

## Assessment of Attitude and Knowledge Towards the End-Of-Life Care Amongst Nurses Working at Kigali University Teaching Hospital, Rwanda

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### ABSTRACT

**BACKGROUND:** To provide quality end of life care, nurses must have a good level of knowledge and an appropriate attitude towards palliative care (PC). PC is conventionally regarded as the care of a moribund patient. The scope of PC now also covers patients suffering from a chronic disease. At Kigali University Teaching Hospital (CHUK), no dedicated unit for PC exists- instead, there is an integrated service offered to patients wherever they are admitted.

This study aimed at assessing nurses' attitude and knowledge towards palliative and end of life care amongst nurses at CHUK.

**METHODS:** A hospital-based descriptive, cross-sectional quantitative study carried out on 160 nurses working at CHUK. The Frommelt's Attitude Towards Care of the Dying (FATCOD) Scale and Palliative Care Quiz for Nursing (PCQN) were used to assess the knowledge and attitude towards palliative and end of life care. SPSS 20.0 was used for analysis.

**RESULTS:** 160 nurses participated in the study, 53.7% had a favorable attitude towards PC and end of life care, while 56% of responders had poor overall knowledge towards PC with a mean score of 5.76 (SD± 2.08). There was a statistically significant relationship between nurses' working experience in caring for terminally ill patients with their attitude towards end-of-life care (p-value 0.002) and no statistical difference between the mean scores of nurses' knowledge towards PC and their level of education (p-value 0.7).

**CONCLUSION:** The nurses' attitude towards PC and end of life care was favorable but they had poor knowledge.

**Keywords (MeSH):** Attitude, Knowledge, Nurses, Palliative care, Terminal care.

### INTRODUCTION

The need for palliative care has never been greater and is on the rise due to the world's ageing population and increasing incidence of cancer and other non-communicable diseases. Despite the

worldwide need for palliative care, the specialty is under-developed [1]. The changing demographics and epidemiology of life-limiting illnesses worldwide have shaped a critical and increasing need for palliative care development [2]. The integration of palliative care with conventional

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healthcare across the world has recently advanced [3]. The World Health Organization (WHO) estimates that each year 20 million people need palliative care at the end of life, 67% among older adults (60 years of age or older), and 6% among children [1,2]. Cardiovascular disease-related deaths comprise over 38% of deaths, 34% due to cancer causes, and 10.3% of deaths accounted for chronic respiratory conditions. Worldwide, HIV/AIDS accounts for 5.7% of deaths, although its impact overshadows cancer [1,4].

Palliative care is regarded as a holistic approach that improves patients' quality of life and their families facing complications related to life-threatening diseases. Palliative care prevents and reduces suffering through the timely documentation, accurate assessment and management of pain and other related problems, whether physical, psychosocial or spiritual.

When the patient's condition is no longer likely curable and death is an obvious outcome, the patient needs holistic care regardless of their condition. The purpose of end of life care is to help all those with advanced incurable diseases to live comfortably in their last few days and to die with dignity. Worldwide, there is confusion between the end of life care and palliative care. End of life care enables the compassionate and palliative care needs of both patient and family to be recognized and met during the last phase of life and into mourning [5]. According to the WHO, palliative care intends to avoid and dismiss pain by timely documentation, faultless examination and treatment of pain or other health issues, including physical, psychosocial and spiritual [6].

The decision to start palliative care (PC) is mainly made by the clinician (death of incurable malignancy), though nowadays PC is seen as an esteemed end-of-life care method, considering symptom control and complete care for patient and relatives. PC can not only be given to those with progressive malignancy but also patients with any advanced disease, including end-stage cardiomyopathies, kidney failure, liver failure, and other neurological disorders [7]. Most health care providers consider initiating palliative care when vigorous curative treatment is unsuccessful, whereas others suitable initiate end of life care whenever the poor prognosis is obvious [7].

In the United Kingdom (UK), guidance is used from the general council, which states that patients are

considered for end of life care once death is likely within 12 months and in those with progressive, incurable illnesses.

In developed countries, most people can afford medical care, and they seek a medical consultation timely. The medical workup or paraclinical investigation with effective treatment for illnesses were upgraded, the death is considered a deplorable ending to circumvent [5].

In low-income countries, for multifaceted cultural, economic and political explanations, virtuous health and respectable care when illness impinges remain unaffordable as care often depends on patient and healthcare workers who are familiar to end of life care [5,8].

In Rwanda, there was a tremendous improvement in the public health sector with the United Nations Millennium Development Goals (MDG) achievement. The care of patients with non-communicable chronic diseases has improved, with a particular emphasis on palliative care. In Rwanda, the Ministry of Health advocates that palliative care should be adequate and fairness should be warranted in all aspects of health service delivery, including palliative care for incurable diseases [9,10].

From 2004 to date, many care providers are trained in providing palliative care and in 2011, the Rwandan government released a policy regarding palliative care to be implemented.

In March 2013, Kibagabaga district hospital became a national center for palliative care where the care providers were trained by experts in that domain [9].

There is a need for training nurses in palliative and end of life care across the country, as both methods of care are invaluable to those with terminal and chronic illnesses. The first step that may help improve the end of life and palliative care should be developing a strategy to support and educate nurses about the end of life care or palliative care through assessment of their knowledge and attitudes.

With this background, this study aim at assessing the nurses' attitude and knowledge towards the end of life care, as well as to determine the association between attitude and knowledge towards PC and end of life care among nurses working at Kigali University Teaching Hospital (CHUK), the largest tertiary-level referral Hospital in Rwanda.

## METHODS

**Study design:** This study is a hospital-based descriptive cross-sectional explorative study focused on registered staff nurses working at Kigali University Teaching Hospital (CHUK), from 03rd until 28th April 2017 and the reporting was done following STROBE Checklist.

CHUK is the main tertiary-level referral Hospital with a capacity of 519 beds, located in Kigali City, Rwanda, with a catchment area covering almost 70% of referrals all over the country.

**Participants:** We considered the nurses working in the pediatrics department, gynecology wards, internal medicine department and intensive care Unit at CHUK.

All nurses working at CHUK in the Accident and Emergency department for Adult, Adult Intensive Care Unit, Pediatric Intensive care Unit (PICU), Pediatric High Dependent Unit (HDU), Pediatric Hemato-Oncology Unit, Internal Medicine (Wards 3,4,6), Dialysis Unit (Nephrology Unit), Gynecology (wards 4, 5) were included in this study due to their daily exposure to patients mostly requiring a palliative care component. Nurses working in other departments or wards were excluded.

The purpose of this study and its importance were explained to participants and thereafter voluntary participation in the study was respected.

**Sample size:** The study used a purposive sampling design. We used the following formula to determine the sample size as it was assumed that the population taken into consideration was small.

$$n = \frac{NZ^2 pq}{(E^2(N-1) + Z^2 pq)}$$

**n=160**

- 160 nurses were obtained and recruited in the study.
- n (160) was the required sample size
- N (274) was the population size: Nurses working in the concerned departments
- Z is the value that specifies the level of confidence or risk level the researcher want when data are analyzed. Typical levels of confidence for surveys was 95%, in which case z is set to 1.96.
- p and q are the population proportions of an attribute that are present in the population. Researchers set them each to 0.5.
- E sets the accuracy of sample proportions (also

known as the level of precision or sampling error). Researchers want to know the proportion of individuals with an accuracy of plus or minus 5%. Thus E is set to 0.05.

The above-mentioned formula helped us to get a sample size of 160 respondent nurses.

**Data Collection:** A self-administered English questionnaire was used for data collection. The attitude scale (Frommelt, 1991) was adopted from Frommelt Attitude Towards Care of the Dying (FATCOD) and modified where necessary [11]. The knowledge of nurses on palliative and end-of-life care was assessed using the Palliative Care Quiz for Nursing (PCQN) [12]. The information on attitude was collected as per the Frommelt framework aforementioned and this used a five-point scale. This was used to represent nurses' attitude to a specific topic and this was scored on a five-point scale; 1 (Strongly Disagree), 2 (Disagree), 3 (Uncertain), 4 (Agree) to 5 (Strongly Agree). A higher score indicated a positive attitude towards PC and end-of-life care. The knowledge questionnaire came from the PCQN using Yes, No, or Don't know answers. A higher score indicated better knowledge.

**Data analysis:** The data validation and clearing were done with Epi-data 3.1 version. The data was first entered into Epi-data then exported to SPSS 20.0 version for analysis.

Knowledge, attitude and practice about palliative care were dependent variables. Socio-demographic characteristics and professional characteristics represented independent variables.

The regression analysis was Binary Logistic Regression due to the fact that the explained variable was "Attitude", which from the literature is positive or negative, therefore, dummy coded (1 if the attitude was positive or 0 if the attitude was negative). To operationalize this variable, a positive attitude was considered if the participant gets 50% and above of the total score of (FATCOD) scale and negative attitude otherwise [11]. Using the same logic as above, the knowledge of nurses about PC and End-of-Life Care was binary coded by taking sufficient (good) knowledge if the respondent scores 75% and above of the total score of the Palliative Care Quiz for Nursing (PCQN) scale [12].

In summary, the following operational definition has been considered:

Favorable attitude:  $\geq 50$  of the total score of (FATCOD) Scale

Unfavorable attitude: < 50 of the total score of (FATCOD) Scale

Good knowledge:  $\geq$  75% of a total score of the Palliative Care Quiz for Nursing (PCQN) scale

Poor knowledge: < 75% of a total score of the Palliative Care Quiz for Nursing (PCQN) scale

**Ethical considerations:** Ethics approval was given by the Research and Ethics Review Committee of the CHUK. The purpose of this study and its importance were explained to participants before deciding to be part of the study. The study was conducted in accordance with the principles of the Helsinki Declaration and good clinical practice. The approval letter to conduct this research was obtained with a register number Ref: EC/CHUK/430/2017. No physical, social, emotional, legal and/or financial risks were identified. Each participant was assigned a unique study identifier number. A password-protected linking study ID and personal identifier (names, CHUK staff ID) was kept separately by the principal investigator (PI). Only the researcher and the research team had access to the study data and information. A consent form was completed and signed by each participant before his/her enrollment in this study. For this research project, funding was obtained for data collection and statistical analysis from CHUK Research and Education Division. There were no incentives offered to participants.

## RESULTS

The majority of respondents (99 representing 61.9 %) were within the age 31- 40 years, followed by 31 (19.3%) were of 41-50 years and 30 (18.8%) were of 20-30 years old. There were 138 (86.3 %) female nurses and 22 (13.7%) males. The majority of participants, 128 (80.0%), had A1 level in nursing education, 22 (13.8%) with bachelor's degree, A2 level in Nursing represented at 5.6%, and one participant had Master's level representing 0.6%. Most nurses: 69 (43.1%) had 6-10 years of experience, followed by those who had experienced less than 5 years represented at 40.6%. Most of our responders acknowledged an experience of 6-11 years in managing dying patients in their respective wards (Table 1). Table 2 highlights the attitudes of nurses toward the end of life care. More than half of the nurses were more likely to agree that nursing care of a dying patient is a worthwhile learning experience (56.7%). The majority of nurses (66.3%) disagree

that they would not be assigned to care for a dying person; on the other hand, approximately (81.9%) of nurses agreed with the benefits of involving a family in the physical care of the patient dying person.

**Table 1: Socio-demographic characteristics of participants**

| Characteristics   | N (160) | %    |
|---|---------|------|
| <b>Sex of participants</b>                              |         |      |
| Male  | 22      | 13.7 |
| Female  | 138     | 86.3 |
| <b>Age of participants</b>                              |         |      |
| 20-30 years   | 30      | 18.8 |
| 31-40 years   | 99      | 61.9 |
| 41-50 years   | 31      | 19.3 |
| <b>Marital status</b>                                   |         |      |
| Married   | 131     | 81.9 |
| Single  | 22      | 13.7 |
| Divorced  | 7       | 4.4  |
| <b>Level of education</b>                               |         |      |
| A2 level  | 9       | 5.6  |
| A1 level  | 128     | 80   |
| Bachelor degree   | 22      | 13.8 |
| Master's level  | 1       | 0.6  |
| <b>Working experience</b>                               |         |      |
| 0-5 years   | 65      | 40.6 |
| 6-10 years  | 69      | 43.1 |
| 11-15 years   | 15      | 9.4  |
| 16-20 years   | 11      | 6.9  |
| <b>Experience in caring for a terminally ill person</b> |         |      |
| 0-5 years   | 48      | 30   |
| 6-11 years  | 74      | 46.3 |
| $\geq$ 12 years   | 38      | 23.7 |

**Table 2: Distribution of Nurses' attitude towards End-of-life care**

| Statement  | Strongly disagree | Disagree   | Uncertain  | Agree      | Strongly agree |
|--|-------------------|------------|------------|------------|----------------|
| 1. Giving nursing care to a dying person is a worthwhile learning experience                                       | 31 (19.4%)        | 19 (11.9%) | 19 (11.9%) | 46 (28.8%) | 45 (28.1%)     |
| 2. Death is not the worst thing that can happen to a person  | 71 (44.4%)        | 26 (16.3%) | 16 (10%)   | 28 (17.5%) | 19 (11.9%)     |
| 3. I'd be uncomfortable talking about impending death with the dying person  | 35 (21.9%)        | 32 (20%)   | 19 (11.9%) | 35 (21.9%) | 39 (24.4%)     |
| 4. I would not be assigned to care a dying person  | 70 (43.8%)        | 36 (22.5%) | 10 (6.3%)  | 27 (16.9%) | 17 (10.6%)     |
| 5. The nurse should not be the one talk about death with the dying person  | 49 (30.6%)        | 36 (22.5%) | 9 (5.6%)   | 39 (24.4%) | 27 (16.9%)     |
| 6. The length of time required to give nursing care to a dying would frustrate me                                  | 47 (29.4%)        | 29 (18.1%) | 9 (5.6%)   | 44 (27.5%) | 31 (19.4%)     |
| 7. I would be upset when the dying person I was caring for gave up hope of getting better                          | 30 (18.8%)        | 30 (18.8%) | 27 (16.9%) | 52 (32.5%) | 21 (13.1%)     |
| 8. It is difficult to form a close relationship with the family of a dying person                                  | 46 (28.8%)        | 35 (21.9%) | 16 (10%)   | 41 (25.6%) | 22 (13.8%)     |
| 9. There are times when death is welcomed by a dying person  | 27 (16.9%)        | 17 (10.6%) | 25 (15.6%) | 54 (33.8%) | 37 (23.1%)     |
| 10. When a patient asks, "Nurse am I dying" I think it is best to change the subject to something cheerful         | 45 (28.1%)        | 35 (21.9%) | 8 (5%)     | 43 (26.9%) | 29 (18.1%)     |
| 11. The family should be involved in physical care of the dying person   | 16 (10.0%)        | 9 (5.6%)   | 4 (2.5%)   | 69 (43.1%) | 62 (38.8%)     |
| 12. I am afraid to become friends with a dying person  | 58 (36.3%)        | 43 (26.3%) | 25 (15.6%) | 20 (12.5%) | 14 (8.8%)      |
| 13. I would feel like running away when a person died  | 39 (24.4%)        | 39 (24.4%) | 13 (8.1%)  | 37 (23.1%) | 32 (20.0%)     |
| 14. Families need emotional support to accept the behavior changes of a dying person                               | 4 (2.5%)          | 4 (2.5%)   | 9 (5.6%)   | 52 (32.5%) | 91 (56.9%)     |
| 15. Families should be concerned about helping their dying relative make the best of his/her remaining life        | 7 (4.4%)          | 6 (3.8%)   | 17 (10.6%) | 63 (39.4%) | 67 (41.9%)     |
| 16. The dying person should not be allowed to make decisions about his/her physical care                           | 67 (41.9%)        | 39 (24.4%) | 13 (8.1%)  | 27 (16.9%) | 14 (8.8%)      |
| 17. Families should maintain as normal an environment as possible for their dying relative                         | 26 (16.3%)        | 19 (11.9%) | 26 (16.3%) | 62 (38.8%) | 27 (16.9%)     |
| 18. It is beneficial to verbalize his/her feelings   | 7 (4.4%)          | 8 (5.0%)   | 29 (18.1%) | 57 (35.6%) | 59 (36.9%)     |
| 19. Nurses should permit dying persons to have flexible visiting schedules   | 9 (5.6%)          | 14 (8.8%)  | 16 (10.0%) | 57 (35.6%) | 64 (40.0%)     |
| 20. The dying person and his/her family should be the decision-makers  | 67 (41.9%)        | 39 (24.4%) | 13 (8.1%)  | 27 (16.9%) | 14 (8.8%)      |
| 21. Nursing care should extend to the family of the dying person   | 7 (4.4%)          | 6 (3.8%)   | 16 (10.0%) | 70 (43.8%) | 61 (38.1%)     |
| 22. Addiction to pain-relieving medication should not be a nursing concern when dealing with a dying person        | 53 (33.1%)        | 31 (19.4%) | 20 (12.5%) | 37 (23.1%) | 19 (11.9%)     |
| 23. I would be uncomfortable if I entered the room of a terminally ill person and found him/her crying             | 39 (24.4%)        | 33 (20.6%) | 16 (10.0%) | 42 (26.3%) | 30 (18.8%)     |
| 24. Educating families about death and dying is not a nurse responsibility   | 52 (32.5%)        | 32 (20.0%) | 23 (14.4%) | 31 (19.4%) | 22 (13.8%)     |
| 25. Families members who stay close to a dying person often interfere with the professional's job with the patient | 15 (9.4%)         | 20 (12.5%) | 32 (20.0%) | 51 (31.9%) | 42 (26.3%)     |
| 26. It is possible for nurses to help patients prepare for death   | 8 (5.0%)          | 10 (6.3%)  | 13 (8.1%)  | 39 (24.4%) | 90 (56.3%)     |

The attitudes toward the length of time required to give nursing care to a dying person were almost equally distributed from agreeing to disagree (disagree 47.5%, agree 46.9%). The nurses' attitudes towards family maintaining a normal environment for their dying relative were found to be 45.7% who agreed compared to 27.2 % who disagreed. Almost half of the responders (50.7%) disagreed with the attitude of nurses, saying that it is difficult to form a close relationship with the family of a dying member, with 39.4% agreeing with this statement. Approximately 66.3% of nurses disagreed with attitudes that the dying person and his/her family should be the in-charge decision-makers and only 25.7% agreed with this. Approximately 81.9% agreed that nursing care should extend to the family of the dying person.

**Table 3: Overall nurses' attitude towards end-of-life care**

| Level of attitude | Frequency  | % Age      |
|-------------------|------------|------------|
| Poor attitude     | 67         | 41.87      |
| Moderate attitude | 6          | 3.75       |
| Good attitude     | 86         | 53.75      |
| <b>Total</b>      | <b>160</b> | <b>100</b> |

There were equally distributed nurse attitudes on the agreement and disagreement (agree: 45.1% vs disagree: 45%) on the fact that he/she would be uncomfortable if he/she entered the room of a critically ill person and found him/her crying.

**Table 4: Measurement of the knowledge variable**

| CHARACTERISTICS |  | YES          | NO          | DON'T KNOW |
|-----------------|--|--------------|-------------|------------|
| 1.              | Do you know the definition of palliative care  | 149 (93.1%)  | 10 (6.3%)   | 1 (0.6%)   |
| 2.              | Do you know the difference between palliative care and end-of-life care  | 126 (78.8%)  | 23 (14.4%)  | 11 (6.9%)  |
| 3.              | Palliative care is only appropriate in situations of downhill trajectory or deterioration in conditions                                    | 61 (38.1%)   | 74 (46.3%)* | 25 (15.6%) |
| 4.              | The extent of the disease determines the method of pain treatment  | 81 (50.6%)   | 59 (36.9%)* | 20 (12.5%) |
| 5.              | Adjuvant therapies are important in managing pain  | 105 (65.6%)* | 33 (20.6%)  | 22 (13.8%) |
| 6.              | Drug addiction is a major problem when morphine is used on a long-term basis for the management of pain                                    | 91 (56.9%)   | 52 (32.5%)* | 17( 10.6%) |
| 7.              | The provision for palliative care requires emotional detachment  | 60 (37.5%)*  | 81 (50.6%)  | 19 (11.9%) |
| 8.              | During the terminal stages of an illness that can cause respiratory depression, is it appropriate to initiate treatment of severe dyspnea? | 109 (68.1%)* | 29 (18.1%)  | 22 (13.8%) |
| 9.              | The philosophy of palliative care is compatible with that of aggressive treatment  | 38 (23.8%)   | 85 (53.1%)* | 37 (23.1%) |
| 10.             | The use of placebos is appropriate in the treatment of some types of pain  | 101 (63.1%)  | 41 (25.6%)* | 18 (11.3%) |
| 11.             | Meperidine (Demerol) is not an effective analgesic for the control of chronic pain   | 39 (24.4%)*  | 53 (33.1%)  | 68 (42.5%) |
| 12.             | The accumulation of losses renders burnout inevitable for those who work in palliative care  | 59 (36.9%)   | 61 (38.1%)* | 40 (25.0%) |
| 13.             | Manifestations of chronic pain are different from those of acute pain  | 137 (85.6%)* | 19 (11.9%)  | 4 (2.5%)   |
| 14.             | Terminally ill patient has the right to choose "Do not resuscitate" (DNR)  | 93 (58.1%)   | 52 (32.5%)* | 15 (9.4%)  |
| 15.             | Terminally ill patients should be encouraged to have hope against all odds   | 115 (71.9%)* | 24 (15.0%)  | 21 (13.1%) |

\*Indicates the correct answers

**Table 5: Measurement of the general knowledge**

|    | CHARACTERISTIC  | YES         | NO          | DON'T KNOW |
|----|---|-------------|-------------|------------|
| 1. | Do you think that the cost incurred in providing end of life care to a dying person is too high and not affordable for the patient and family | 73 (45.6%)  | 64 (40.0%)* | 23 (14.4%) |
| 2. | Do you believe that the end-of-life care provision (cost of drugs and survival) should be entirely the responsibility of the government       | 81 (50.6%)  | 66 (41.3%)* | 13 (8.1%)  |
| 3. | Do you believe that the cost of drugs provided at the end of life care should be entirely funded by the government (e.g.: ARV for HIV)        | 116 (72.5%) | 34 (21.3%)* | 10 (6.3%)  |

\*Indicates the correct answers

Almost a half (52.5%) of respondents disagreed that educating families about death and dying is not a nurse responsibility, whereas 33.9% agreed. Interestingly almost 80.7% of nurses agreed with the attitude that nurses could help patients prepare for death. Surprisingly, 45.0% agreed that when a patient asks, "Nurse, am I dying?" it is best to change the subject to cheerful (Table 2).

The majority of responders (93.1%) confirmed that they know the definition of palliative care, and 78.8% of participants knew the difference between palliative care and end-of-life care.

Only 74 (46.3%) gave the correct answer that PC is applicable only in states where there is evidence of a downhill trajectory or deterioration. One-third of participants, 52 (32.5%) participants, responded correctly that addiction is noticed as a major health problem when morphine is used in the long term. Tough, 65.6% agreed that adjuvant therapies are important in pain management, 25.6% responded correctly that the use of a placebo is appropriate in the treatment of some types of pain, and 24.4% responded that Meperidine (Demerol) is not an effective analgesic for the control of chronic pain.

Only 61 (38.1%) participants disagreed that the accumulation of losses renders burnout inevitable for those who seek work in palliative care and 71.9% responded well that terminally ill patients should be encouraged to have hope against all probabilities. The mean score was 5.76, with (SD  $\pm$  2.08) representing an overall score of (44.4% of the total 13), which suggests poor knowledge (Table 3).

There was no statistically significant difference between the mean scores of nurses' knowledge towards palliative care and their level of education

(p-value was 0.71). The majority of participants, 128 (80.0%), had A1 level in nursing education, 22 (13.8%) with bachelor's degree, 5.6% with A2 level in Nursing, and only one participant had Master's level representing 0.6%.

There was a statistically significant relationship between nurses working experience in caring for terminally ill patients with their attitude toward palliative and end of life care (p-value of 0.002). The majority of nurses, 69 (43.1%) had 6-10 years of experience, followed by those who had an experience of less than 5 years, represented at 40.6%. Most of our responders acknowledged an experience of 6 year's experience in managing a dying patient in their wards (Table 4).

Only 64 out of 160 participants representing 40% of participants, disagree that the cost incurred in providing end of life care to dying person is too high and not affordable, whereas 50.6% believe that the end-of-life care provision should be entirely the government's responsibility. Furthermore, 72.5% thought that the cost of drugs provided in end-of-life care should be entirely subsidized by the government, as is the case for the supply of antiretroviral therapy drugs (Table 5).

## DISCUSSION

This was the first study conducted amongst the registered nurses working at Kigali University Teaching Hospital on the attitudes towards palliative care. It was necessary to establish the nurses' baseline knowledge and beliefs. Assessing nursing knowledge was compulsory as it is interrelated with attitude as well as behavioral consistency [13]. The training of nurses and incorporation of PC



practices is an overwhelming concern for educators and health policymakers, so long as the nurses still have poor knowledge in dealing with chronic and terminally ill patients [14,15]. This study highlighted the poor knowledge of PC and end of life care with an overall mean score (5.76 PCQN out of 13 considered questions). This result related to the lack of specific training on PC for all nurses involved in the care of dying patients and the lack of updating information regarding PC in the form of continuous professional development [16,17]. The results were in accordance with findings in other studies [18]. Our results were not supported by S. R. Hons et al. [19], with 11.7 as the mean score for all certified nurses but poor knowledge for Assistants in Nursing with 5.8 [19]. Canning et al. [20,21] highlighted the need for training in PC, as more than half of nurses recorded were not ready to deliver PC.

The inadequate PC knowledge level amongst nurses was highlighted by Kassa et al. [22], where only 30.5% of nurses had good knowledge and 20.8% only in a study by Ahmed et al. [23].

In our study, 53.7% of nurses had a good attitude towards PC and end of life care. This result could be attributable to the participants' experience in caring for terminally ill patients, where 23.7% had had more than 12 years of experience with caring for terminally ill patients and 43.1% had between 6-10 years of experience. There were similar results by Kassa et al. [22] with (76%) having a favorable attitude towards PC. The results were in accordance as well with Karkada et al. [24]; 92.8% of nursing students had favorable attitude (56.7±8.5) towards PC [24], similarly to the results by P. G. Schrader et al. [25].

There was no statistically significant association between nurses' qualifications and their mean score on knowledge on palliative care in our study.

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The contrary result has been found by Ahmed et al.[23]. The difference might be related to the level of education for our nurses and the fact that PC was not part of their nursing education program. On the other hand, there was a highly statistically significant relation between the working experience of nurses who participated in our study with their attitude towards palliative and end of life care. This result was consistent with the findings of Ahmed et al. [23, 26]. In summary, when the nurses increase their favorable attitude towards PC, end-of-life care improves.

As limitations, this study was conducted in only one hospital in Rwanda and not all nurses were even included in this study; thus, the result cannot be generalized. Therefore, the researchers would recommend more studies in other hospitals across the country to get a general view on palliative care and end of life care in Rwanda.

## CONCLUSION

The role of nurses in end-of-life care is paramount and their education and training in this field should be prioritized. The findings of this study have shown that almost half of respondents have had a favorable attitude towards the end of life care but poor knowledge towards palliative care. Palliative care needs to become part of the nursing curriculum as well as incorporating continuous professional development. The Human Resources Department of Kigali University Teaching Hospital should organize formal ongoing professional development accredited activities for all nurses on the principles of palliative care.

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