PAIN MANAGEMENT OF CANCER PATIENTS

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Introduction

Background

- Pain in cancer patients is the major symptom whether they are newly diagnosed or under chemotherapy or cancer survivor.
- As per the International Association for the Study of Pain (IASP), pain is an unpleasant sensory and emotional experience associated with, or resembling that associated with, actual or potential tissue damage.

- After comprehensive pain assessment pharmacological and non-pharmacological interventions are required.
- In the pharmacological intervention WHO has suggested the WHO 3 step analgesics ladder for the optimal pain management of cancer patients.
- In step 1 Non-opioids(mild pain), in step 2 weak opioids (mild to moderate pain), in step 3 strong opioids (moderate to severe pain) are used.

•European studies showed that 33% to 40% of patients who are cancer survivors (cured patients) suffer from chronic cancer related pain (12).

•Systematic reviews indicate pain prevalence ranging from 33% in curative treatment patients, to 59% in cancer treatment patients and 64% in metastatic, advanced, or terminal disease patients. After treatment with weak opioids only 76% of patients got managed from pain.(21)

•This percentage of prevalence of pain shows, pain is problem of the cancer patients either they are newly diagnosed or under chemotherapy or cancer survivor. This cancer related pain has challenged the quality of life of the cancer patients .

Objectives

General Objective

- To perform a prospective study on the approaches made for the management of cancer-related pain.

Specific Objectives

- To study the demography of cancer patients.
- To study the types and stages of cancer.
- To assess the severity of pain experienced by cancer patients
- To study drugs used for the pain management of cancer patients
- To identify non-pharmacological approaches used for the pain management of cancer patients.

Methods and Methodology

Study type: Prospective, observational, descriptive and quantitative study.

Study site: Bhaktapur Cancer Hospital located at Byasi, Bhaktapur, Nepal.

Sample size: 274

Duration of data collection: Data was collected for 5 months.

Tools and techniques for data collection:

The data for the study was collected through face to face interview using structured questionnaire with patients or patient's care taker and reviewing inpatient medical records of interviewed patients. Questionnaire was prepared by using National Comprehensive Cancer Network (NCCN) Guidelines and Brief Pain Inventory (BPI) as a reference for the pain assessment

Tools for data analysis Data collected as per questionnaire was coded on SPSS (26.0 version), and Excel (365). Descriptive statistics was used for interpretation of data.

Result and Discussion

In this study, 27% were under 60-69years of age group, and 24.1% of patients were under the age group of 50-59years , whereas, in **Khan GM et al.,** study, 39.02% of patients were under the age group of 50-60 years and 14.63% of patients were under 60-70years. In this study average age of patients was $58 \pm 14.94 years$ whereas, in **Ventafridda Vittorio, MD et.al**., study, the average age of patients encountered was $57.5 \pm 8.4 years$ (14). Here WHO study was carried out on adult patients whereas my study was carried out on all aged groups may be due to this reason, there was more deviation in my study.

Table no 1: Demographic distribution of cancer patients, n=274

Demographics	Frequency (%)
Sex	
Male	150 (55)
Female	124 (45)
Age Group	
10 to 19	3 (1.1)
20 to 29	11 (4)
30 to 39	16 (5.8)
40 to 49	34 (12.4)
50 to 59	66 (24.1)
60 to 69	74 (27.0)
70 to 79	53 (19.3)
80 to 89	17 (6.2)
Religion	
Hinduism	234 (85.4)
Buddhism	28 (10.2)
Islam	3 (1.1)
Kirat	4 (1.5)
Christianity	5 (1.8)

Cancer and its types

In this study, the percentage of Lung cancer was 27.7%, Head and Neck Cancer (mouth, throat, brain, tongue) was 20.8%, and Stomach cancer was 5.5% whereas in **Ventafridda Vittorio, MD et.al**., study in which the percentage of lung cancer was 23.3%, Head and Neck cancer was 19.6%, and Stomach cancer was 4.3%.

Here, 47.4% of patients had metastatic cancer, and 56.2% of patients were under chemotherapy whereas, in **Joseph, A et. al.,** study 14.1% of patients had metastatic cancer.

Table no. 2: Distribution of Cancer (n=274)

Cancer Type	Frequency (%)	Male	Female
Lung	76 (27.7%)	40	36
Head &Neck	57 (20.8%)	48	9
Ovarian	26 (9.5%)	-	26
Uterine	26 (9.5%)	-	26
Gall Bladder	19 (6.9%)	7	12
Rectum	17 (6.2%)	10	7
Breast	16 (6.2%)	0	17
Stomach	15 (5.5%)	6	9
Pancreas	15 (5.5%)	6	9
Large Intestinal	6 (2.2%)	2	4
Bone	6 (2.2%)	4	2
Skin	6 (2.2%)	5	1
Carcinoma of Unknown Primary (CUP)	6 (2.2%)	3	3
Hepatic	4 (1.5%)	1	3
Esophagus	4 (1.5%)	3	1
Urinary Bladder	3 (1.1%)	3	-
Prostate	2 (0.7%)	2	-
Renal	2 (0.7%)	1	1
Vaginal	2 (0.7%)	-	2
Penis	1 (0.4%)	1	-
Small Intestinal	1 (0.4%)	0	1

37.6% patients were unknown about their stages, and 62.4% were on different stages of cancer more patients were on 4th stage.

In this study, 80.3% patients had pain as a symptom at the time of diagnosis. And 97.4% patients suffered from pain due to the present diseases.

Table 3:- Stages of Cancer

S.No.	Stages of Cancer	Frequency	Percent
1	Unknown	103	37.6
2	Fourth stage	93	33.9
3	Third stage	43	15.7
4	Second stage	26	9.5
5	First stage	9	3.3
	Total	**274**	**100**

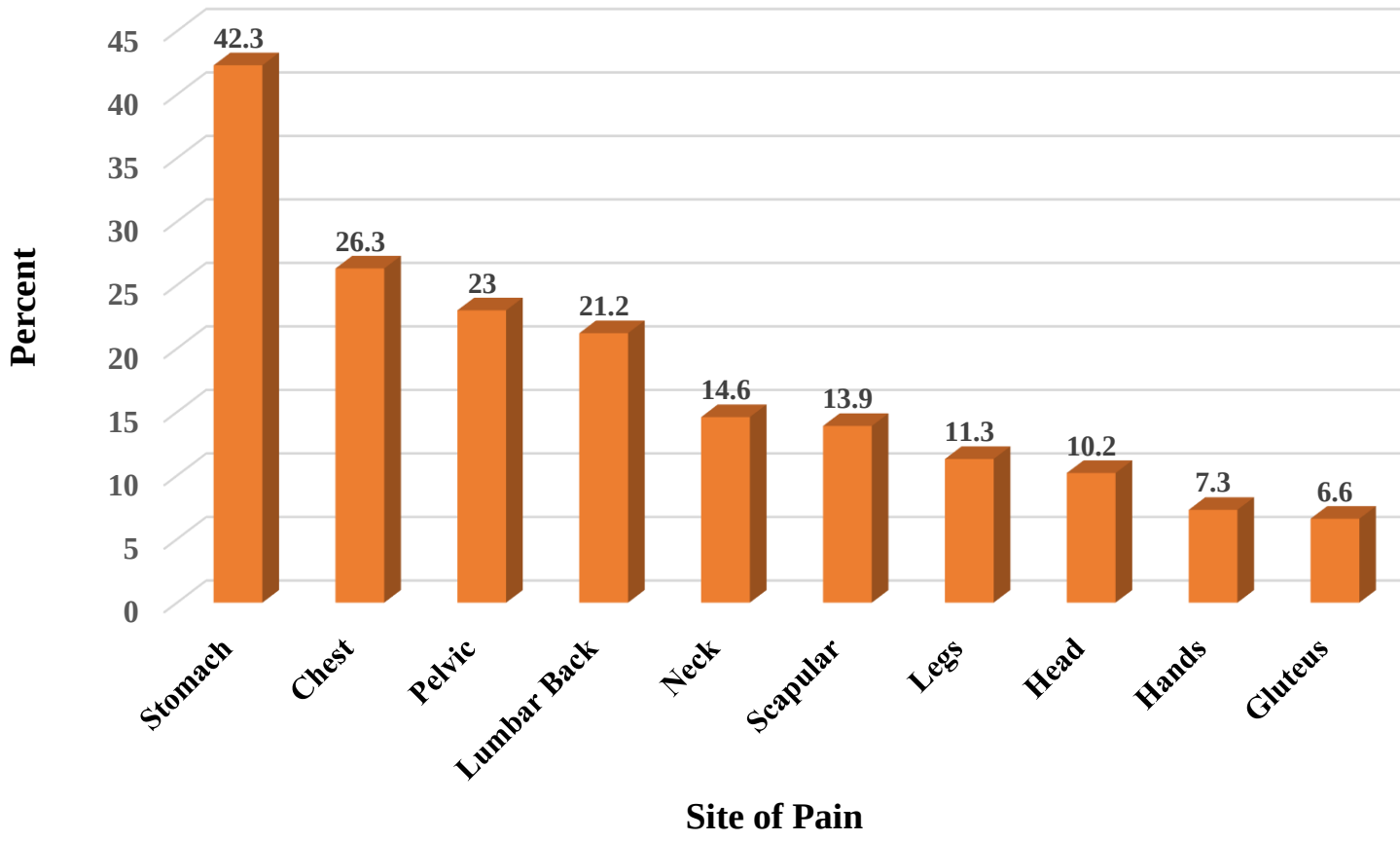

Figure 1: - Site of Pain

In this study, patients had multiple sites of pain, and found 26.3% of patients had the chest as a site of pain, and 42.3% of patients had stomach as a site of pain whereas in **Ventafridda Vittorio, MD et.al.,** study 45.2% of patients had the chest as a site of pain, and 27.2% at the Abdomen.

In cancer patients, cancer pain was not aggravated only by cancer. The pain was aggravated by many activities. Here 21.2% patients experienced pain while doing Everything, 15% experienced pain while Eating, 12.8% patients experienced pain while Walking

Table 4:- Pain Feels Worst

S.No.	Activities	Frequency	Percent
1	Walking	35	12.8
2	Sitting	20	7.3
3	Standing	12	4.4
4	Lifting	4	1.5
5	Breathing	34	12.4
6	Eating	41	15
7	Sleeping	32	11.7
8	Speaking	13	4.7
9	Coughing	10	3.6
10	Micturation	6	2.2
11	Defecation	9	3.3
12	Everything	58	21.2
	Total	**274**	**100**

Pain Assessment

The average worst pain score reported by patients was 7.5 ± 2.36 and the pain score after using medication was 3.05 ± 1.59. Conversely, In **Saxena et al.,(13)**study the mean score for worst pain experienced by patients was 6.7 ± 2.3, and the present pain score was 3 ± 2.6. Similarly, The mean score of interference in general activity was , mood , walking , normal work , relation with other , sleep , and enjoyment .

Table no. 5 : Score of Pain & interfered Items

Variable	Mean (SD)
Worst Pain	7.5 (2.36)
Least Pain	3.57 (2.42)
Average pain	5.97 (2.14)
Present pain	3.89 (2.38)
Pain after Medication	3.05 (1.59)
Interfered Items	
General Activity	8.89 (2.83)
Mood	7.63 (3.88)
Walking ability	5.9 (4.37)
Normal work	8.35 (3.48)
Relation with others	1.36 (3.32)
Sleeping ability	6.38 (4.05)
Enjoyment	7.46 (4.13)

In this study, before using pain medication, about 64.9% of patients had severe pain, 28.2% had moderate pain, and 6.9% of patients had mild pain. And after the intervention of pain medication, 4.4% of patients had severe pain, 23.7% of patients had moderate pain, 67.9% of patients had mild pain, and only 4% of patients had no pain whereas In **Mishra S. et. al.,** study, before using pain medication, around 70% of patients had severe pain, 20% of patients had moderate pain, and 10% of patients had mild pain. After using pain medication, 53.2% of patients had no pain, 41.9% of patients had mild pain, and only 4.9% of patients had moderate pain.

Table no 6: Distribution of severity of pain

Severity of Pain	Frequency (%)
Worst pain in last 7 days	
Mild Pain	19 (6.9)
Moderate Pain	77 (28.2)
Severe Pain	178 (64.9)
Pain After Medication	
No Pain	11 (4)
Mild Pain	186 (67.9)
Moderate Pain	65 (23.7)
Severe Pain	12 (4.4)

Treatment and Management of Pain

Cancer pain, at Bhaktapur Cancer Hospital, has been managed by using the WHO analgesics ladder. The WHO analgesics ladder used at Bhaktapur Cancer Hospital has four steps. In Step 1 Non-Opioids (NSAIDs), in Step 2 weak Opioids, In Step 3 strong Opioids, & in step 4 Adjuvants drugs were along with other steps.

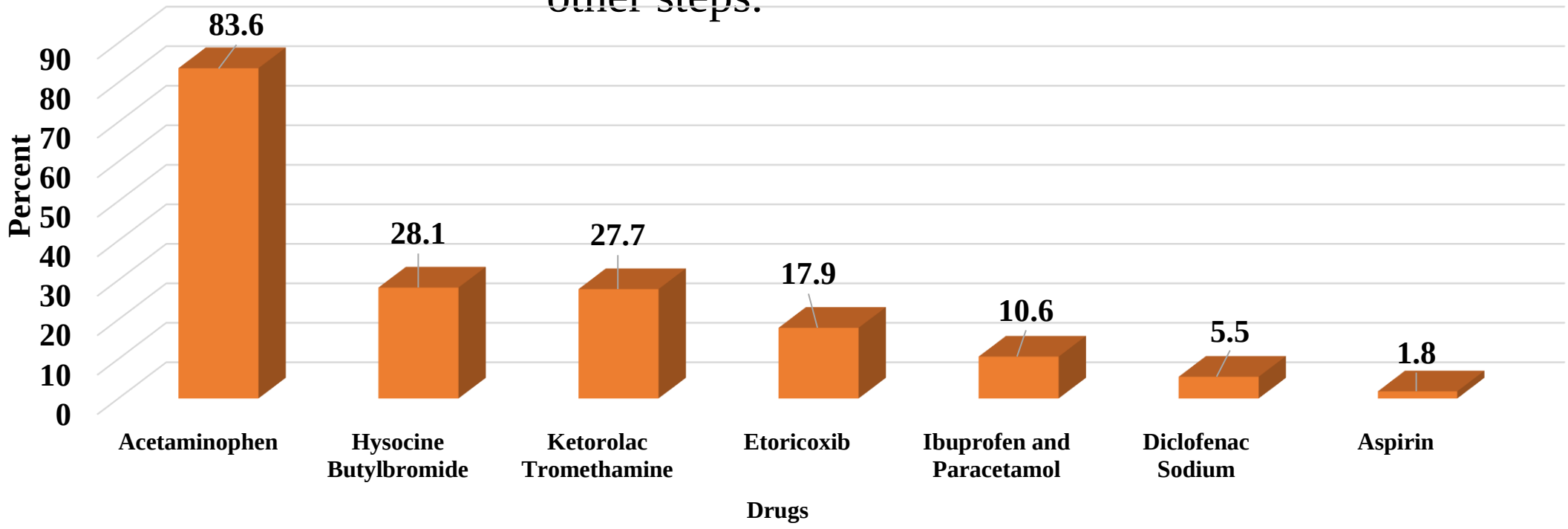

Figure 2:- Step 1 Non-Opioids

According to the study conducted by **Keskinbora Kader et. al.,**(23)in the WHO treating group, 59.45% of patients received Tramadol Hydrochloride. In comparison, this study found that 66.8% of patients were prescribed Tramadol Hydrochloride.

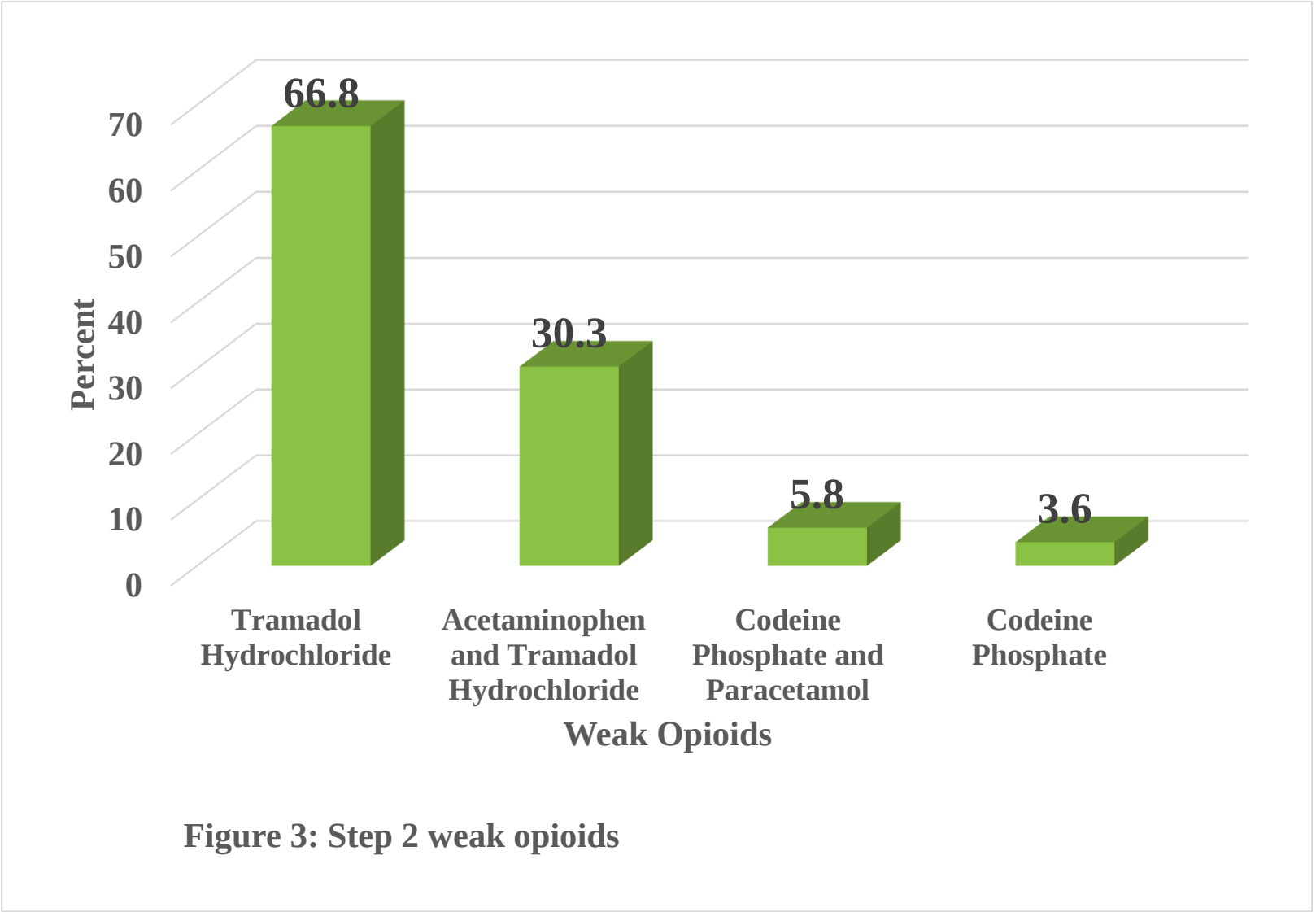

Figure 3: Step 2 weak opioids

In this study and 29.2% of patients were administered morphine sulphate in both oral & parenteral mediums and 12.4% of patients were administered Fentanyl Citrate whereas in **Nigerian Study** and 6.4% of patients were given Morphine and in **Keskinbora Kader et. al.,** and 8.1% of patients in the WHO treating group were administered Fentanyl citrate.

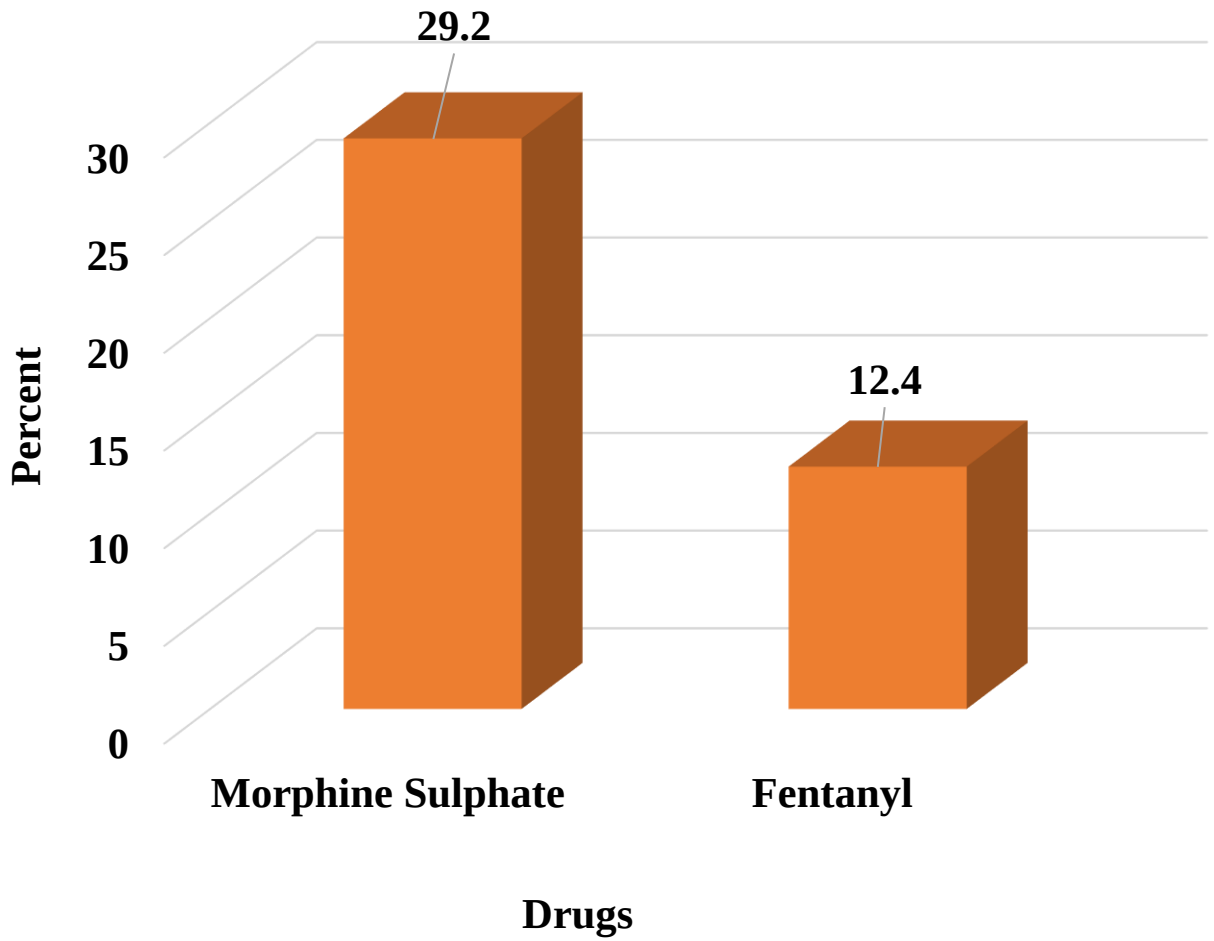

Figure 4:- Step3: Strong Opioids

In this study, only 77% of patients were on Dexamethasone, 26.6% of patients were on Gabapentin, whereas in **Mishra S et.al.,** study, 29.9% of patients with Gabapentin, and 20.2% of patients with Dexamethasone.

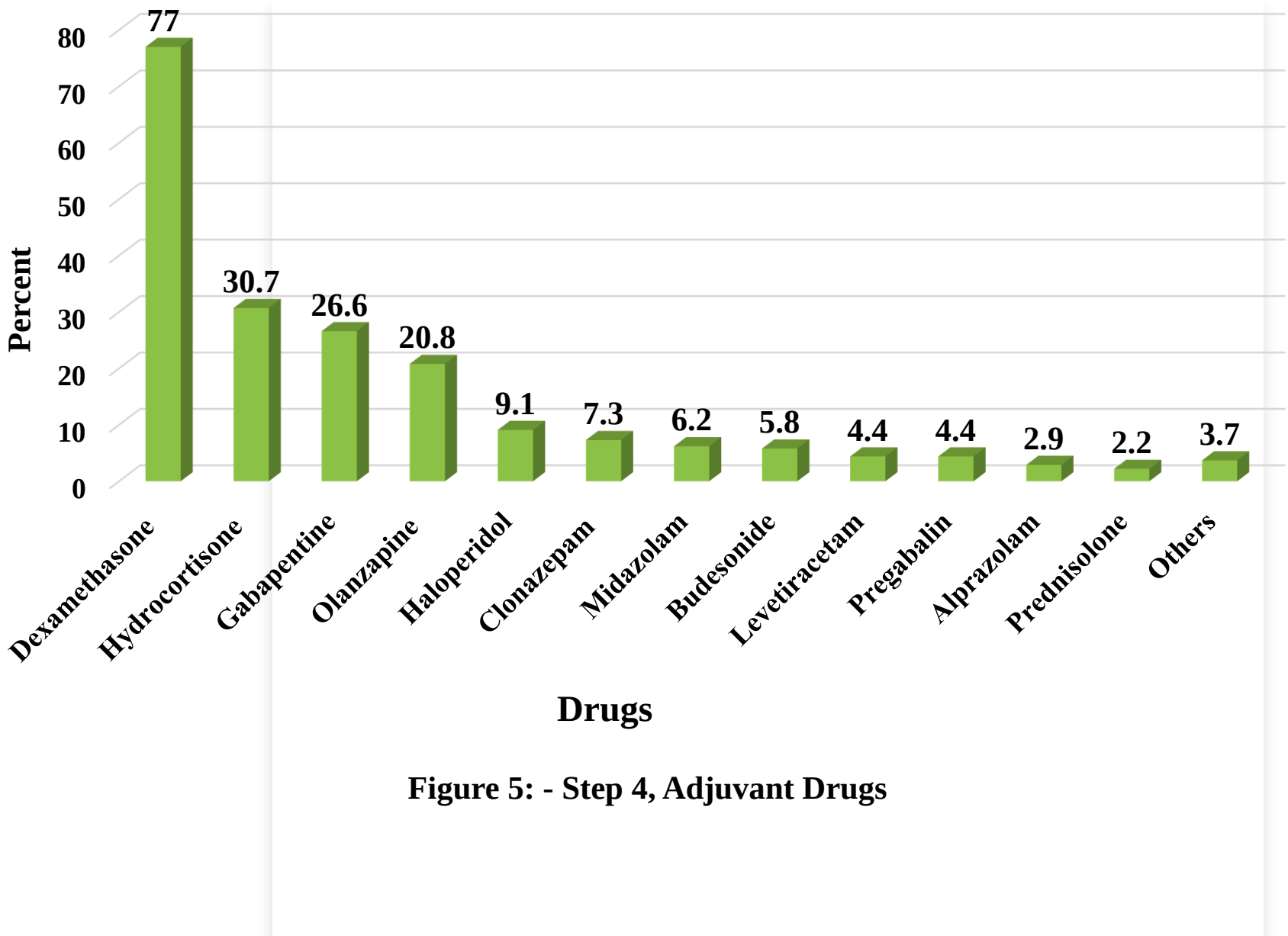

Figure 5: - Step 4, Adjuvant Drugs

Table no. 7: Descriptive Statistics of Drugs per day dose (mg)

Drugs Name	Mean ±SD
Non-Opioids	
Paracetamol	2577.51 ±975.99
Ketorolac Triomethaine	51.58±28.85
Etoricoxib	83.27±26.88
Ibuprofen and Paracetamol	2175±0
Hyoscine Butyl bromide	40±21.27
Aspirin	90±33.54
Dicelofenac sodium	81.67±31.99
Weak Opioids	
Tramadol Hydrochloride	132.51±52.62
Acetaminophen and Tramadol Hydrochloride	1048.19±219.35
Codeine Phosphate	42±6.32
Paracetamol and Codeine Phosphate	1529.38± 373.37
Strong Opioids	
Morphine Sulphate	27.39± 25.99
Fentanyl Citrate	0.31±0.43
Adjuvants	
Gabapentine	245.9459±176.87
Dexamethasone	9.2085±5.16

In this study, to manage the pain of cancer patients an average dose of ***Tramadol was*** $\mathbf{132.51 \pm 52.62\ mg/day}$ and an average dose of ***Morphine sulfate was*** $\mathbf{27.39 \pm 25.99\ mg/day}$ was administered to patients.

In **Grond Stefan et. al.,** to manage the pain of patients, an average dose of ***Tramadol was*** $\mathbf{428 \pm 101 mg/day}$ and an average dose of ***Morphine was*** $\mathbf{42 \pm 3 mg/day}$was administered. . In a similar article, an average dose of Codeine Phosphate was $132.5 \pm 32.5 mg/day$ whereas, in this study, an average dose of Codeine Phosphate was $42 \pm 6.32 mg/day$

In this study, an average dose of ***Fentanyl Citrate was*** $\mathbf{47.2 \pm 25 mcg/hr}$whereas, In a study carried out by **Marinangeli Franco et. al.,**an average dose of ***Fentanyl Citrate was*** $\mathbf{50 \pm 23.1 mcg/hr}$ in the group who were treated by using the WHO analgesics ladder.

25/11/2024

At Bhaktapur Cancer Hospital, only the palliative ward used Non-pharmacological methods to support the pain treatment process. 16.8% of patients were under Music therapy and 14.2% of patients were under warm compression. Hypnosis, cold compression, relaxation, distraction, and Massage were also used as the Non-Pharmacological methods.

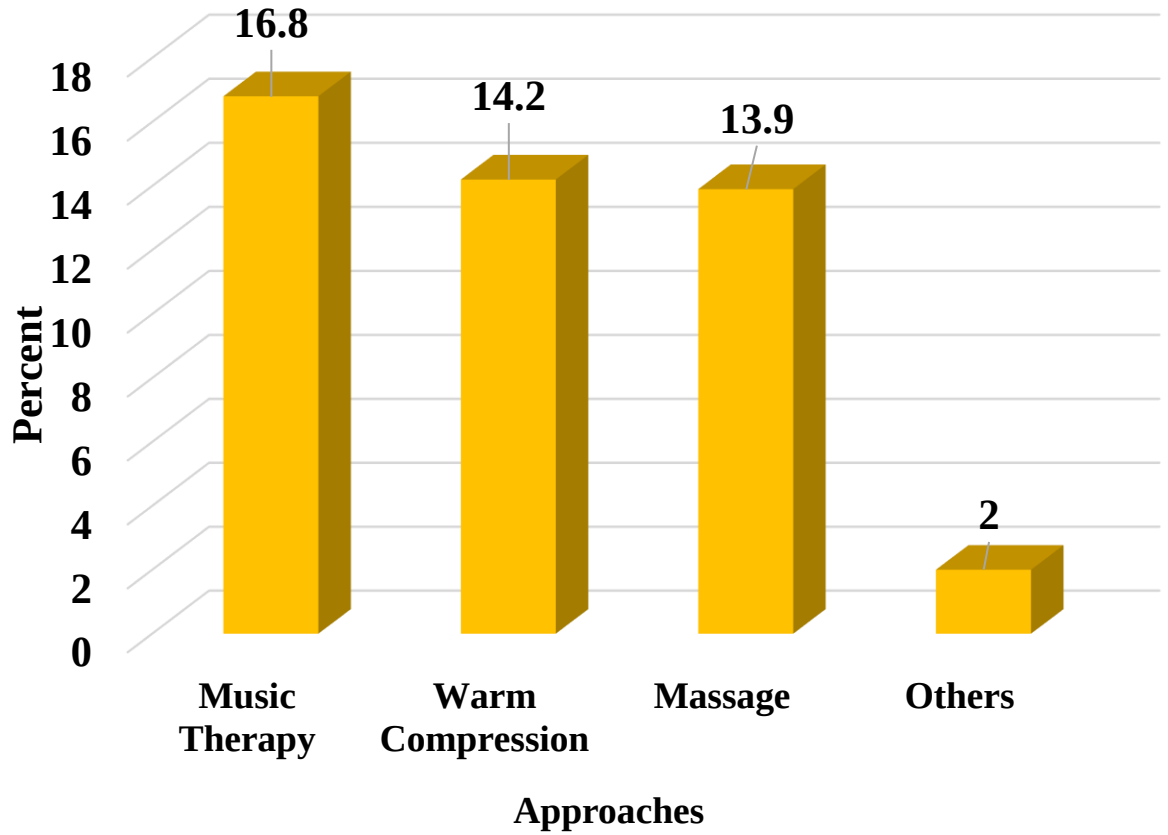

Figure 7:- Non-Pharmacological Approaches

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Thank You