.	Marital status	☐ Married ☐ single Other (specify):- ……..	
5.	Employment Status	☐ Employed ☐ Unemployed	
6.	Education level	☐ No education	
		☐ Primary education	
		☐ Middle/high school	
		☐ College/university	
7.	Monthly income of family	☐ <10000 ☐ 10000-30000 ☐ >30000	
8.	What is your diagnosis?		
9.	What is the stage of your Disease?	☐ I ☐ II ☐ III ☐ IV	
10.	What is your duration of	☐ less than 6 months	

	disease?	☐ ≥ 6 months		
11.	What is the treatment you are receiving?	☐ Surgery		
		☐ Chemotherapy		
		☐ Radiotherapy		
		Other (specify):-		
Part II (Use of complementary and alternative medicine)				
12.	Did you receive any complementary/alternative medicine for other comorbidities?	☐ Yes	☐ No	
13.	Did you receive any complementary/alternative medicine after the diagnosis of your disease?	☐ Yes	☐ No (skip to question 22)	
14.	Where did you get the information about CAM?	☐ Conventional health care personnel		
		☐ CAM practitioner		
		☐ Friends		
		☐ Family members		
		☐ Religious group		
		☐ Relatives		
		☐ Mass media		
		☐ Other Patents		
15.	What did you use as CAM?	☐ Acupressure		
		☐Ayurveda		
		☐ Acupuncture		
		☐ spiritual therapy as om Santi		
		☐ yoga practice		
		☐ Massage		

		☐ Meditation			
		☐ Homeopathy			
		Other (specify):-……..			
16.	How long have you used CAM?	☐ less than 6 months			
		☐ ≥ 6 months			
17.	Why did you use CAM?	☐ Dissatisfaction with a physician			
		☐ To cure the cancer			
		☐ To boost the immune system			
		☐ Relief from symptoms			
		☐ easy accessibility and availability			
		Other (specify):-……..			
18.	Did you use CAM concomitant with treatments?	☐ Yes	☐ No		
19.	Did you inform your physician about CAM you use?	☐ Yes	☐ No		
20.	Do you believe CAMs are beneficial?	☐ Yes	☐ No	☐ Don't Know	

APPENDICES III

Certificate of content validity

Norvic Institute of Nursing Education

Certificate of Content Validity

S.No	Name of Expert	Remarks	Signature
1.	Bibhav Adhikari (Asso. Prof)	Looks ok for pretesting	Adhikari
2.	Saroban Rayamajhi		
3	Poonam Dahal		2075/12/19
4	Rina Luitel (Nepali-teacher)		2075/12/19
5	Muna Shrestha		2075/12/20

APPENDICES IV

Approval Letter

Government of Nepal

Nepal Health Research Council (NHRC)

Estd. 1991

Ref. No.: 2539

3 May 2019

Ms. Sima Thapa
Principal Investigator
Norvic Institute of Nursing Education
Maharajgunj, Kathmandu

Ref: **Approval of thesis proposal** entitled **Utilization of complementary and alternative medicine among patients with cancer at Bhaktapur Cancer Hospital of Nepal**

Dear Ms. Thapa,

It is my pleasure to inform you that the above-mentioned proposal submitted on **17 April 2019** (**Reg. no. 231/2019**) has been approved by Nepal Health Research Council (NHRC) National Ethical Guidelines for Health Research in Nepal, Standard Operating Procedures Section 'C' point no. 6.3 through Expedited Review Procedures.

As per NHRC rules and regulations, the investigator has to strictly follow the protocol stipulated in the proposal. Any change in objective(s), problem statement, research question or hypothesis, methodology, implementation procedure, data management and budget that may be necessary in course of the implementation of the research proposal can only be made so and implemented after prior approval from this council. Thus, it is compulsory to submit the detail of such changes intended or desired with justification prior to actual change in the protocol. Expiration date of this proposal is **June 2019.**

If the researcher requires transfer of the bio samples to other countries, the investigator should apply to the NHRC for the permission. The researchers will not be allowed to ship any raw/crude human biomaterial outside the country; only extracted and amplified samples can be taken to labs outside of Nepal for further study, as per the protocol submitted and approved by the NHRC. The remaining samples of the lab should be destroyed as per standard operating procedure, the process documented, and the NHRC informed.

Further, the researchers are directed to strictly abide by the National Ethical Guidelines published by NHRC during the implementation of their research proposal and **submit progress report in between and full or summary report upon completion.**

As per your thesis proposal, the total research budget is **Self-Funded** and accordingly the processing fee amounts to **Rs 1,000.** It is acknowledged that the above-mentioned processing fee has been received at NHRC.

If you have any questions, please contact the Ethical Review M & E Section at NHRC.

Thanking you,

Prof. Dr. Anjani Kumar Jha
Executive Chairperson

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Nepal Cancer Relief Society
BHAKTAPUR CANCER HOSPITAL
in collaboration with
Government of Nepal
Rotary International and Local Community of Bhaktapur
Estd: 2051 B.S. (1995 A.D.)

Ref No.

May 21, 2019

To Whom It May Concern

It gives me pleasure to certify that **Ms. Sima Thapa**, student of PBBN 3rd year from Norvic Institute of Nursing Education had done her Research on the Topic "***Utilization of Complementary and Alternative Medicine among patients with Cancer at Bhaktapur Cancer Hospital of Nepal***" from 2076/01/22 to 2076/02/03.

I found her sincere, hardworking and dedicated towards the work and eager in knowing new things related to concerned matters.

I wish her every success in her future endeavors.

.....
Jagannath Bhurtel
Admin & Finance Controller

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