

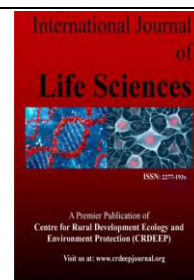
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Full Length Research Paper

Assessment of Factors influencing *Morphine* use on Cancer Pain Relief in Adult Cancer patients in Kakamega county General Hospital, Kenya-Africa

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ABSTRACT

The experience of pain is widely accepted as a major threat to quality of life, and the relief of pain has emerged as a priority to oncology care. Although morphine and other opioids is the mainstay of cancer pain management, patients still suffer from moderate to severe pain. This paper investigated the factors influencing morphine use on cancer pain relief in adult cancer patients in Kakamega county referral hospital, Kenya – Africa in the year to 2017. The study used a cross-sectional research design. Target population was 295 which included medical doctors, nurses and clinical officers working at the Kakamega County General Hospital. It adopted Yamane's formula and came up with 170 as the sample size of the respondents. Focused group discussion and questionnaires were employed to collect data. Findings revealed that prescribers of morphine face challenges and FGD indicated that health care providers sometimes create barriers to effective pain management. Time constraints and insufficient knowledge regarding pain management of medical professionals were the most commonly encountered barriers to effective pain management for physicians, clinical officers and nurses. The conclusion was that on the use morphine to control cancer pain amongst adults, the following factors were considered; the dose and length of time allowed by a single prescription, challenges faced when prescribing morphine, morphine only being sold to institutions that have at least a medical officer and actual cost of morphine.

Introduction

Pain is a common experience of cancer. A third of patients with cancer present with pain at the time of diagnosis, and approximately two-thirds of patients with advanced cancer experience pain (Chade, 2015). Morphine is an essential medicine for the treatment of pain that should be available to all people who need it (WHO, 2011). Morphine is currently the gold standard of analgesics used to relieve severe pain and suffering. It is commonly used to treat cancer pain (Koodie, 2010). It is the oldest drug in the class of opioids and is still generally considered to be the gold standard. Many other opioids are comparable to morphine in terms of analgesia and also adverse effects (Caraceni, 2012). Oral morphine was first recommended in England in the 1950s for the treatment of cancer pain. This was often in the form of the so-called 'Brompton cocktail' containing cocaine and alcohol in addition to morphine ordiamorphine. Treatment moved towards oral morphine alone as it demonstrated effective pain

relief without the side effects linked to the 'cocktail'. Following the publication of WHO guidelines in the mid-1980s, the oral administration of aqueous morphine solution every four hours by the clock became commonplace for moderate to severe cancer pain (WHO, 2011).

Pain is widely accepted as one of the most important determinants of quality of life (Mwangi, 2013). Health care providers play a unique role in pain management and poor knowledge base can create a barrier for them to be able to provide optimal pain management. Without adequate knowledge level and correct attitudes towards pain management, effective pain management will be hindered and this will retain the suffering of patients. Findings of this study will help in creating awareness of availability of morphine and demonstrate need for more emphasis on pain management. It will also guide in safe prescriptions of opioids in management of cancer pain. The main objective of this study was to

determine factors influencing morphine use in cancer pain relief in adult cancer patients in Kakamega County General Hospital, Kenya.

Review of Literature

This part sought to assess past literature on the factors influencing morphine use on cancer pain relief in adult cancer patients. The areas that it concentrated on are legal and regulatory restrictions, drug availability and accessibility, cost of morphine among others.

Legal and Regulatory Restrictions

Legal and regulatory restrictions impede clinicians' ability to prescribe and dispense pain medicines (Lynch, Connor et al. 2014). In Central Asia, Kyrgyzstan, injectable morphine is only accessible to patients with stage four cancer disease and the prescription amount and duration is limited to 20 vials of morphine for ten days and regulated to a maximum of 300 vials per year (O'Brien, Mwangi-Powell et al. 2013). Across all regions, there are limitations on the types of hospitals or wards where opioids can be administered, the dose and length of time allowed by a single prescription and which clinician can prescribe opioids (Thiadens, Vervat et al. 2011).

There is a special licensing requirement for procurement, distribution and sale of opioids. It requires an extra permit, separate from other medicines. It can only be sold to institutions that have at least a medical officer (WHO 2011). This locks out smaller institutions from stocking opioids leading to distributors shying away from these complexities.

In Kenya, the legal provisions governing use of opioids are found in Cap 245 of the laws of Kenya. It gives the conditions for handling of opioids, trade, import, export, preparation, manufacture and dispensing. It also defines offences related to handling opioids and sentences thereof. Persons handling or keeping such must carefully record and account for each of the opioid dispensed or sold to a different party. These records are subject to audit and discrepancies may result in stiff penalties (Human rights watch, 2016). Such laws prohibit keeping of opioids and stifle use of extra opioids needed. This creates fear and general apathy towards opioids.

Drug Availability and Accessibility

In many countries, strong opioids such as morphine are severely restricted, if available at all. This leaves many people with cancer at risk of severe life-limiting pain. Morphine has long been considered the preferred choice of opioid. It is widely, though still not universally, available across the world, is comparatively inexpensive, and is effective orally. It is listed in the WHO essential medicines list (WHO 2011). Patients who suffer pain have a right to access essential medicines including morphine and this requires that limits on which healthcare workers can prescribe opioids be no more restrictive than is reasonably necessary to prevent their diversion to misuse (Hanna and Kangolle 2010). Under international human rights law, countries are obliged to ensure the availability and accessibility of essential medications like morphine but this is yet to be realized on the ground (Hanna and Kangolle 2010). But WHO has observed that the right to impose additional requirements must be

continually balanced against the responsibility to ensure opioid availability for medical purposes (WHO 2011).

Prescription Limitations

World Health Organization recommends that decisions concerning the type of drug to be used, the amount of the prescription and the duration of therapy are best made by medical professionals on the basis of the individual needs of each patient, not by regulation (WHO, 2009). Yet, many countries have regulations that unnecessarily constrict these medical decisions, in violation of patients' right to the highest attainable standard of health. Prescribers of morphine face challenges like for example, the Philippines require doctors applying for a license to submit urine for drug tests. In Ukraine, doctors must obtain certificates from the police department and drug treatment clinic (WPCA, 2014). Nurse-prescribing is essential in resource-limited settings where doctor-patient ratios are very low and many people never see a doctor in their lifetime (WPCA, 2014).

Cost of Morphine

The actual cost of morphine is much higher in many countries due to a variety of factors that drive up the price, including government regulation, licensing and taxation, poor distribution systems, low demand, large overhead of local production, and price regulation by some industrialized governments (Korir, Wambani et al. 2013). Those who are aware of the value and do seek access have little government subsidization, inflated costs for medicines at the point of sale, and strict limits on the dosage of medicine provided regardless of patient pain levels (Lynch, Connor et al. 2014). These are among the many discouraging challenges faced by millions of cancer patients seeking adequate access to affordable pain relief for themselves or their loved ones.

Unfounded fears associated with morphine

Morphine has long been feared by both the general public and physicians (Lasagna, 2015). Many patients develop adverse effects such as constipation, nausea/vomiting, urinary retention, pruritus and central nervous system (CNS) toxicity (drowsiness, cognitive impairment, confusion, hallucinations, myoclonic jerks and—rarely—opioid-induced hyperalgesia/allodynia) (Ripamonti et al. 2012). Sometimes, the reduction of the opioid dose may reduce the incidence and/or severity of adverse events. Underlying the fear is the mistaken belief that the problems associated with abuse of opioids are inextricably linked to therapeutic use. Concerns about addiction, excessive sedation, and respiratory depression have resulted in widespread avoidance or under-dosing. Yet extensive, carefully documented clinical experience has shown that these fears are unfounded (McQuay, 2011). Regular doses of morphine may be indicated and safely instituted early in the course of a patient's illness and continued for many months. Patients treated with morphine whose pain ameliorates can reduce the dose and discontinue it without difficulty. Daytime drowsiness, dizziness or mental clouding commonly occur at the start of treatment but resolve when patients are stabilized (usually within a few days). For most patients receiving stable doses of morphine effects on cognitive and psychomotor function are minimal. In particular, there are data indicating that patients' driving ability is not significantly impaired, in

alert patients receiving a stable dose (Vainio et al, 2015). The main continuing adverse effect from morphine is constipation, and the prophylactic use of a laxative is almost always required.

carried out in Kakamega County General Hospital, Kakamega County, Kenya-Africa. This is a former Western Provincial referral hospital. The hospital still receives cancer patients from neighboring counties for management.

Research design and methodology

The study used a cross-sectional research design. Cross-sectional study involves looking at people who differ on one key characteristic at one specific point in time. The study was

Target population included physicians (medical officers), nurses and clinical officers working at the Kakamega County General Hospital as depicted in table 1.

Table 1. Target Population

Specialty	Number
Physicians (MO)	32
Nurses	225
Clinical Officers	38
Total	295

Source: KCGH Data (2017)

The researcher adopted Yamane, (1967:886) formula that can be used to calculate a suitable sample size for the study:

$$n = \frac{N}{1 + Ne^2}$$

Where n = Minimum Sample Size; N = population size: - e = precision set at 95 % (5%=0.05)
 295 (Study population) x 0.5 = n = 295 / (1 + 295(0.0025))
 n = 169.78 ≈ 170

Sample size for the respondents = 170

The desired sample size therefore comprised of 170 respondents. A sample size of 170 respondents was chosen for the study. The study employed stratified sampling and simple random sampling to select respondents. The study therefore sampled 130 nurses, 18 physicians and 22 clinical officers. The study employed focused group discussion and questionnaires to collect data.

Kakamega county General hospital. Both the descriptive and inferential statistics were used in the study. The descriptive statistics that were used include the frequency distributions, mean and standard deviations. In the context of the inferential statistics; multiple logistic regressions and multiple regressions was used in the study.

Response Rate

The study sampled 170 respondents and managed to collect data from 139 respondents including medical officers, nurses and clinical officers. This represented 81.76% response rate. This response rate is deemed sufficient by Kombo & Tromp (2006). Therefore, 81.76% of the distributed questionnaires were analyzed. The response rate of the study was therefore considered adequate enough to avail the information on the determinants of morphine use by health care providers to relief pain in adults with cancer in Kakamega County General Hospital. The distribution of the sampling units is as shown in Table 2 below.

Data results

Introduction

The study sought to investigate the factors influencing morphine use on cancer pain relief in adult cancer patients in

Table 2: Response Rate

Professional Discipline	Administered	Returned	Percentage
Medical Officer	18	16	88.89
Clinical Officer	22	13	59.1
Nurse	130	110	84.62
Total	170	139	81.76

Source: Field Data (2017)

Demographic information of the Respondents

The study sought to establish the demographic information of the respondents including their age, years of experience, gender; professional discipline, rank of nurses, level of

education, practise setting and the department worked. The study results were presented in table 3;

Table 3: Age and Years of Experience

Age Brackets	Frequency	Percent
Below 25 Years	39	28.2
26-35 Years	68	48.7
36-45 Years	18	12.8

46-55 Years	14	10.3
Total	139	100
Years of Experience	Frequency	Percent
Less than 1 Year	16	11.5
2-5 Years	96	69.2
6-10 Years	9	6.4
Over 10 Years	18	12.8
Total	139	100

Source: Field Data (2017)

The study results on the age brackets of the respondents indicated that 28.3% were aged below 25 years; 48.7% were aged 26-35 years; 12.8% were aged between 36-45 years whereas 10.3% were aged between 46-55 years. This shows that majority of the respondents were aged between 26-35 years.

The study results on the years of experience indicated that 11.5% had worked for less than 1 year; 69.2% of the respondents had worked for between 2-5 years; 6.4% had worked for between 6-10 years while 12.8% of the respondents had worked for over 10 years. This implies that most of the respondents had worked for between 2-5 years and this could be interpreted to mean that they had not been out of college for long and considerable years of experience in the medical field and therefore gave a true and fair view of the study objectives.

Data analysis

Factors influencing morphine use in cancer pain relief

The objective of the study was to determine factors influencing morphine use in cancer pain relief in adult cancer

patients in Kakamega County referral Hospital. The objective answered what are the factors influencing morphine use in controlling pain in adult cancer patients. The results for objective present the descriptive analysis of the variables followed by the multinomial regression models to determine which factors are significant in influencing morphine use in controlling pain in adult cancer patients. The models were adjusted using practice setting, course on pain management and frequency of caring cancer patients

Descriptive Analysis of Knowledge of health care providers regarding morphine use

The participants were given eight statements on factors influencing morphine use on a Likert scale type from which they responded to determine factors influencing morphine use in cancer pain relief. Participants were asked to rate their agreement on these eight factors by completing a 5-level agreement continuum ranging from 1 (strongly disagree) to 5 (strongly agree). The study results were presented in Table 4.

Table 4: Factors influencing morphine use in cancer pain relief

Statements		SD	D	U	A	SA	Total	Mean	Std Dev
Legal and regulatory restrictions impede clinicians' ability to prescribe and dispense morphine	F	7	12	22	59	39	139	3.80	-1.047
	%	5	8.6	15.8	42.4	28.1	100	76.0	
The limitations on the types of hospitals or wards where opioids can be administered	F	7	15	20	55	42	139	3.79	-1.074
	%	5	10.8	14.4	39.6	30.2	100	75.8	
The dose and length of time allowed by a single prescription and which clinician can prescribe opioids	F	0	3	19	86	31	139	4.04	-0.342
	%	0	2.2	13.7	61.9	22.3	100	80.8	
The fact that morphine can only be sold to institutions that have at least a medical officer	F	7	11	24	39	58	139	3.93	-0.346
	%	5	7.9	17.3	28.1	41.7	100	78.6	
Patients suffer no access to essential medicines including morphine	F	0	3	21	60	55	139	4.18	-0.591
	%	0	2.2	15.1	43.2	39.6	100	82.6	
Availability and accessibility of essential medications like morphine	F	7	7	16	58	51	139	4.00	-0.577
	%	5	5	11.5	41.7	36.7	100	80.0	
Prescribers of morphine face challenges	F	0	0	5	47	87	139	4.15	-0.404
	%	0	0	3.6	33.8	62.6	100	83.0	
The actual cost of morphine influences morphine use in cancer pain relief	F	7	7	12	47	66	139	4.14	-0.010
	%	5	5	8.6	33.8	47.5	100	82.8	

Source: Field Data (2017)

From the above results, the standard deviation results show that the data was within a considerable range of between -2 and +2 implying that the data proved normal univariate distribution. The study findings informed that 76.0% (mean=3.80) legal and regulatory restrictions impede

clinicians' ability to prescribe and dispense morphine, 75.8% (mean=3.79) were of the view that the limitations on the types of hospitals or wards where opioids can be administered was a barrier to use, 80.8% (mean=4.04) were of the view that the dose and length of time allowed by a single prescription and which clinician can prescribe opioids was a negative factor,

78.6% (mean=3.93) informed w that the fact that morphine can only be sold to institutions that have at least a medical officer was a negative factor, 82.6% (mean=4.18) observed that patients do not have access to essential medicines including morphine, 80.0% (mean=4.00) informed that the availability and accessibility of essential medications like morphine was a barrier, 83.0% (mean=4.15) accepted that prescribers of morphine face challenges, 82.8% (mean=4.14) agreed that the actual cost of morphine influences morphine use in cancer pain relief.

The results of the FGD indicated that physicians and nurses often create barriers to effective pain management. Family members and caregivers of cancer patients can also pose significant barriers to effective pain management, especially if the patient is no longer able to personally tend to his or her needs.

Fear of addiction, side effects like respiratory distress, constipation and sedation came up from all the health care workers. Access and availability of morphine, time constraints and insufficient knowledge regarding pain management were some of the encountered barriers to morphine use. Interestingly, physicians, COs and nurses aired different perceptions why they don't usually prescribe or administer morphine. Physicians perceived that "they do not usually assess pain as they do the disease" Cos felt its "patient's reluctance to take opioid" that affects their

prescription, while nurses perceived the "patient underreporting pain" was the main factor. Physicians demonstrated a good understanding of cancer pain and its management but seldom did assess for it. COs left the role of assessment to nurses and opioid prescription to physicians, while nurses performed better in pain assessment and documentation practices but failed to dispense morphine effectively. Although time constraints were perceived more frequently as a barrier to cancer pain management, physicians owned to not always assessing pain. Cos perceived patients' reluctance to take opioids as a barrier, more so than nurses, while nurses deemed patients' underreporting of pain as a barrier to pain control, more than physicians. The findings in this study indicate that changes in the educational strategy are required to enhance clinical practice among healthcare professionals in relation to cancer pain management.

Regarding the knowledge and use of morphine, the following were observed; most HCPs understood the principles of pain management and had adequate knowledge in pain management but did not put it to practice citing time constraint. They also did know how to do a comprehensive pain management among adult cancer patients and that they understood the signs of cancer pain according to available clinical guidelines on patient pain management. However, the factors cited in this study above barred them from practicing. The HCPs conducted intensive and careful patient interviews before administration of morphine to relief pain.

Table 5: Relationship between Education Level and Morphine use

Pearson correlation Tests			
	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	88.882 ^a	2	0.001
Likelihood Ratio	84.435	2	0.000
Linear-by-Linear Association	60.053	1	0.098
N of Valid Cases	139		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 6.88.

Source: Field Data (2017)

The study findings indicated that there was a significant relationship between education level of the HCPs and morphine use (p=0.001). Health care providers with higher

educational level have better understanding of cancer pain and morphine use for pain relief.

Multinomial logistic regression analysis of the Knowledge of health care providers regarding morphine use.

From table 6, model 1 fitted the association between the dependent variable (morphine use) and the independent variable (factors) with those who use morphine as the reference category. Model 2 controlled for practice setting of

the participants. Model 3 controlled for course on pain management and Model 4 controlled for frequency of caring patients in pain. From the model fitting information in the analysis, the probability of the model Chi-square was less than the level of significance of 0.05 in the three models.

Table6: Multinomial logistic regression analysis of the Factors influencing Morphine use

Variable	Model 1	Model 2	Model 3	Model 4
Use Morphine Versus Not Using Morphine				
Factor 3	.353*(.05-2.34)	.187*(.04-.84)	.251*(.03-2.13)	.403*(0.05-3.54)
Factor 4	.286*(.06-1.19)	.393*(.05-3.24)	.097*(0.01-0.64)	.099*(0.01-0.77)
Factor 7	.278*(0.09-.83)	.217*(.06-.69)	.078***(0.02-0.36)	.052***(0.01-0.28)
Factor 8			.741*(0.60-1.03)	.647*(0.4-1.81)
Practice Setting		.669*(.45-.95)	.53***(0.34-0.82)	.528***(.342-.817)
Course			5.08***(8.40-298.54)	36.52***(5.57-239.21)
Frequency of caring				.27*(0.09-0.84)

Pseudo R-square	0.385	0.427	0.641	0.673
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Note: # $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; 95% confidence interval in parentheses

Source: Field Data (2017)

From Model 1 in Table above the factors 3, 4, 7 and 8 were significant in differentiating those participants who use morphine and those who do not use morphine in cancer pain management ($p < 0.05$). Participants who agreed that the dose and length of time allowed by a single prescription and which clinician can prescribe opioids were less likely to use morphine in pain management by 64.7% (RRR=0.353, $P=0.028$, C.I.=0.05-2.34). The results also revealed that participants who agreed that morphine can only be sold to institutions that have at least a medical officer were less likely to use morphine in pain management by 71.4% (RRR=0.286, $P=0.048$, C.I.=0.06-1.19). In regard to prescribers of morphine face challenges, those participants who agreed that they face challenges were less likely to use morphine by 72.2% (RRR=0.278, $P=0.022$, C.I.=0.09-0.83).

In model 2 which controlled for practice setting, factors 3, 4, 7 & 8 were all significant ($P < 0.05$) in differentiating those that would use morphine in cancer pain management. The odd ratio (OR) for factor three decrease from 0.353 to 0.180 implying when practice setting is taken into consideration those who agreed that the dose and length of time allowed by a single prescription and which clinician can prescribe opioids are less likely to use morphine by 81.3%. However, the relative risk ratio for factor four increased from 0.286 to 0.393 postulating that those participants who agreed that the fact that morphine can only be sold to institutions that have at least a medical officer are less likely to use morphine by 60.7%. Relative risk ratio for factor seven reduced from 0.278 to 0.217 suggesting that those participants who agreed that prescribers of morphine face challenges were less likely to use morphine by 78.3%.

In model 3 which controlled for course on pain management, factors 3, 4, 7 & 8 were all significant ($P < 0.05$) in differentiating those that would use morphine in cancer pain management. The relative risk ratio for factor three increased from 0.187 to 0.125 suggesting when course on pain management is taken into consideration those who agreed that the dose and length of time allowed by a single prescription and which clinician can prescribe opioids are less likely to use morphine by 74.9%. Nevertheless, the relative risk ratio for factor four decreased from 0.393 to 0.097 postulating that those participants who agreed that morphine can only be sold to institutions that have at least a medical officer are less likely to use morphine by 90.3%. Relative risk ratio for factor seven reduced from 0.217 to 0.078 implying that those participants who agreed that prescribers of morphine face challenges were less likely to use morphine by 92.2%. Factor eight was significant after course on pain management suggesting that those who agreed that the actual cost of morphine influences morphine use in cancer pain relief are less likely to use morphine by 25.9% (RRR=0.741, $P=0.018$, C.I.=0.60-1.03).

In model 4 which controlled for frequency of caring patients, factors 3, 4, 7 & 8 were all significant ($P < 0.05$) in differentiating those that would use morphine in cancer pain management. The relative risk ratio for factor three increased from 0.125 to 0.403 suggesting that when frequency of caring patient is taken into consideration those who agreed with the dose and length of time allowed by a single prescription and which clinician can prescribe opioids are less likely to use morphine by 59.7%. Similarly, the relative risk ratio for factor four increased from 0.097 to 0.099 implying that those participants who agreed that the fact that morphine can only be sold to institutions that have at least a medical officer are less likely to use morphine by 90.1%. However, relative risk ratio for factor seven decreased from 0.078 to 0.052 implying that those participants who agreed that prescribers of morphine face challenges were less likely to use morphine by 94.8%. Similarly, the odd ratio for factor eight decreased from 0.741 to 0.647 postulating that those participants who agreed that the actual cost of morphine influences morphine use in cancer pain relief were less likely to use morphine by 35.3%.

management. The relative risk ratio for factor three increased from 0.251 to 0.403 suggesting that when frequency of caring patient is taken into consideration those who agreed with the dose and length of time allowed by a single prescription and which clinician can prescribe opioids are less likely to use morphine by 59.7%. Similarly, the relative risk ratio for factor four increased from 0.097 to 0.099 implying that those participants who agreed that the fact that morphine can only be sold to institutions that have at least a medical officer are less likely to use morphine by 90.1%. However, relative risk ratio for factor seven decreased from 0.078 to 0.052 implying that those participants who agreed that prescribers of morphine face challenges were less likely to use morphine by 94.8%. Similarly, the odd ratio for factor eight decreased from 0.741 to 0.647 postulating that those participants who agreed that the actual cost of morphine influences morphine use in cancer pain relief were less likely to use morphine by 35.3%.

Discussion

Multinomial regression analysis revealed factor such as the dose and length of time allowed by a single prescription and which clinician can prescribe opioids, the fact that morphine can only be sold to institutions that have at least a medical officer and prescribers of morphine face challenges were significant in differentiating those participants who used morphine to relief cancer pain from those who do not as obtained in model 1. This implies that, those participants who agreed with these factors were less likely to use morphine relief cancer pain as compared to those who do not use morphine.

In model two, practice setting was controlled; the actual cost of morphine was significant in differentiating those who use morphine to relief cancer pain from those who do not. Controlling course on pain management in model three and frequency of caring patients in pain in model four maintain the significant of these factors. Therefore, it can be deduced that taking into consideration practice setting, course on pain management and frequency of caring patients in pain influenced the use of morphine to relief cancer pain as far as these factors are considered.

The study findings revealed that prescribers of morphine face challenges and FGD indicated that health care providers often create barriers to effective pain management. Time constraints and insufficient knowledge regarding pain management of medical professionals were the most commonly encountered barriers to effective pain management for physicians, clinical officers and nurses.

Gathitu et al., (2014) noted that access to essential medicines is fundamental to good performance of the healthcare system. Palliative care is a priority in many developing countries with the rising burden of non-communicable and chronic illnesses. However, access to opioids in palliative care has not been prioritized in Kenya. Factors that were found to influence access to morphine positively and significantly were

commodity management practices, rational use of morphine and human resource practices. There was no significant statistical evidence on the relationship between palliative care policy practices and access to morphine. Human resource practice has the highest influence on access to morphine, followed by commodity management practices and rational use of opioids respectively.

Hanna and Kangolle (2010) observed that patients who suffer pain have a right to access essential medicines including morphine and this requires that limits on which healthcare worker can prescribe opioids be no more restrictive than is reasonably necessary to prevent their diversion to misuse. Under international human rights law, countries are obliged to ensure the availability and accessibility of essential medications like morphine but this is yet to be realized on the ground (Hanna and Kangolle 2010). But WHO has observed that the right to impose additional requirements must be continually balanced against the responsibility to ensure opioid availability for medical purposes (WHO 2011).

Both prescribing and dispensing practices directly influence access of morphine. Prescribers who are mostly medical doctors may be absent from the hospital at the time of pain in a palliative patient hence the need to incorporate other cadres of staff including nurses and clinical officers to prescribe morphine. Pharmacists may also not be always available to dispense opioids hence the need for other cadres including pharmaceutical technologists and nurses to be allowed to dispense these medications at the time of need to patients. From literature review, many developing country governments have limited the availability or supply for medical use of morphine and put strict policies in place that govern their prescription, dispensation and consumption (Union for International Cancer Control, 2013). Mozambique has legislation that restricts how doctors are allowed to prescribe opioids whereas Botswana, Democratic Republic of Congo, Malawi, Namibia, Swaziland and Zambia have initiatives to change regulations that restrict physician or patient access to pain relief (African Palliative Care Association, 2016). Human resource in the hospital influences the other three variables to ensure access to opioids since they are the providers of palliative care to patients, hence human resource practices are the sole determinants of the other three practices/variables. For instance, Uganda changed their law to allow nurses and clinical officers who complete special training in palliative medicine at Hospice Uganda to prescribe morphine (Jagwe and Merriman, 2007). Nurses and clinical officers must be empowered to provide quality care, including prescribing morphine to patients who need them (Morris, 2013). In Kenya the debate has been on for years.

Conclusions and Recommendations

The study concluded that on the use morphine to control cancer pain amongst adult, the following factors are considered; the dose and length of time allowed by a single prescription, challenges faced when prescribing morphine, morphine can only be sold to institutions that have at least a medical officer and actual cost of morphine. The study also concluded that physicians and nurses experienced barriers to effective pain management. Time constraints, access and

availability of morphine, insufficient knowledge regarding cancer pain management, patient's reluctance to take morphine and patient underreporting pain featured more often. The study made the following recommendations based on the findings. The study recommended that health care providers should be educated on pain as an experience with physical, physiological, psychological, social, cultural and other dimensions rather than being taught as a symptom of disease. Clinical officers and nurses with specialized education should be informed and legally empowered to prescribe morphine as they see fit based on individual patient's needs to help patients in the absence of medical officers.

Morphine, being a mainstay opioid analgesic as per the WHO guidelines should be always available and accessible in the facilities since it's an essential medicine for the treatment of moderate to severe pain. This is because morphine is currently the gold standard of analgesics used to relieve severe pain and suffering for patients with cancer.

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