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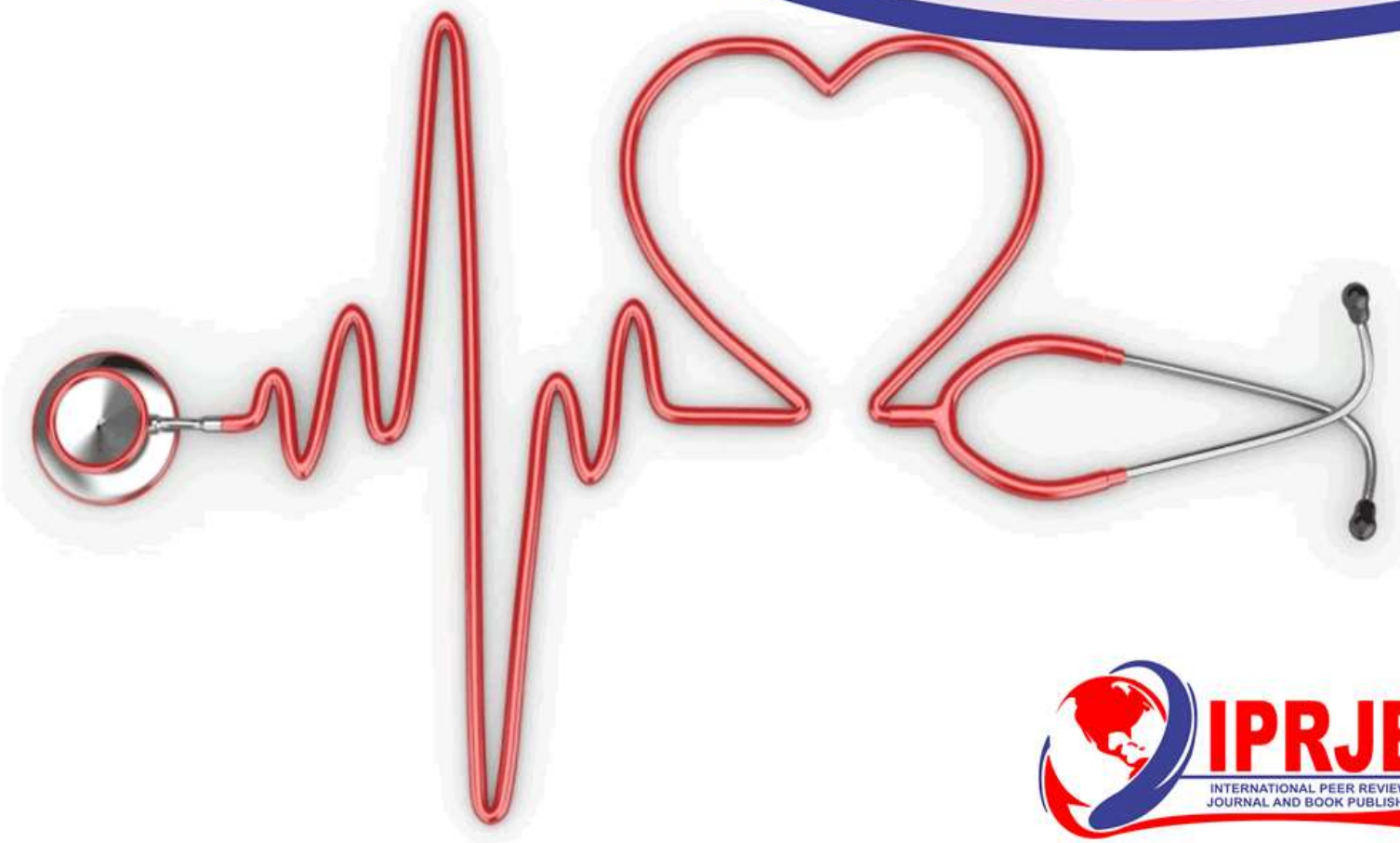

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Preparing Future Doctors for Palliative and End of Life Care in Kenya: Cross-sectional Survey

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Abstract

Purpose: The main aim of this study was to assess how prepared are Kenyan doctors in delivering palliative and end of life care to chronic and life-threatening conditions.

Methodology: Cross-sectional survey was used to assess doctor's palliative and end of life practices. Multi-center (three-mission referral and teaching hospitals in Kenya): Tenwek, Kijabe, and Chogoria were used to collect data from 96 medical practioners. Medical doctors with at least 6 months managing patients with chronic conditions (cancer, HIV/AIDS and other life-threatening conditions) were recruited into the study. The quantitative data was analysed using an independent t-test. All ethical considerations were addressed.

Findings: Majority of doctors interviewed were generalists who had managed chronic diseases. Majority had basic concepts of palliative care and end of life care. Those who had received prior training in palliative care were better in performance's score on knowledge questions regarding palliative care and end of life. Medical doctors were knowledgeable on psychological distress and opioids effects domains as compared to delirium and dyspnea domains. Among those who were knowledgeable in palliative care and end of life care were doctors trained outside Kenya, those who were senior with more experiences (>10 years), over 40 years and had further training after their undergraduate

Unique Contribution to Theory, Practice and Policy: This study seeks to develop training tailored to Kenyan doctors and Physicians on end-of-life care practices in selected counties then roll-out to the rest of the counties in the country in collaboration with Ministry of Health Kenya and also provide opportunities for doctors to develop palliative and end-of-life care skills especially for resident and junior doctors. This study will also form basis for policy development on palliative and end-of-life care practices in Kenya, which currently is non-existent. End-of-life care Policy would aid in clinical application of good practices surrounding palliative and end-of-life care which should be implemented in Kenya. This study advocates inclusion of end-of-life care training modules in a standardized curriculum for undergraduate as part of training and preparing future Kenyan doctors. Further, this study can be considered as current Physician's approach to end-of-life care practices in Kenya which then can be a basis to develop guidelines and standards addressing end-of-life which is fraught with ethical and medical dilemmas carried by healthcare professionals.

Keywords: *Palliative Care, End-of-Life, Kenya*

INTRODUCTION

With a growing number of people living with complex life-limiting multimorbidity, it's important to think about how to better organize and administer high-quality palliative and end-of-life care. The capacity to deliver palliative and End of Life care to patients is increasingly being recognized as a critical clinical skill that all doctors should have(Chiu et al., 2015; Giezendanner et al., 2017).

Several surveys affirm an urgent need for improvement in EOL practice on advanced care planning, distinct aspects of changing goals of care, implementation of standard operating procedures, continuing education, and reporting of outcome data(Chiu et al., 2015; Giezendanner et al., 2017; "Improving end-of-life care: recommendations on professional development for physicians," 2012; Ioshimoto et al., 2020; Mitchell, Loew, Millington-Sanders, & Dale, 2016; Weiss et al., 2017). Survey on palliative care physicians' practices and knowledge regarding advance care planning in palliative care units in Japan reported discrepancy between physicians' practices and their recognition of the importance of ACP which further suggests an opportunity to improve end-of-life care through training(K. Nakazawa et al., 2014). Web-based national survey focusing on providing end-of-life care in general practice in UK reported increasing recognition of the end of life, opportunity for care planning discussions, and provision of support for families; medical management as important in enhancing knowledge, skills, and attitudes towards EOLC(Mitchell et al., 2016). The study further highlighted importance of effective symptom-control and access to specialist palliative care services; and expertise and training - the need for training and professional development

In one study to evaluate effectiveness of training the hospice and palliative medicine physician workforce for improved end-of-life health care in US reported widening gap between the demand for palliative care services and the supply of trained palliative care professionals which has resulted in considerable end-of-life distress for patients. Without formal training in palliative medicine and end-of-life symptom management, physicians are reported to be less equipped to competently address seriously ill and dying patients' medical, emotional, and spiritual needs(Bui, 2012). In one survey study to identify essential competencies in end-of-life care, as well as general practitioners' confidence in these competencies, reported need to provide guide on training and quality improvement efforts in this domain. Whereas majority of general practitioners reported recognizing and treating pain as important, few GPs felt confident in cultural, spiritual and legal end-of-life competencies although more than half of the respondents regarded these competencies as important(Giezendanner et al., 2017). Similarly, GPs considered non-somatic competencies (such as spiritual, cultural, ethical, and legal aspects) nearly as important as pain and symptom control. Yet, few GPs felt confident in these non-somatic competencies. These findings should inform training and quality improvement efforts in this domain, in particular for younger, less experienced GPs.

In one survey study assessing attitudes about end-of-life discussion with patients near death, identification of the proxy decision maker, and sharing documented information on end-of-life discussion with the multidisciplinary team reported varied practices related to training. The study reported physicians' involvement in adequate end-of-life discussion with patients near death were not high yet participation in a structured education program might have a positive influence on end-of-life discussion with patients(Hamano, Hanari, & Tamiya, 2020). Therefore recommendations on professional development for physicians, have been made to Hospital

trusts to review the provision of learning opportunities for their consultant, trainee and non-training grade workforce and, where necessary, increase the availability of local end-of-life care training and education("Improving end-of-life care: recommendations on professional development for physicians," 2012). There is broad recognition that the delivery of good care at the end of life cannot be left to specialists in palliative care but is an important part of the role of generalist practitioners. Recognising someone is entering the last phase of their life is pivotal to establishing patient priorities and balancing therapeutic burdens and benefits("Improving end-of-life care: recommendations on professional development for physicians," 2012). Elsewhere, a study to establish knowledge and attitudes toward palliative terminal cancer care among Thai generalists, reported that doctors had moderate scores in both attitudes and knowledge regarding palliative terminal cancer care. However, they had insufficient knowledge regarding truth telling, pain control and management with morphine, emergency management in terminal cancer care and treatment of fluid intake in terminal stages. Knowledge scores were further positively associated with being taught palliative care in their medical curriculum(Budkaew & Chumworathayi, 2013)

Studies have reported continued need to have team of physicians involved in end-of-life care which should actively plan for cultural change in the delivery of end-of-life care by identifying medical leaders, engaging colleagues, and supporting the development of expertise among colleagues. In order to influence their practice and ensure that patients have time to adjust, physicians must recognise that end-of life care is not just care in the last few hours and days but that it marks the last phase of life which may be many months or sometimes years("Improving end-of-life care: recommendations on professional development for physicians," 2012). As such, studies have recommended professional development for end-of-life care that should focus on strengthening multi-professional teams and promote collaboration between team members. Further, support towards development of effective communication skills through interactive approaches, such as simulation, observation and practice with feedback is critical. Use of opportunities in routine practice to draw on clinical experiences with a direct relevance to patient care, developing problem solving and reflective skills, actively seek engagement with, and feedback from, patients and caregivers to improve understanding of the patient experience has been recommended(Budkaew & Chumworathayi, 2013)

Most studies conducted report physicians and medical students both report feeling that their training in end-of-life care and in palliative issues is lacking ((Chiu et al., 2015; Ioshimoto et al., 2020; Wilson, Herbst, & Gonzalez-Del-Rey, 2018). Other studies for instance, Bui (2012), Von and colleagues (2012 have shown concern about the varied and non-uniform approach to palliative care training across medical schools(Bui, 2012; Chiu et al., 2015; von Gunten et al., 2012). Elsewhere, one survey focusing on education as an important factor in end-of-life care reports Brazilian) physicians' attitudes and lack of knowledge and training in end-of-life medicine(Ioshimoto et al., 2020). Further, the study identified key areas shaping knowledge on end-of-life care as prior training, previous contact with dying patients and prior medical residency. Another survey assessing GP’s EOL-related practices and confidence in EOL-related skills among family physicians found to have increased the GPs' confidence on EOL-related communication and collaboration skills with continual medical education learning module. Specific skills such as conversation about EOL care, developing an action plan for EOL care, communicating the patient's needs and wishes to other care providers, participating

in collaborative care with home and community care nurses, and accessing and referring patients to EOL specialists in the community improved.

Qualitative study focusing on doctors' reasons providing futile treatment at the end of life, attributed the provision of futile treatment to a wide range of inter-related factors. For instance, characteristics of treating doctors was one reason given, including their orientation towards curative treatment, discomfort or inexperience with death and dying, concerns about legal risk and poor communication skills. Attributes of the patient and family, including their requests or demands for further treatment, prognostic uncertainty, and lack of information about patient wishes was reported as another reason. Hospital factors including a high degree of specialisation, the availability of routine tests and interventions, and organisational barriers to diverting a patient from a curative to a palliative pathway was also cited(Willmott et al., 2016)

Whilst majority of residents reported caring for a dying patient, less than half the resident doctors studied reported receiving prior education on EOL care(Wilson et al., 2018). It is also reported that caring for a child near the end of life (EOL) can be a stressful experience. Resident physicians are often the frontline providers responsible for managing symptoms, communicating difficult information, and pronouncing death, yet they often receive minimal education on EOL care. The study recommended further institutional support to improve the LST discussion between doctors, patients, and family following survey examining difficulties doctors experience during life-sustaining treatment discussion. It was noted that there are serious difficulties regarding communication with patients and family and medical assessment of dying process during LST discussions was noted(Yoo et al., 2021).

Whilst Kenya Hospices and Palliative Care Association (KEHPCA) undertook advocacy for integration of palliative care services in public hospitals in Kenya both at at the national level and at the institutional level as well as training of health care professionals, and setting up services within the hospitals(Ali, 2016), there is little known on Kenyan doctor's experiences and preparedness to deliver end of life care to increasing population with life-limiting illness. Assessment done on palliative care services in western Kenya, reports increasing need for providing more education to health care providers as well as increased access to pain medications including opioids to improve the care of patients(Hijab Zubairi & 2017).

Despite recent increases in end-of-life treatments around the world, health care workers generally are undertrained in palliative care and especially EoL care. Several countries including East-African countries are launching programs to better educate healthcareproviders about end-of-life care. One pilot study on palliative care provider assessment on self-competence and priorities for education in Kenya, reported varying levels of self-competence among palliative care. Hence there is need to build palliative care competencies in adult and other aspects of inpatient hospice referral, the use of injectable opioid analgesics, and the assessment of pain especially among paediatric patient which has shown to have the lowest mean self-competence scores among the clinical staff(Sedillo et al., 2015). Further, studies have shown that advancing training and adequate preparation of clinicians in order to meet both palliative and end of life care needs for their patientsis needed. Review of recent literature has shown that majority of published work in the area of palliative care have focused on other health care worker's experiencesand knowledge(Fadare et al., 2014; Kassa, Murugan, Zewdu, Hailu, & Woldeyohannes, 2014; Machira, Kariuki, & Martindale, 2013; Sedillo et al., 2015) whilst there is little known on doctor's perspective. It is against this background that this study

sought to find out level of preparedness of Kenyan doctors to deliver end of life care to chronic ill patients. In the study we sought to assess previous level of training in end-of-life care as well as established knowledge towards end-of-life issues

Study Objectives

The study sought to establish medical practioners' knowledge and practices regarding delivery of palliative and end of life care to patients with chronic conditions. It assessed the level of preparedness of medical doctors providing palliative care end of life care to patients with palliative care needs.

METHODOLOGY

Study Design

Cross-sectional survey design was used to collect data from consultants, surgical residents, family medicine residents, medical officers, and undergraduate interns based

Settings

Multi-centre study was carried in three referral and teaching hospitals in Kenya: Tenwek, Kijabe, and Chogoria over a period of 3 months. The choice of the three mission hospitals suits the study given that they have established palliative care units to support patients with life threatening illnesses and as such there was high expectation that EoLC issues would be handled competently. The three referral and teaching hospitals currently receive enormous growing number of patients with life threatening illnesses, and some come at their advanced stage of disease hence requiring EoLC.

Participants

Medical doctors with at least 6 months managing patients with chronic conditions (cancer, HIV/AIDS and other life-threatening conditions) were recruited into the study. Participants who met inclusive criteria and who were practicing in adult in-patient settings participated.

Variables

The study assessed various key indicators and parameters of palliative and end of life care among Medical Practioners. Among the variables studied included Doctor's knowledge, practices and level of competencies delivering palliative and end of life care to patients living with chronic conditions referred to the referral and teaching hospitals

Data Sources

Data was collected through validated instrument which assessed key areas and competencies related to palliative and end of life care among patients with palliative care needs.

Validation and Reliability

To reduce biasness, questionnaire used to collect data was validated. Questionnaire designed and validated in Japan in 2013(Y. Nakazawa et al., 2009), was adopted for this study. The tool is useful for evaluating both palliative care knowledge among physicians and education programs in primary palliative care. To ensure validity in study context, elements in the questionnaire were selected based on expert opinion from one palliative care professional physician and two other family physicians who had experience with palliative care in our setting thus providing face validity. The questionnaire was pretested among doctors in different

hospital. Their responses were reviewed to check for internal consistency. In addition, participants were asked to provide feedback on questions they believed lacked clarity. Following this process minor revisions to the questionnaire were made to take account of these findings.

Study Size and Data Analysis

Proportionate sampling was utilized to get a total of 162 (one-hundred and sixty-two) participants who were enrolled into the study. The quantitative data was analysed using an independent t-test, and the results were presented.

Ethical Considerations

This study was cleared through two ethical institutional Review Boards: NACOSTI (National Commission Science and Technology -NACOSTI/P/19/49844/27703(Mungara, 2019) and Kabarak University Research Ethics Committee -KABU01/IREC/002/01/2018 and respective hospitals before embarking on the study and was granted. An Information sheet was provided and consent forms were signed by the respondents before taking the questionnaire. The information sheet captured the right of the respondent to withdraw from the study. The questionnaires were anonymous and upon completion, they were put in a sealed box and retrieved only at the time of analysis.

FINDINGS

Out of the target population of 162 doctors in all the three hospitals, 96 respondents filled out and submitted back their questionnaires giving a response rate of 59.2%.

Majority of the respondents (79%) were aged between 21-40 years while the rest were more than 40 years. Male respondents were the majority at 56%. The majority (62%) were junior doctors (medical officer interns, medical officers and residents), while the rest (38%) were consultants. The respondents who were in surgical specialties were 36% while 26% were in medical specialties. This included both consultants and residents in training. The remaining respondents had not specialised (38%). Table 1: Respondent's demographics

Table 1: Respondents' Demographics (N=96)

Characteristic		N	%
Age (Years)	≤ 40	76	79.17
	> 40	20	20.83
Gender	Male	54	56.25
	Female	41	42.71
Seniority	Junior (medical officer intern, medical officer, resident)	59	61.46
	Senior (consultant)	36	37.50
Specialty	Medical Specialty (family medicine, internal medicine, emergency medicine)	25	26.04
	Surgical specialty (general surgery, orthopaedics, urology, neurosurgery, obstetrics, ENT, ophthalmology)	35	36.46
	*Not specialised	36	37.50
Country of Undergraduate Training	Kenya	56	58.33
	Africa (other than Kenya) & other developing countries	14	14.58
	USA and other developed countries	26	27.08
Experience (Years)	≤ 10 years	71	73.96
	>10 years	25	26.04
Terminal Disease Patients cared for in last 6 months	None	3	3.13
	≤20 patients	48	50.00
	>20 patients	44	45.83
Common terminal diseases	HIV/AIDS	37	38.54
	Cancer	84	87.50
	Cardiovascular disease	35	36.46
	Chronic respiratory disease	17	17.71
	Diabetes	12	12.50
	Other (Dementia, Renal Failure)	2	2.08

*this included the medical officer interns and medical officers who were generalists.

The majority of the respondents (58%) had trained in Kenya. The rest included 15% who had trained in other African countries (besides Kenya) and other developing countries, while 27% had trained in the USA and other developed countries (UK, Australia, Canada, Netherlands).

Regarding clinical working experience since graduating from undergraduate medical school, majority (74%) had less than 10 years working experience.

The respondents who had cared for more than 20 terminal disease patients in their last six months of clinical practice were 46%, while only 3% had not cared for any terminal disease patient. The top three most common terminal diseases of the patients cared for were cancer, HIV/AIDS and cardiovascular diseases.

Doctors' Level of Training in End of Life Care

The results of the doctors' level of training is summarised in Table 2.

Table 2: Respondents' Level of Training in End of Life Care (N=96)

Level of Training		N	%
Taught PC/EoLC in undergraduate	Yes	58	60.42
	No	38	39.58
***Form of undergraduate training**	Lectures only	41	73.21
	Lectures and Bedside Tutorial	15	26.79
Further training in PC/ EoLC after undergraduate	Yes	48	50.00
	No	48	50.00
Form of training	Workshop	31	32.3
	Certificate	2	2.1
	Diploma, Degree, Masters	0	0.0
	Other	18	18.8

PC (Palliative Care); Eolc (End of Life Care)

In terms of undergraduate training, 60% of the doctors had received EoLC training in their undergraduate curriculum. With regard to the form of undergraduate training undertaken, 43% of the respondents had received lectures only while only 16% of them had received lectures plus bedside tutorials. Half of the respondents (50%) had received further training in PC and/or EoLC after undergraduate. Most of them (32.3%) had attended a workshop, while only a few (2%) had undertaken a certificate training.

Comparison of Level of Training with the Respondents' Knowledge and Attitude Scores

Comparison of the level of training with the knowledge and attitude scores is summarised in Table 3.

Table 3: Comparison of Level of Training with Knowledge and Attitude Scores (N=96, *P Value <0.05)

Level of training		N	Knowledge mean score (%)	p value	Attitude mean score (%)	p value
Taught PC in undergraduate	Yes	58	78.11		78.83	
	No	38	76.16	0.422	75.75	0.051
Form of undergraduate training	Lectures only	41	75.63		79.09	
	Lectures and Bedside Tutorial	15	85.26	*0.001	78.15	0.672
Further training in PC after undergraduate	Yes	48	79.74		78.91	
	No	48	75.00	*0.046	76.31	0.094

**significant p-value*

With regard to undergraduate training, knowledge mean score for those who had received EoLC training versus those who hadn't was not significant (78% versus 76%; p=0.422). Comparison of their attitude mean scores was also not significant (78.8% versus75.8%; p=0.051).

In terms of the form of training, knowledge mean scores for those who had received lectures and bedside tutorial was significantly better than those who had lectures only (85.2% versus 75.6%; p= 0.001). However, comparison of their attitude scores did not show a significant difference (78.2% versus 79.1%; p=0.672).

Comparison of knowledge mean scores for those who had received further training versus those who hadn't was significant in favour of those who had received further training (80% versus 75%; p= 0.046). However, comparison of these two groups in terms of their mean attitude scores was not significant (79.0% versus 76.3%; p=0.094).

Doctors' Knowledge in End of Life Care

A summary of the knowledge mean scores per question is presented in Table 4

Table 4: Proportion of Doctors with Correct Answers to Each of the Knowledge Questions (N=96)

Domain	True/ False Statement	Answer	No. (Correct)	% (Correct)
Philosophy of PC	1. Palliative care is synonymous with terminal care	F	71	74.0
	2. Palliative care should not be provided along with anti-cancer treatments	F	90	93.8
Pain	3. One of the goals of pain management is to get a good night's sleep	T	85	88.5
	4. When cancer pain is severe, one of the opioids is used as an initial analgesic	T	76	79.2
	5. When opioids are initially prescribed, all non-opioid analgesics should be discontinued	F	87	90.6
	6. Morphine is used safely in a patient with renal failure	F	27	28.1
	7. Opioid rotation or switching should be considered when it is difficult to increase the dose of opioids due to adverse effects	T	87	90.6
Opioid side effects	8. It is necessary to use a laxative together with oral opioids, because most patients who take opioids experience constipation	T	95	99.0
	9. Opioids cause addiction in 0.2% or less of cancer patients under careful monitoring	T	80	83.3
Dyspnoea	10. Morphine can be used to relieve dyspnoea in cancer patients	T	62	64.6
	11. When opioids are taken on a regular basis, respiratory depression will be common	F	67	69.8
	12. Oxygen saturation levels are correlated with dyspnoea	F	59	61.5
Psychological distress	13. When a patient has a high level of psychological distress, clinicians are recommended to examine whether the patient has suicidal ideation	T	91	94.8
	14. Anxiolytics can be prescribed for palliative patients with psychological distress	T	93	96.9
Delirium	15. Delirium occurs due to drugs or physical aetiologies	T	84	87.5
	16. Benzodiazepines are the first line therapy for delirium	F	40	41.7
	17. It is better to make the room pitch black for a patient with delirium, so that he or she can sleep well	F	63	65.6
Communication	18. When physicians convey bad news, they should ask the patient's concern and understanding about the disease	T	95	99.0
	19. It is better to repeatedly use the word 'cancer' when telling the patient about his or her malignancy	F	61	63.5

The overall EoLC knowledge mean score for all the respondents was 77.37%. As shown in the table**,** the doctors were most knowledgeable in the domains of psychological distress (95.75%) and opioid side effects (91.1%) and least knowledgeable in the domains of delirium (64.9%) and dyspnoea (65.2%).

In the domain of philosophy of palliative care, the mean score was 83.8%. Here, 93.8% of them disagreed that palliative care should not be provided along with anti-cancer treatments. However, 26% of the respondents reported that palliative care is synonymous with terminal care.

In the domain of pain, the mean score was 75.38%. Eighty eight percent of the respondents correctly answered that one of the goals of pain management is to get a good night's sleep. Regarding opioid use, 90.6% of them disagreed that when opioids are initially prescribed, all non-opioid analgesics should be discontinued, while 79.2% of them correctly answered that when cancer pain is severe, one of the opioids is used as an initial analgesic. However, only 28.1% of the respondents disagreed that morphine is used safely in a patient with renal failure. This question had the lowest mean score.

In the domain of opioid side effects, the mean score was 91.1%. 90.6% of the respondents reported that opioid rotation or switching should be considered when it is difficult to increase the dose of opioids due to adverse effects. Furthermore, 99% of them reported that it is necessary to use a laxative together with oral opioids. This question was one of the two with the highest mean score. Eighty three percent of the respondents reported that opioids cause addiction in 0.2% or less of cancer patients under careful monitoring.

In the domain of dyspnoea, the average mean score was 65.2%. Sixty four percent of the respondents reported that morphine can be used to relieve dyspnoea in cancer patients, while 69.8% of them disagreed that when opioids are taken on a regular basis, respiratory depression will be common. Furthermore, only 61.5% disagreed that oxygen saturation levels are correlated with dyspnoea.

The domain of psychological distress had the highest knowledge mean score of 95.75%. Most of the respondents (94.8%) reported that when a patient has a high level of psychological distress, clinicians should examine whether the patient has suicidal ideation. Furthermore, 96.9% of them reported that anxiolytics can be prescribed for palliative patients with psychological distress.

The domain of delirium had the lowest mean score of 64.9%. Eighty seven percent of the respondents reported that delirium occurs due to drugs or physical aetiologies. However, only 41.7% of them disagreed that benzodiazepines are the first line therapy for delirium. This question had the second lowest mean score.

The domain of communication had a mean score of 81.2%. Almost all of the respondents (99%) correctly answered that when physicians convey bad news, they should ask the patient's concern and understanding about the disease. However, only 63.5% of them disagreed that it is better to repeatedly use the word 'cancer' when telling the patient about his or her malignancy.

Comparison of Knowledge Scores with Respondent's Demographics

Comparison of the knowledge scores with the respondent's demographics is presented in Table 5.

Table 5: Comparison of Respondents' Demographics with Knowledge Scores (N=96; *P Value <0.05)

Characteristic		N	Knowledge mean score (%)	Std. Deviation	p-value
Age (Years)	≤ 40	76	14.39 (75.74)	2.304	
	> 40	20	15.85 (83.42)	1.226	*0.008
Gender	Male	54	14.83 (78.05)	2.448	
	Female	41	14.46 (76.11)	1.832	0.420
Seniority	Junior	59	13.95 (73.42)	2.129	
	Senior (Consultant)	36	16.06 (84.53)	1.472	*0.000
Specialty	Medical Specialty	25	16.08 (84.63)	1.412	
	Surgical specialty	35	15.20 (80.00)	1.568	*0.029
Country of undergraduate training	Kenya	56	14.11 (74.26)	1.775	Kenya vs USA=*0.000
	Africa and other developing countries	14	13.57 (71.42)	3.081	Kenya vs Africa=0.394
	USA and other developed countries	26	16.58 (87.26)	1.172	
Experience (Years)	≤ 10 years	71	14.32 (75.37)	2.291	
	>10 years	25	15.76 (82.95)	1.508	*0.004
Terminal disease patients cared for in 6 months	None	3	13.33 (70.16)	1.155	
	≤20 patients	48	14.58 (76.74)	2.491	0.396
	>20 patients	44	14.93 (78.58)	1.910	0.456

**significant p-value*

There was a significant positive association of knowledge scores with the following: age more than 40 years, seniority, medical specialty, having trained in a developed country, and clinical experience more than 10 years. However, there was no significant association with gender,

having been taught palliative care in undergraduate or number of terminal disease patients cared for in the last six months.

In terms of seniority, the senior medical doctors scored better than their junior colleagues (84.53% vs 73.42%; p=0.000). Those who had more than 10 years clinical experience scored better than those who had less than 10 years clinical experience (82.95% vs 75.37%; p=0.004). With regard to specialty, those who had specialised in medical specialties scored better than their colleagues in the surgical specialties (84.63% vs 80%; p=0.029).

As pertaining to country of undergraduate training, those who trained in the USA and other developed countries scored significantly better than those who trained in Kenya (87.26% vs 74.26%; p=0.000). However, there was no significant difference between those who trained in Kenya and those who trained in other African and developing countries (74.26% versus 71.42%; p=0.394).

Discussion

This study is one of the few studies in Sub-Saharan Africa that focuses on doctors' EoLC training, knowledge, and attitudes. Nurses' knowledge and attitudes regarding palliative care have been the subject of most previous studies in the region (17, 18, 20). EoLC is unavoidably a priority in view of the region's growing burden of life-limiting illnesses caused by HIV/AIDS, cancer, and cardiovascular disease. Doctors play an important role in end-of-life care because they diagnose terminal illnesses, determine treatment decisions, prescribe drugs, and communicate with patients and their families. The study's findings are reviewed in terms of the three study objectives: doctors' previous level of EoLC training, doctors' understanding of EoLC, and doctors' attitudes regarding EoLC.

Doctors' Level of Training in End of Life Care

The study's first goal was to determine the doctors' level of training in end-of-life care. The doctors' degree of education was insufficient. Nearly half of the students (40 percent) had not had EoLC instruction as part of their undergraduate education. Only about a third of individuals who had gotten the training had bedside tutorials in addition to lectures, while the rest had only lectures.

Undergraduate EoLC education is critical in equipping doctors to provide this critical service to patients. In 2004, the World Health Organization suggested that all governments include palliative care in health worker training at all levels (20). EoLC training, on the other hand, is not stressed in undergraduate training, as evidenced by this response. In Kenya, training consists primarily of a few lectures during the final year of medical school. The majority of end-of-life training in undergraduate is offered as lectures only, with limited contact with dying patients, according to Western literature (21).

The UK's focus on curative care throughout undergraduate training has been cited as one reason why newly trained doctors are unprepared to care for patients towards the end of life (20). Respondents identified a culture at their medical schools that emphasized "clerking patients," "spotting symptoms," and "passing tests." They also believed that the emphasis of their education was on curative care. In research focusing on nurse training in palliative care, a similar difficulty has been identified. A study in Kenya found insufficient hours for theoretical and a lack of practical experience and/or clinical areas for students (21).

This is despite the WHO's recommendation that palliative care be included in all levels of health worker training (20). There was no significant difference in knowledge mean scores between individuals who had had undergraduate EoLC training and those who had not. The difference in their attitude mean scores was similarly not significant. This was surprising because one would anticipate people with college training to perform better in at least the knowledge section. One explanation is that some of individuals who said they had not gotten EoLC instruction may have really attended some lectures that they mistook for training.

Another possibility is that EoLC knowledge and attitudes are formed more in clinical practice and postgraduate education than in undergraduate education. A comparable study in Thailand indicated that those who had attended undergraduate palliative care instruction had significantly higher knowledge ratings (10). This could point to a distinction in the character of undergraduate education in Kenya and Thailand.

When the knowledge mean scores of individuals who received bedside tutorials combined with lectures were compared to those who just had lectures, there was a substantial difference in knowledge scores in favor of the former. This demonstrates the importance of hands-on experience in EoLC training in reinforcing classroom information. Indeed, a review of the literature aiming at improving medical graduates' palliative care training found that both educational and clinical PC and EoLC training were essential in undergraduate education (20).

Lectures, seminars, small group discussions, clinical case discussions, and hospice visits were identified as useful teaching techniques. However, there was no significant difference in attitude scores between those who had bedside tutorials and those who merely had lectures. This is an intriguing conclusion that warrants additional investigation into the factors that influence people's attitudes toward EoLC.

After completing their undergraduate studies, half of the respondents acquired additional training in PC and/or EoLC. When comparing knowledge mean scores between those who had received additional training and those who had not, the difference was considerable in favor of those who had received further training. However, there was no significant difference between these two groups in terms of mean attitude scores. This demonstrates that obtaining additional EoLC training has an impact on one's knowledge.

In a prospective study in Germany, physicians who had acquired a certificate in palliative care scored much higher in both knowledge and self-confidence in PC (20). However, it appears that having further EoLC training had little effect on the doctors' attitudes. This is a topic that needs to be looked into further.

Doctors who received their training in wealthy countries, mostly the United States, performed much better than their Kenyan counterparts. This is most likely owing to the more evolved nature of palliative care training in the West compared to Kenya. The Medical School Palliative Care Education Project in the United States, for example, has been providing faculty development to medical schools in the development of elective clinical rotations in the last two years of medical school since 2007. (20). In 2013, Kenya created a nationwide palliative care training curriculum (21). It is necessary to investigate the application and impact of this curriculum in EoLC training in Kenya.

Doctors Knowledge in End of Life Care

The study's second goal was to examine clinicians' understanding of EoLC. In the management of patients with life-limiting conditions, having a strong understanding of EoLC is essential. This study found that clinicians have acceptable understanding of EoLC, with a mean knowledge score of 77.37 percent for all respondents. Philosophy of palliative care, pain, opioid side effects, dyspnea, psychological distress, delirium, and communication were the seven essential domains of EoLC that were assessed.

The domains of psychological distress and opioid side effects had the highest knowledge ratings. In the topic of psychological distress, 94 percent of doctors correctly replied that clinicians should check whether a patient has suicidal ideation when the patient has a high level of psychological suffering. In a survey with a similar question, 80 percent of doctors in Japan scored higher than this (22). Psychological suffering, such as depression and anxiety, is common among people nearing the end of their lives (23)

While focusing solely on bodily symptoms, this crucial domain should not be disregarded. Once you've been diagnosed, you should get the help you need, including counselling and medication.

Delirium and dyspnoea were the two domains with the lowest knowledge ratings. Only 42% of those polled agreed that benzodiazepines are the first-line treatment for delirium. In Japan, only 52% of people correctly answered the same question (20). This indicates a lack of expertise in the treatment of delirium, which is a typical concern among terminally ill patients (21).

Delirium is described as a short-term disruption in attention and awareness (DSM-5). On admission to inpatient palliative care units, the prevalence of delirium was reported to be 13–42 percent, rising to 88 percent in the final week of life (20). It's a clinical diagnostic that's frequently missed or misread by medical professionals (21). The low knowledge scores in this category may be due to a lack of a correct diagnosis of delirium. Delirium evaluation measures, such as the Memorial Delirium Assessment Scale, have been developed to fill this need (20). These tools should be taught to doctors as part of their EoLC training.

When it came to dyspnoea, 38% of doctors said that 'oxygen saturation levels relate to dyspnoea.' This is incorrect since dyspnoea is a patient-centered symptom that is not always associated with hypoxia, hypercarbia, or tachypnoea (20). In addition, 35% of them were unaware that morphine can be used to treat dyspnoea in cancer patients. Similarly, in research conducted in Japan, 33% of clinicians were unaware that morphine might be used to treat dyspnoea (21).

One prevalent fear among health professionals is that morphine may produce respiratory depression, which could explain why so many people are unaware that it can be used to treat dyspnea. Opioids relieve dyspnea by reducing the amount of work required to breathe, and the administration of adequate opioid dosages does not result in respiratory depression (22). Dyspnoea, or shortness of breath, is a common and distressing condition for individuals nearing the end of their lives. It affects 60-95 percent of people, especially those with COPD and heart disease (23). Due to a lack of information in this vital subject, immediate intervention is required to improve the quality of life of these patients.

The average knowledge score in the domain of pain management was 75.38 percent. One of the most common symptoms experienced by palliative and end-of-life care patients is pain (20, 21). Physicians sometimes underestimate the severity of these patients' suffering (21). This could explain why 21% of those polled in this survey replied erroneously when asked if "one of the opioids is used as an initial analgesic when cancer pain is severe." In Japan, 47% of physicians did not correctly answer this question (22).

Statements on pain management received the lowest marks in a survey examining physicians' knowledge and attitudes in end-of-life treatment of patients with terminal disease (20). Another study looked at the self-competence and priorities of palliative care providers in a Kenyan hospice and found that they lacked understanding in pain management (21). Furthermore, in this study, clinical staff did not do any better than non-clinical staff in terms of pain treatment (21)End-of-life patients' quality of life will be improved if doctors are competent and confident in dealing with pain. As a result, this domain must be stressed in their education.

The question with the lowest score was' morphine can be used safely in a patient with renal failure,' which only 28% of the doctors knew was incorrect. The accurate response percentage for this question was 57 percent in the Japan study. This demonstrates that clinicians lack adequate knowledge in the usage of morphine.

Morphine is not safe in renal failure because its renally excreted metabolite builds up and induces respiratory depression (20). In individuals with renal failure, it should be avoided or administered with caution and dose adjustments (20). In these individuals, fentanyl and methadone are the opioids of choice for pain management (21). However, due to a paucity of opioids and legal constraints on their prescription, implementing this proposal in Africa is difficult.

Morphine and codeine were the primary accessible opioids in a report on the availability and accessibility of opioids for the therapy of cancer pain in 25/52 African nations, including Kenya (20). This necessitates immediate attention to the knowledge gap in morphine use among doctors and the paucity of alternate opioids for end-of-life renal failure patients.

Limitation of Study

This research was carried out in a Christian mission hospital in Kenya with both local and international clinicians. The findings might not be indicative of Kenya's condition hence not generalizable. A comparable study should be carried out in additional Kenyan hospital settings that are more representative of the country

CONCLUSION AND RECOMMENDATION

Doctors' training in providing end-of-life care is lacking, with 40% of responders having received no undergraduate instruction. Universities in Kenya with medical schools should explore developing a standardized curriculum for palliative and end-of-life care education. All doctors should receive EoLC training during their undergraduate and postgraduate medical education, according to curriculum reviewers. Both classroom and practical bedside tutorials should be included in end-of-life care training for undergraduates and postgraduates.

It would be beneficial to do a qualitative study to investigate the underlying elements that influence doctors' attitudes in EoLC. More research on the management of delirium and dyspnoea in end-of-life care is needed to fill up the knowledge gaps in these two areas.

This study recommends further studies on how to change the Physician's approach to end-of life care practices through development of policies and reviewing guidelines and standards addressing end-of-life care practices which is fraught with ethical and medical dilemmas carried by healthcare professionals. This study recommends urgent need to develop a standardized curriculum for palliative and end-of-life care education. Further, there is need to develop end-of-life policies and guidelines

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