

# **Assessment of Knowledge, Attitude, Practice and Barriers toward Palliative Care among Pediatric Oncology Health Care Providers in Southern Philippines**

**A Thesis Submitted to  
the Department of Cancer Control and Population Health  
in Partial Fulfillment of the Requirements  
for the Master's Degree of Public Health**

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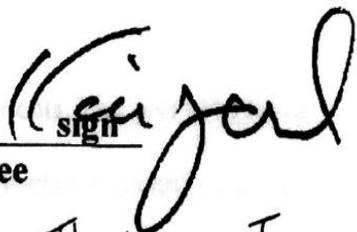
**July 2019**

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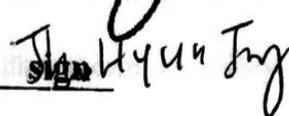
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## **ABSTRACT**

### **Assessment of Knowledge, Attitude, Practice and Barriers toward Palliative Care among Pediatric Oncology Health Care Providers in Southern Philippines**

#### **BACKGROUND:**

Palliative care in the Philippines is categorized as 3A base on the classification of Global Atlas of Palliative Care and End of Life, considered to have localised hospice care provision. However, insufficient education and awareness toward palliative care among medical professionals are accounted as the biggest challenges for the health care providers and for their patients. The accessibility to palliative care is inadequate in southern Philippines. The stigma toward palliative care is one of the major barriers for reaching out to palliative care, especially among the pediatric oncology patients.

#### **STUDY OBJECTIVES:**

The purpose of this study is to assess the level of knowledge, attitude and practice of oncology health care providers towards pediatric palliative care and to discover other factors that limits the pediatric oncology patients to receive pediatric palliative care. Lastly, identify the barriers in providing pediatric palliative care by the cancer centers to the pediatric oncology patients.

## **METHODS:**

Institution based cross-sectional study design was used to carry out the study to the 515 pediatric oncology health care providers which were consisted of 102 oncology doctors, 256 medical oncology nurses and 158 oncology allied health workers. The study participants were selected using a systematic random sampling method to the 13 tertiary care hospitals that offers pediatric oncology palliative care at southern Philippines. Adopted and Structured questionnaire was circulated to assess the Knowledge, Attitude and Practice (KAP) of pediatric oncology health care providers and to evaluate the factors such as barriers in providing palliative care and hinders in providing palliative care. The data was entered, cleaned and analyzed using excel and SPSS version 19.0 software. The chi-square test was employed to assess the association between variables. A p-value of less than 0.05 was considered as statistically significant.

## **RESULTS:**

From the total of 515 pediatric oncology health care providers selected, response rate of 97.4% (n = 500) were registered. Among the respondents 287(57.4%) had insufficient knowledge and 259 (58.1%) had favorable attitude towards palliative care. In contrast, the level of practice showed that the majority 384 (76.8%) of pediatric oncology health care providers had inappropriate practice towards palliative care. Results showed that 97% to 99% of pediatric oncology health care

providers believed that the inadequate research evidence base to guide and measure the quality of life and lack of staff training in pediatric palliative care were the major barriers in providing palliative care by the cancer centers to the pediatric oncology patients. And 100% pediatric oncology health care providers affirmed that the ignorance and lack of awareness about the existing program and resources of palliative care were the major factors that limits the pediatric oncology patients to receive pediatric palliative care in southern Philippines.

## **CONCLUSION:**

The pediatric oncology health care providers had inappropriate training and knowledge aspect of practice, but their attitude towards palliative care was favorable. Majority of the participants identified inadequate research evidence base to guide and measure the quality of care was the main barriers of pediatric oncology health care to provide palliative care. Also, lack of awareness about the existing programs and resources have been perceived by the pediatric oncology health care providers as the major factors that hinders pediatric oncology patients to receive palliative care. Therefore, findings from this study showed us vital information to develop national pediatric oncology palliative care program by incorporating to the Department of Health and International Palliative Care Support through Continuing Professional Development to promote regular trainings to pediatric oncology health care providers and to advocate national campaign for palliative care to the target population.

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## **List of Abbreviations**

KAP	Knowledge, Attitude, Practice
PC	Palliative Care
AHW	Allied Health Worker
IARC	International Agency for Research on Cancer
NCR	National Capital Region
UP–PGH Hospital	University of the Philippines–Philippine General
PCCP	Philippine Cancer Control Program
DOH	Department of Health
NHPCCP	National Hospice and Palliative Care Council of the Philippine

# **1.Introduction**

## **1.1 Palliative Care and Pediatric Cancer Burden**

Palliative care aims to improve quality of life through prevention, early identification and relief of physical (including pain), psychological, psychosocial and spiritual suffering and by optimizing independent function [1] . It is an approach that improves the quality of life of patients and their families facing the problems associated with life-threatening illness through the prevention and relief of suffering by means of early identification, impeccable assessment and treatment of pain and other problems like physical, psychosocial and spiritual [2] . It is also a specialized medical care given to pediatric cancer patients living with a serious illness to improve their quality of life.

According to the International Agency for Research on Cancer (IARC), Asia has the world's highest number of cancer patients. More than half of all cancer deaths worldwide occur in this region and almost 7 million new cases were diagnosed in 2012, the last year for which continent-wide data is available, and the rate is rising. Many of these patients will require palliative care at some point, but very few will receive it. And as identified by WHO, an estimated 6.3 million children under the age of 15 years died

in 2017. 5.4 million of them were under the age of 5 and 2.5 million of those children died within the first month of life. This translates into 15, 000 under-five deaths per day. That is why the demand for the use of palliative care and hospice has grown rapidly in the past two decades for both child and adult's population.

In addition, upon identifying the burden and demand for health, there is an existing issue about providing quality health care, especially in palliative care. Several factors may account for the underutilization of hospice care, including confusion about terminology, misperception about its intent and scope, concerns about cost and insurance coverage, and potential mistrust because of perceived economic motives [3]. A lack of physician comfort with end-of-life conversations, including the fear of depriving patients of hope, can also create a barrier to hospice referrals.

## **1.2 The Needs of Palliative Care for Children**

Children with life-limiting illnesses often lack access to hospice care at home or in a dedicated facility when they reach the end of their lives[4]. Researchers have found that only 60% of pediatric oncology institutions offer hospice care, and as few as 40% of hospice and home health agencies provide hospice care for children [5] .Additionally, hospice care is seldom used by children with life-limiting illnesses and their families. In a white

paper produced by the Children's International Project on Palliative/Hospice Services (ChiPPs) for the National Hospice and Palliative Care Organization (NHPCO), experts in the field of pediatric, end-of-life care reported that less than 10% of the approximately 54,000 children dying annually receive hospice care .Others have drawn similar conclusions in studies of children with cancer and acquired immune deficiency syndrome (AIDS) [6].

The rate of children's hospice care utilization often does not match the need. For example, infants have the highest mortality of any pediatric age group but use hospice services the least [7]. Children who do use hospice care are often admitted late in their disease trajectory and have short lengths of stays, typically ranging from 1 day to 4 months[8].Although families may choose to forgo hospice care for personal reasons, this evidence suggests a critical problem in access to hospice care for children and their families.

### **1.3 Palliative Care in the Philippines**

The main concepts to consider in understanding the Filipino perspective on death and dying include cultural values and beliefs related to religion, family, and interpersonal harmony. Religion holds a central place in the life of Filipinos [9] .The Philippines is a predominantly Christian

nation, with Roman Catholics making up around 81% of the population [10]. Miranda and colleagues found that deeply religious Filipinos tended to attribute illness to reasons of God or a higher power [11]. The predominant belief in the causes of disease was the 'will of God', even though individuals also believed in personal responsibility.

In the late 1980s the movement toward palliative care and hospice care services in the Philippines began for patients with cancer [12]. Malignant neoplasms are ranked as the third most common cause of mortality for Filipinos, after diseases of the heart and diseases of the vascular system [13]. Today, hospice care services are available for terminally ill cancer patients, patients with other life-threatening illnesses, and their families [14]. Palliative care concepts and principles are part of the curriculum in major medical and nursing schools in the Philippines, and palliative care training program are delivered to health providers and volunteers [15].

The family is the basic social and economic unit of Filipino kinship. Although family is important in many cultures, the central role that the family plays in the lives of its members in the Philippines is unusually significant, with family being rated the most important source of happiness [16]. In times of illness, the extended family provides support and assistance [9]. Important values that might affect interactions between providers and

patients and families in the context of terminal illness include a strong respect for elders, a strong reliance on family decision makers in case of illness, and strong expectations of care by the family.

Published literature on palliative care and dignified dying in the Philippines is limited. Laurente and colleagues explored the phenomenon of death and dying as experienced by adult terminal cancer patients in the Philippines and their family caregivers and nurses. The nurses perceived patients with terminal cancer to be in a state of helplessness and powerlessness. The patients and family caregivers identified two important aspects of a peaceful death: first, the presence of family support and acceptance of the burden of the patient and, second, belief in God and dying as a time to surrender self. Interventions used to promote dignified dying for patients in the Philippines have been identified through interviews with patients [12]. Health care provider interventions identified by the patients included ensuring comfort, safety, and privacy; providing therapeutic touch; allowing prayer and religious music as desired; maintaining a quiet, well-ventilated, and pleasant-smelling environment; and staying with the patient. In focus group discussions, health care provider stated that human dignity is maintained when a patient's physical, psychological, and spiritual needs are met and when the patient is comfortable and clean; is able to participate in making significant decisions regarding the management of his or her

illness; can focus on unfinished business; has loved ones attending to his or her needs; can openly express concerns, plans, and wishes; has good and healthy family relationships; is at peace with God; and maintains quality of life [17].

### **1.3.1 The Philippine Palliative Care History**

In early 1980's, the Philippine Physician Society broke new ideas to create an innovation for the management of pain. From the mid-1990s onwards, palliative care in the country was enlarged by NGOs and the private sector. Several hospice care facilities opened during this period. Government support for palliative care for the poor is through the Philippine Charity Sweepstakes Office (PCSO), which covers the cost of patient hospitalization and the establishment of free medical and dental missions in depressed areas (Figure 1).

<i>Year</i>	<i>Development/Events</i>
1980	Important innovations were undertaken by Filipino doctors interested in the management of pain.
1989	Led to pain management being included in the Philippine Cancer Control Program and morphine becoming available in accredited government hospitals
1990	Pain relief incorporated to government cancer control program /Pain Society of the Philippines
1991	Philippine Cancer Society establish the home care programmed for indigent, terminally ill patient
2004	National Hospice and Palliative Care Council of the Philippines (NHPCCP)- under the auspices of the Philippine Cancer Society with 16 founding organizations and 81 individual members.
2008	98 organizations provide hospice and palliative care  Philippine National Cancer Control Program
2016	Aruga sa Batang may Cancer (ABC)  <i>(First and only organization that focused on caring for children with cancer)</i>

**Figure.1 History of Palliative care in the Philippines**

### **1.3.2 The Philippine National Cancer Control Program**

The Philippine Cancer Control Program (PCCP), which started in 2008, is an integrated approach utilizing primary, secondary and tertiary prevention in different regions of the country at both hospital and community levels. The goal is to establish and maintain a system that integrates scientific progress and its practical applications into a comprehensive program that will reduce cancer morbidity and mortality in the Philippines. The six pillars of the PCCP are: 1) epidemiology and research; 2) public information and health education; 3) prevention and early detection; 4) treatment; 5) training; and 6) pain relief [18].

Unfortunately, hardly is there any strategy directed specifically for childhood cancer. The PCCP is primarily focused on the top adult cancer sites whose major causes are known (where action can therefore be taken for primary prevention), such as cancers of the lung/larynx (anti-smoking campaigns), liver (vaccination against hepatitis B virus), cervix (safe sex), and colon/rectum/stomach (healthy diet) [18]. No strategy for early detection of childhood cancer had been included in the national program, nor are there plans on how effective treatment in children could be implemented.

This is probably because of the unfortunate notion that childhood cancer is a small proportion of the total data and therefore considered unimportant – a notion that is no longer tenable when viewed within the broader global context, and in how the disease affects the whole family in terms of major psychosocial disruptions, the broader economic issues of the disease, the prevailing human rights which should be accorded to children with this tragic malady, and the potentially high cure rates of cancer in children than in adults. In 1996, the Asian Development Bank (ADB) working with the Department of Health (DOH) undertook the Philippine Adult Health Project, which assessed prevention and control efforts for cancer in the Philippines [19]. The audit confirmed that mortality from cancer had increased substantially over time and was likely to continue increasing. Significant shortcomings in six areas were identified: 1) existing data and data gaps; 2) programmatic efforts, gaps and problems; 3) medical education; 4) policy issues; 5) treatment guidelines and problems; and 6) quality control of testing and screening services [20].

Recommendations were made for each of these areas with an urgent call for immediate implementation of all of the recommendations within five years. Effectively and efficiently

implemented, these recommendations could prevent the huge toll of premature death, disability and costs from cancer that will otherwise be forthcoming [18]. Disappointingly, no significant changes have occurred in these areas. Whatever activities that were implemented did not curb the advance of cancer in the country, or at the most was only successful in few places mainly in Metro Manila.

### **1.3.3 Cancer Pain Relief Program in the Philippines**

It is estimated that 30–50% of cancer patients in all stages of the disease will experience pain and 70–95% with advanced disease will have significant pain, but only a fraction of these patients receives adequate treatment. In a study on cancer pain among Filipino patients, 73% had pain related to their disease, 60% of which was persistent [21].

The DOH–PCCP identified cancer pain relief as a priority activity in 1989. It was the first activity that led the way to the Outreach Patient Services (the Hospice-At-Home Concept), pioneered by the Philippine Cancer Society. It primarily implements the WHO analgesic ladder, in a modified way cutting the ladder down to two steps.

## **1.4 Pediatric Cancer in the Philippines**

The country is densely populated, and the average life expectancy of its population is 68 years. Children under 15 account for 36% of the population. Child mortality is moderately high, and a relatively high proportion of younger children are under the recommended weight standards [22]. As a rule, the incidence (risk) of cancer increases with increasing age. In 2002 Childhood Cancer (0-14 years) comprised only 3.5% of all cancer cases, and a tenth of the cases that occurred among persons 65 years and older. The age-specific rate among children is about 1% of the rate among persons of age 65 years and older.

Cancer incidence data for the country are derived from two population-based cancer registries: Rizal and Manila [23], which both cover about 14% of the childhood population. The crude rate for childhood cancer in the Philippines is 103 annual new cases per million children, which allows prediction of a minimum of 3,500 new cases of childhood cancer [23]. This is the equivalent of almost 10 children who will be diagnosed with cancer each day.

Leukemia accounted for almost 50% of the total incidence of childhood cancer in the Philippines. Lymphoma appeared unusually low (<10%), but in agreement with other registries in Southeast Asia (7). Certain features are similar to those in other Asian populations (i.e. low incidence

of Wilms' tumor, Hodgkin's disease and Ewing's sarcoma), in contrast to relatively high incidence rates for retinoblastoma, and low rates for neuroblastoma and non-Hodgkin's lymphoma[17]

The NCR hosts 15% of the population and has the highest services present [24]. These include 168 secondary and tertiary hospitals, 43 primary hospitals, 32 DOH outpatient clinics and scores of private clinics. There are nine radiotherapy centers, three of them in government hospitals. There is no government cancer institute, but there are two comprehensive oncology departments and three children's hospitals, two public and one private. In 1998, 7 out of 13 pediatric surgeons, and 6 out of 9 pediatric oncologists in the Philippines were in Metro Manila [25]

Unfortunately, in the Philippines, although multi-disciplinary management is available and could potentially cure 80% of cases, only about 10% to 20% actually attains long-term survival[26]. In our experience for many years, two-thirds of patients are in advanced stages of their cancer at the time of diagnosis. This is because childhood cancer in the Philippines is not detected early enough for cure to be possible.

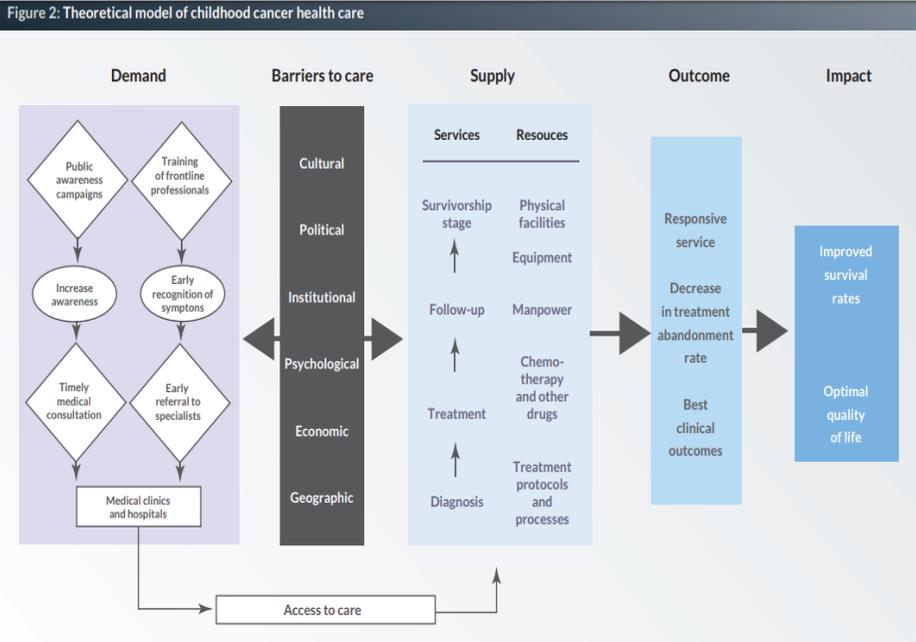
## **1.5 Pediatric palliative care in the Philippines and its barrier**

Barriers to effective management and palliative care of childhood cancer in the Philippines are the following: 1) subtle signs are not recognized promptly by frontline physicians at the primary levels of care; 2) patients and/or parents delay medical consultations, or when diagnosed will not opt for treatment, and; 3) for those who seek medical attention, there is no appropriate cancer treatment facility in the locality, or the parents do not know where to go to seek treatment. Due to financial reasons, those who are positively diagnosed to have cancer are not treated adequately with only one in five patients receiving gold standard treatment, mostly as paying patients [26]. Thus, for most pediatric patients with cancer in the Philippines, no treatment is given, or patients are initially treated but end up abandoning the treatment due to: 1) geographic inequity with cancer treatment facilities heavily concentrated in major cities, far and inaccessible to many patients, and 2) economic inequity when the majority cannot afford the costly treatment. There is a huge gap between the rich and the poorer patients. The cost of chemotherapy drugs and other supportive medicines remains the main barrier for the poorer service patients.

Three main reasons can account for these dismal observations. First, two-thirds of patients come to medical attention when the disease has reached an advanced stage such that a cure is no longer possible or require

very aggressive and expensive treatments that are available only in hospitals in cities. Second, often, families will opt not to undergo further treatment, or to receive palliative or supportive care for their patients due to financial constraints. And third, out of the 20% to 30% of children diagnosed at an early stage, a significant percentage (80%) are unable to continue follow-up visits or hospitalization [26].

The pediatric oncologists, numbering only about 539 all over the country, as well as a greater number of hematologists, are fully aware of these conditions facing Filipino cancer victims under their care. Hopelessness usually prevails in many affected families. Additionally, stakeholders are not effectively mobilized to ensure that strategies to control childhood cancer are targeted at those who are most in need, and major stakeholder groups were not considered in the development of effective cancer control strategies. This includes encouraging and pushing government to implement measures addressing issues of inequities of and poor access to cancer care. From the recent study of Philippines children cancer statistics, it depicts that in framework shown in Figure 2 the degree to which access to care is achieved depends on the gravity of the barriers encountered by patients in trying to access health-care services in hospitals. Targets for interventions therefore must consider variables that address dismantling these barriers to health-care access.[27]



**Figure.2 Theoretical model of childhood cancer health care**

## **1.6 Training program for pediatric oncology health care provider**

Prior to the 1990s, the care of children with cancer in the Philippines was provided by medical oncologists and hematologists mainly trained in adult patients. Childhood cancer can only be diagnosed accurately and treated effectively in three major cities where the specialists and facilities are available. Pediatricians who wanted exposure and experience in cancer chemotherapy and management enter a two-year adult medical

oncology training program which started to accept them in 1986 at the University of the Philippines–Philippine General Hospital (UP–PGH).

The development in the Philippines of pediatric oncology as a distinct subspecialty in pediatrics accelerated in the early 1990s with the return to the country of three paediatricians who trained in pediatric hematology-oncology in advanced centers abroad (i.e. US National Cancer Institute, the Children’s Hospital of Los Angeles, and The Children’s Hospital in Sydney, Australia). These three pediatric oncologists, together with two pioneering senior pediatricians who trained in the United States in the 1970s, provided clinical services to patients organized around a post-residency training program. A three-year clinical fellowship program in pediatric hematology-oncology started at the UP–PGH in 1991, followed by the PCMC in 1992. Since then, both training hospitals produced 39 graduates to date, and many of them are now practicing in the provinces outside Metro Manila.

At PCMC, chemotherapy provider training courses for nurses started in 2006 and had trained a total of 1,691 nurses so far. This became the impetus for PCMC to later develop a two-year nurse residency in general pediatrics and a one-year nurse clinical specialization in pediatric oncology nursing, which was implemented in 2013 with the approval of the training program by the Philippine Professional Regulatory Commission’s Board of

Nursing. Graduates were certified by PCMC as nurse specialists. Likewise, PCMC amended the training curriculum of its professional subspecialty society-accredited residency training program in pediatric pathology, pediatric surgery and pediatric radiology to include and integrate the basic concepts in pediatric oncology for their graduates to be an effective member of the multidisciplinary cancer treatment team.

In the second half of 2012, PCMC and MCM started training and accreditation of nurses as certified chemotherapy providers in all collaborating hospitals in the NCPAM's ALLMAP and Philhealth's Z-package, back-to-back with training on the storage, safe handling and preparation, and disposal of chemotherapy drugs for clinical pharmacists. These were identified as the immediate training needs, while PCMC is conducting an assessment of baseline capabilities in those hospitals in pathology, tumor surgery, imaging studies and radiotherapy to become the planning basis for the next training steps. Discussions are ongoing on the determination of baseline infrastructure and equipment, which could be the basis for proposal to DOH on hospital facility upgrades, particularly government hospitals where majority of poorer patients go for consultations and treatment. The current training program provided for an effective foundation for the development of pediatric oncology in the Philippines (18).

## **1.7 Study Objectives**

The purpose of this is to assess the level of knowledge, attitude and practice of pediatric oncology providers towards pediatric palliative care and to discover other factors that limits the pediatric oncology patients to receive pediatric palliative care. And to, identify the barriers in providing pediatric palliative care by the cancer centers to the pediatric oncology patients.

## **1.8 Research Questions**

This study aims to answer the following research questions:

1. What is the level of Knowledge, Attitude and Practice of pediatric oncology health care providers towards palliative care in the hospitals of southern, Philippines?
2. What are the perceived factors by the pediatric oncology health care provider that hinder the pediatric oncology patients to receive palliative care?
3. What are the perceived barriers of the cancer centers in providing palliative care to the pediatric oncology patients?

## 1.9 The necessity of this study

The study would be significant to the following:

- a. *The Philippines Department of Health (DOH)*, particularly the regional branch of it in Southern, Philippines. It will give a comprehensive information and understanding to the knowledge, attitude, practice and other associated factors of palliative care to the pediatric oncology patients in the Philippines that may use for crafting of policies and projects for the development of a more significant palliative care for pediatric cancer patients.
  
- b. *The health practitioners*, especially the Doctors, Nurses, Pharmacies and other allied healthcare workers. They can use the information to assess their performance and may apply it for the development of their full potential for pediatric oncology patients palliative care.

- c. *The hospitals who caters pediatric oncology patients in the Philippines.* The scrutiny would be a foundation for the improvement of knowledge, attitude and practices of their institution for the advancement of their palliative care to the pediatric cancer patients.
- d. *Future Researchers and Writers.* This study will benefit future researches on the subjects about palliative care and pediatric oncology patients as it provides a description for the assessment of knowledge, attitude, practices and other associated factors of palliative care to the pediatric oncology patients in the Philippines. It can also use as baseline data to help other institutions value awareness on pediatric oncology patient's condition that may contribute to the social, economic, and political dimensions for development.

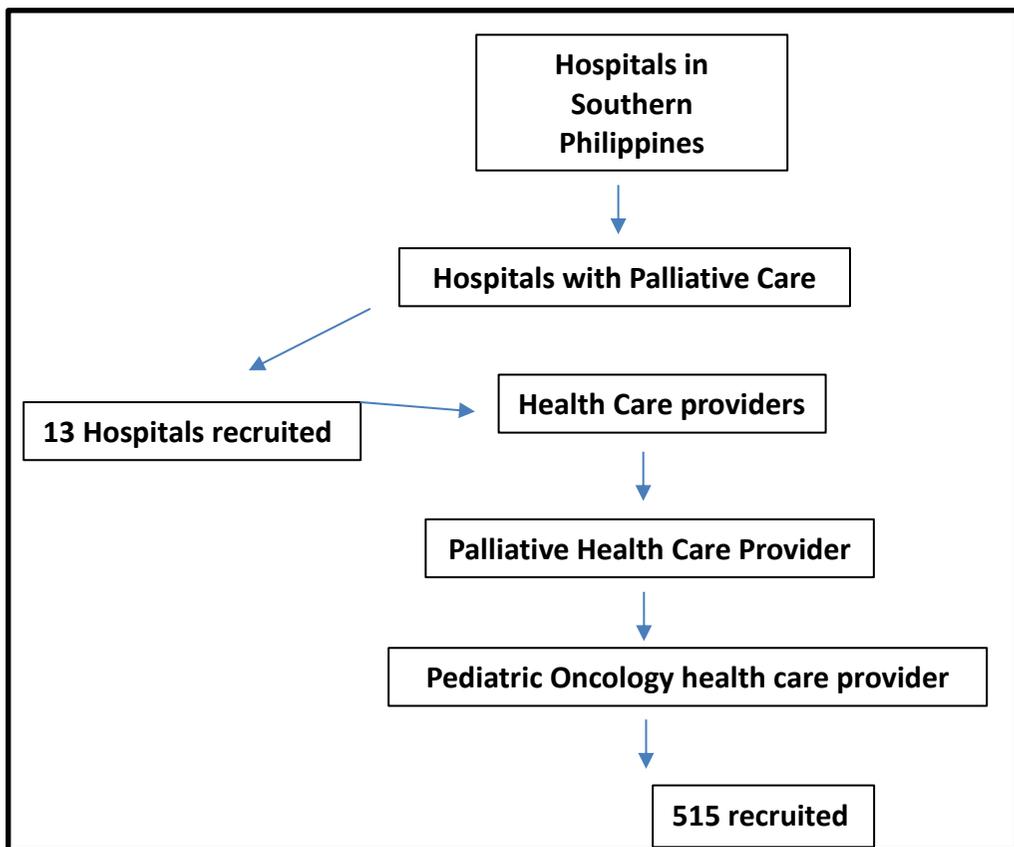
## **2 METHODS**

### **2.1 Study Design**

A descriptive cross-sectional survey using self-administered questionnaire was used to carry out the research study to the respondents using a systematic random sampling method. The independent variable was age, gender, educational level, years of experience, number of cancer patient in their practice within the period of service. The dependent variables included knowledge, attitudes, practices, and barriers regarding palliative care.

## 2.2 Study Subject

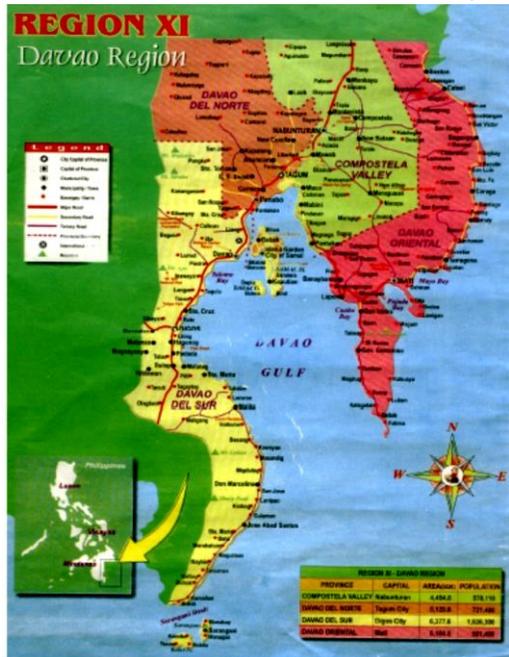
This study was confined to health care providers working in palliative care in Government and Non-Government hospitals in southern Philippines. Of the total number of institutions found in the region, only thirteen hospitals have palliative care services and were selected (Figure 3). The health care providers serving in pediatric palliative oncology ward of the selected hospitals were recruited to participate the study regardless of their years of service. However, health care providers working in the general ward, surgery ward and sterilization ward were excluded.



**Figure.3 Study Design and Subject Participation Flow**

## 2.3 Study Population

Southern Philippines (Figure 4) is located in the southeastern portion of the island of Philippines and lies between 5°20" and 9°30" north latitude and 124°20" and 126°35" east longitude. It is bounded on the North by the provinces of Surigao del Sur and Agusan del Sur; on the South by the Davao Gulf a Celebes Sea; on the East by the Philippine Sea and on the West by the provinces of Bukidnon, North Cotabato and Sultan Kudarat. It is known as the 4<sup>th</sup> largest city in the world and as of August 1, 2015 the total population was 4,893,318



**Figure 4: Map of Philippines showing geographical location of Southern area**

(2015 Census of Population POPCEN 2015) with annual growth of 4.36%, which ¾ of whom fall within children and youthful age group. The area serves as the main trade, commerce, and industry hub of Philippines. **Southern Philippines** (is home to Mount Apo, the highest mountain in the Philippines. The city is also nicknamed the "Durian Capital of the Philippines. The Participants were chosen from 13 hospitals (figure

5) geographically spread in Southern Philippines. Five of the 13 were tertiary hospital located in Davao City and serving a large socioeconomically diverse catchment area. Other 3 hospitals were chosen from Tagum City, in order to ensure geographic distribution. The other 5 hospitals were public hospitals in Panabo, Digos , Mati and Compostela Valley. A contact person was designated per hospital to coordinate the project and assisted the principal investigator to distribute and collect the questionnaires.

<b>13 recruited Hospitals</b>	<b>Bed Capacity</b>
Southern Philippine Medical Center	2,150
San Pedro Hospital	600
Davao Doctors Hospital	500
Davao Regional Medical Center	1,200
Brokenshire Hospital	400
Davao Medical School Foundation Hospital	750
Tagum Doctors Hospital	300
Ricardo Limso Medical Center, Inc	250
Panabo Polymedic Hospital	200
Alterado General Hospital.	250
Community Health Dev. Cooperative	200
Rivera Medical Center, Inc	300
Mati General Hospital	250

**Figure 5. Selected hospitals with palliative care in southern Philippines**

## **2.4 Study Sample size**

The sample size determination was based on a power of 80%, alpha of 5%, and a precision (effect size) of 3%, with a baseline proportion of 0.5 (used when the proportion is not known). The calculated sample size was 515.

## **2.5 Development of Questionnaires**

The Knowledge, Attitude and Practices survey is a quantitative method that provides access to a quantitative and qualitative information[28]. The knowledge questions were adopted from the Palliative Care knowledge test (PCKT)[29], questions such as “Morphine is the standard used to compare the analgesic effect of other opioids” and “Adjuvant therapies are important in managing pain” were modified according to the prevailing context of health institutions in the Philippines. Questionnaire items relating to attitude was generated on the basis of the contents of the Frommelt Attitude Toward Care of the Dying (FATCOD)[30]. The practice questions were also adopted from different related studies[31, 32] . Items on perceived barriers were extracted from the literature [33], and consist of 3 sections which were geographical location, hospital system, patients and health staff. The following is an example of an item relating to perceived barriers “Lack of

access to hospice services” responses were organized on scalar scoring scale each question had a group of answer points, one point was awarded for each checked answer; blank answers took zero. Checked items were summed up to get the most common barriers for health care provider.

The data collection instrument included four section. Section one: A socio demographic variables include (age, gender, level of education and occupation). Section two: before pre-test the attitude was measured through original FATCOD questionnaires which consist of 10 items however, after pretest the questionnaires were reduced to 5 items because some of the questions were difficult to understand and increase bulkiness of the questionnaire. The tool has a 6-point Likert Scale. This was used to represent people's attitude to a topic scored on 6 point scale, i.e 1 (Strongly Disagree), 2 (Slightly Disagree), 3 (Disagree) , 4 ( Agree) , 5 ( Slightly Agree) , 6 ( Strongly Agree) . Thus, possible score range was 0 to 30. A higher score indicates more positive attitude towards PC. The third section included knowledge questions which came from the Palliative Care knowledge test (PCKT) using Yes and No answers. A high score indicates better knowledge. The last section had 12 practical questions which researchers constructed from guidelines and various literatures related to PC practice.

The questionnaire was developed by the researchers for the purposes of the current study and pilot study was conducted by a panel of experts from National Cancer Center-Graduate School of Cancer Science and Policy, South Korea and Philippine Review Board Research Ethics which consist of 5 Physicians (Pediatric Medical Oncology ,and Physician with specialty from Palliative Care and Hospice ) 10 Nurses and 5 allied health care workers assigned in the oncology department, pediatric ward or palliative care unit to determine the clarity of questions, effectiveness of instructions ,completeness of response sets, time required to complete the questionnaire and success of data collection techniques . The language tool used to validate the questionnaire was English and not translated into local language since Philippines used English as their secondary language.[34]

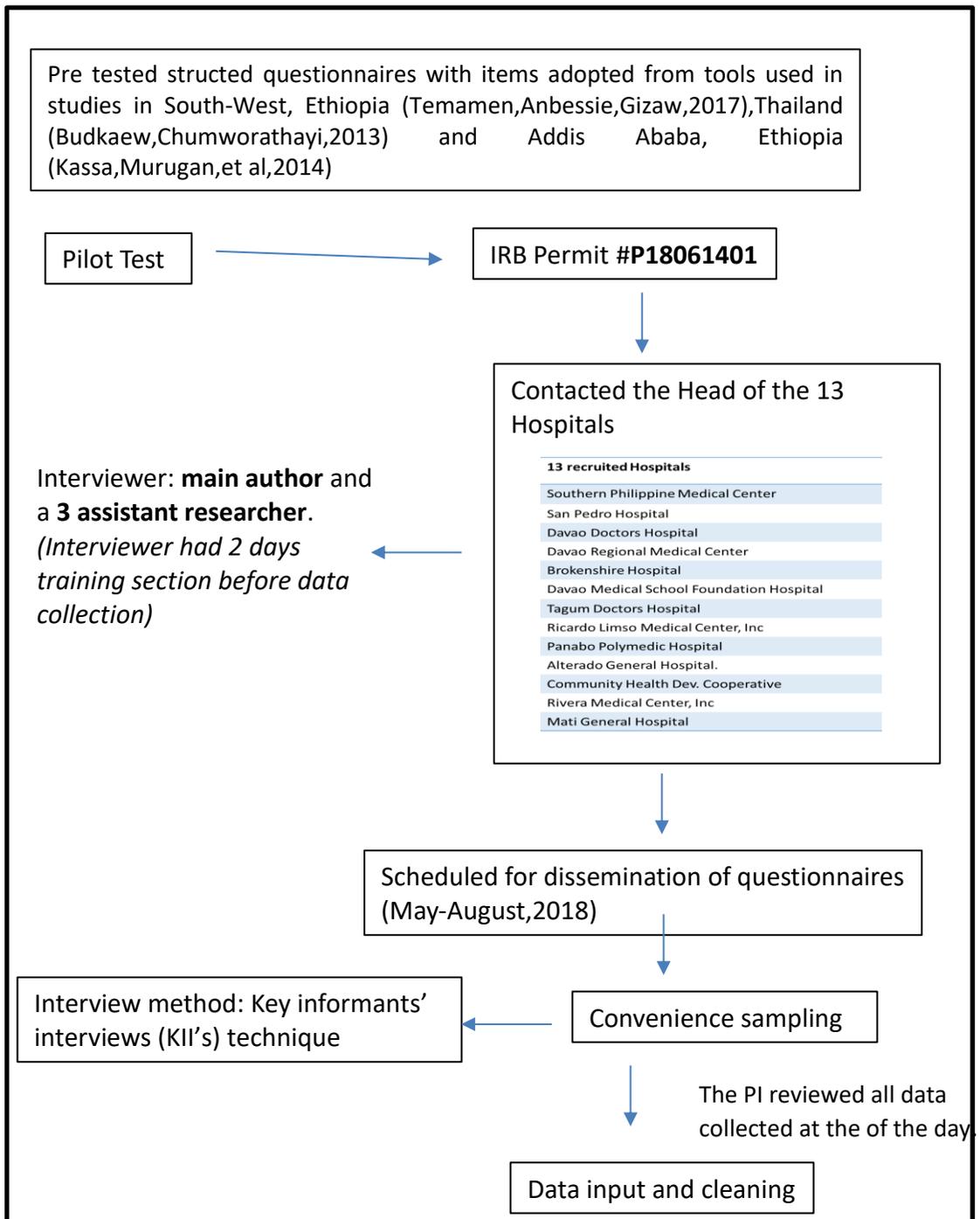
## 2.6 Operational Definition

Variable	Questions	Points	Method		Source
<b>Socio-demographic</b>	4	n/a	Frequency, percentage	Age, Gender, Education, Occupation	n/a
<b>Knowledge</b>	8	8	Scalar-scoring method.	Good Knowledge = $\geq 75\%$ of total score of the Palliative Care knowledge test [PCKT] scale Poor Knowledge = $< 75\%$ of total score of the Palliative Care knowledge test [PCKT] scale	Nakazawa et al. (2009)
<b>Attitude</b>	5	30	6-item Likert scale (ranging from strongly agree to strongly disagree)	Favorable Attitude = $\geq 50\%$ of total score of the Frommelt Attitude Toward Care of the Dying [FATCOD] scale Unfavorable Attitude = $\leq 50\%$ of total score of the Frommelt Attitude Toward Care of the Dying [FATCOD] scale	Frommelt, 1991; Frommelt, 2003
<b>Practice</b>	5	20	Likert Scale	Good Practice = $\geq 75\%$ responses of nurses from a total practice KAP scale Poor Practice = $\leq 75\%$ responses of nurses from a total practice KAP scale	Nakazawa et al. (2009)
<b>Barriers</b>	21	21	Frequency, percentage	Geographical location. Health services, health workers, patients	Budkaew, J. and B. Chumworathay, 2013

## **2.7 Data Collection and Quality Control**

For simplicity and to account for non-response rates, all pediatric oncology health care providers in the selected hospitals were considered in the study. A total of 515 questionnaires were sent to the contact persons in each hospital (Figure 7). The questionnaires were sent to the contact persons with a cover letter written by the primary investigator describing the objectives of the study, name of contact person, and the time frame of two weeks for completing and returning the questionnaires. A reminder was sent after two weeks, but due to the low rate, deadline was extended to one month.

Data collectors received a two day training on issues concerning the questionnaire (on the objective of the study, the how of approaching the participants, how to administer and collect the questionnaire timely was done) . To successfully accomplish this research, the preparation of appropriate instruments as well as human resources, like assistants, were undeniably vital. Confidentiality of the study participants were kept during distribution and data collection periods. Above all, ethics, coding, and entry were maintained throughout the process.



**Figure.7 Data collection and Quality control flow**

## 2.8 Tool of the study

For data collection a self-administrative questionnaire was developed by researchers and used to assess:

- a. Pediatric palliative health care providers' socio-demographic characteristics as regards to their age, gender, education, occupation
- b. Participants knowledge was assessed as follows: each question had a group of answer points; one point was awarded for each correct answer; incorrect answers took zero. Correct responses were summed up to get a total knowledge scores for each participant. Total score for all questions reached 8 grades. The knowledge scores were classified according to Palliative Care knowledge test [PCKT] scale into Sufficient knowledge ( $\leq 75\%$ ) and , ( $\geq 75\%$ ) is considered Insufficient knowledge .
- c. Attitude was assessed using 5-item Likert scale (ranging from strongly agree 5 to strongly disagree ,1) . It had 5 item rating scale with the highest score of 5 for each option and total possible score was 60. The attitude score were categorized based on the Frommelt Attitude Toward Care of the Dying [FATCOD] scale into favorable attitude ( $\geq 50\%$  ) and

unfavorable Attitude ( $=\leq 50\%$  )

d. Practice was assessed using scalar scoring scale each questions had a group of answer points, one point was awarded for each checked answer; blank answers took zero .Checked items were summed up to get the most common barriers for health care provider.

## **2.9 Administration of Questionnaires**

The participating pediatric oncology health care provider were directly approached by visit and appointment. A written informed consent was taken from them. Six sections of questionnaires including demographic information, Knowledge, Attitude, Practices, Barriers and Hinders was administered.

## **2.10 Statistical Analysis**

We divided the respondents only based on their working designation in four categories, communities, provincial/general hospital and tertiary hospital/excellence center and others. Data were entered to Excel spreadsheet. SPSS version 19 was used to perform data analysis. Study variables were described and expressed as frequencies, percentages and further associated in Spearman rank correlation test, analysis was carried at the 0.05 significant levels.

## **2.11 Ethical Consideration**

This study was approved by the Philippine-International Review Board / Cluster Ethics Review committees (The CERCs) with a research CERC permit number no. **P18061401**. This emphasized with a permission for the investigator to utilize the targeted hospitals. Approval from pediatric oncology health care provider were obtained. First, written informed consent was obtained prior to the administration of the questionnaire. The pediatric oncology health care providers were informed of the purpose of the study, and that they had the right to refuse to participate. Also, the voluntary nature of participation was stressed as well as confidentiality. Anonymity of the respondents was maintained at all times.

### **3 RESULTS**

#### **3.1 Socio-demographic characteristics of respondents**

A total of 515 randomly selected pediatric health care providers were recruited with a response rate of 100%. However, fifteen were excluded due to the incomplete survey information of some respondents, leaving a total of 500 respondents that were finally considered for further analysis. The study population were composed of 250 (48%) oncology nurses, 100 (20%) oncology physician, 150 (30%) of Allied Health Workers (AHW) which were composed of 53 (10.6%) psychologists, 39 (7.8%) social health workers, 38 (7.6%) physical therapists, and 20 (4%) midwives .More than half 317 (63.4%) of respondents were females and 181 (36%) were between the age group of 41-50. The qualification of the respondents showed that 210 (42%) had master's degree ,190 (38%) had bachelor's degree and 100 (20%) had medical degree level, (Table 1).

**Table 1: General demographic characteristic of pediatric oncology health care provider at southern Philippines.**

<b>Characteristics</b>	<b>Frequency (n=500)</b>	<b>Percentage (%)</b>
<b>Gender</b>		
Male	183	37
Female	317	63
<b>Age</b>		
20-30	65	13
31-40	147	29
41-50	181	36
>50	107	22
<b>Education</b>		
Bachelor's degree level	190	38
Master's degree level	210	42
Residence Medical level	12	2
Medical specialization	72	15
Consultant medical level	16	3
<b>Occupation</b>		
Medical Doctor	100	20
Nurse	250	50
<i>Allied Health Workers</i>		
Physical Therapist	38	8
Psychologist	53	11
Social Health Workers	39	8
Midwives	20	4

### **3.2 Knowledge of pediatric oncology health care provider towards palliative care**

In general, three hundred sixty-five (73%) of pediatric oncology health care provider had sufficient knowledge about the philosophy of palliative. And more than two third (69%) of pediatric oncology health care provider believed that adjuvant therapies are important in managing pain and 355 (71%) acknowledged that morphine is the standard used to compare the analgesic effect of other opioids. Majority 460 (92%) of the pediatric oncology health care providers thought that manifestation of chronic pain is different from those of acute pain and three hundred seven (61.4%) considered that pain threshold is lowered by fatigue or anxiety.

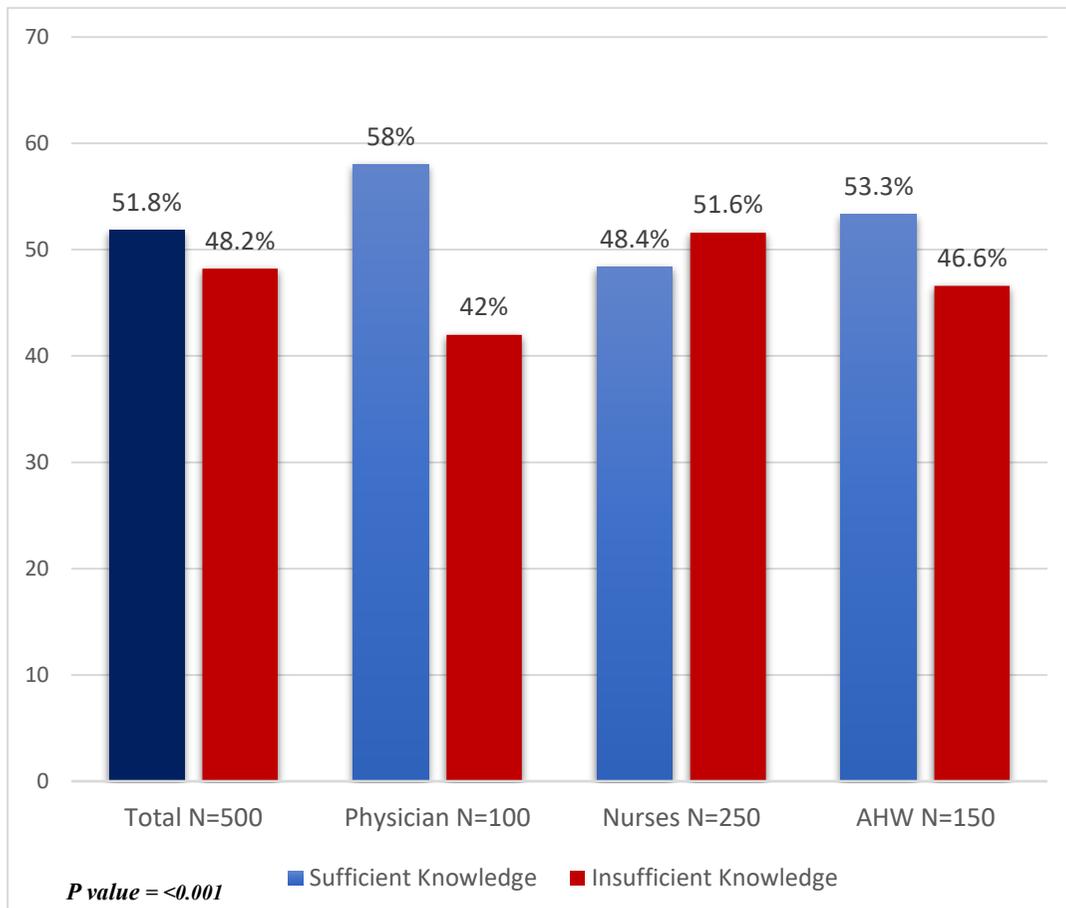
**Table 2: Knowledge among pediatric oncology health care provider about palliative care**

Knowledge statement		Correct answer		P value
		n/total	%	
<b>The philosophy of palliative care is compatible with that of aggressive treatment</b>	Physician	81/100	81	<b>&lt;0.001</b>
	Nurses	162/250	65	
	AHW	122/150	81	
	<b>Total</b>	<b>365/500</b>	<b>73</b>	
<b>Adjuvant therapies are important in managing pain</b>	Physician	86/100	86	<b>&lt;0.001</b>
	Nurses	164/250	66	
	AHW	95/150	63	
	<b>Total</b>	<b>345/500</b>	<b>69</b>	
<b>Pain threshold is lowered by fatigue or anxiety</b>	Physician	67/100	67	<b>0.001</b>
	Nurses	126/250	50	
	AHW	114/150	76	
	<b>Total</b>	<b>307/500</b>	<b>61</b>	
<b>The provision of palliative care requires emotional detachment</b>	Physician	91/100	91	<b>&lt;0.001</b>
	Nurses	238/250	95	
	AHW	122/150	95	
	<b>Total</b>	<b>451/500</b>	<b>90</b>	

Knowledge statement		Correct answer		P value
		n/total	%	
<b>Morphine is the standard used to compare the analgesic effect of other opioids</b>	Physician	92/100	92	<b>&lt;0.001</b>
	Nurses	168/250	67	
	AHW	95/150	63	
	<b>Total</b>	<b>355/500</b>	<b>71</b>	
<b>Suffering and physical pain are synonymous</b>	Physician	86/100	86	<b>0.001</b>
	Nurses	178/250	50	
	AHW	112/150	49	
	<b>Total</b>	<b>376/500</b>	<b>75</b>	
<b>The extent of the disease determines the method of pain treatment</b>	Physician	96/100	96	<b>&lt;0.001</b>
	Nurses	172/250	69	
	AHW	110/150	67	
	<b>Total</b>	<b>378/500</b>	<b>76</b>	
<b>Manifestations of chronic pain are different from those of acute pain</b>	Physician	97/100	97	<b>&lt;0.001</b>
	Nurses	235/250	94	
	AHW	128/150	85	
	<b>Total</b>	<b>460/500</b>	<b>92</b>	

### **3.2.1 Pediatric oncology health care providers' level of knowledge towards palliative care**

Figure 8 indicates the levels of knowledge on palliative care among Pediatric oncology health care providers. In total, more than half of the pediatric oncology health care providers had sufficient knowledge 259 (51.8%) towards palliative care. Among the respondents, the oncology physician had the greatest percentage of sufficient knowledge with fifty-eight (58%), followed by allied health worker with eighty (53.3%) towards palliative care to the pediatric oncology patients. In contrast, more than half of the oncology nurses had insufficient knowledge 129 (51.6%) on delivering palliative care to the pediatric oncology patients. The maximum score was 7 in 8 and mean score was 5.13 with a p value <0.001.



*Sufficient Knowledge =  $\geq 75\%$  of total score of the Palliative Care knowledge test [PCKT] scale*  
*Insufficient Knowledge =  $\leq 75\%$  of total score of the Palliative Care knowledge test [PCKT] scale*  
 Source: Nakazawa et al. (2009)

**Figure 8. The level of knowledge among pediatric oncology health care providers towards palliative care**

### **3.3 Attitude of pediatric oncology health care provider towards palliative care**

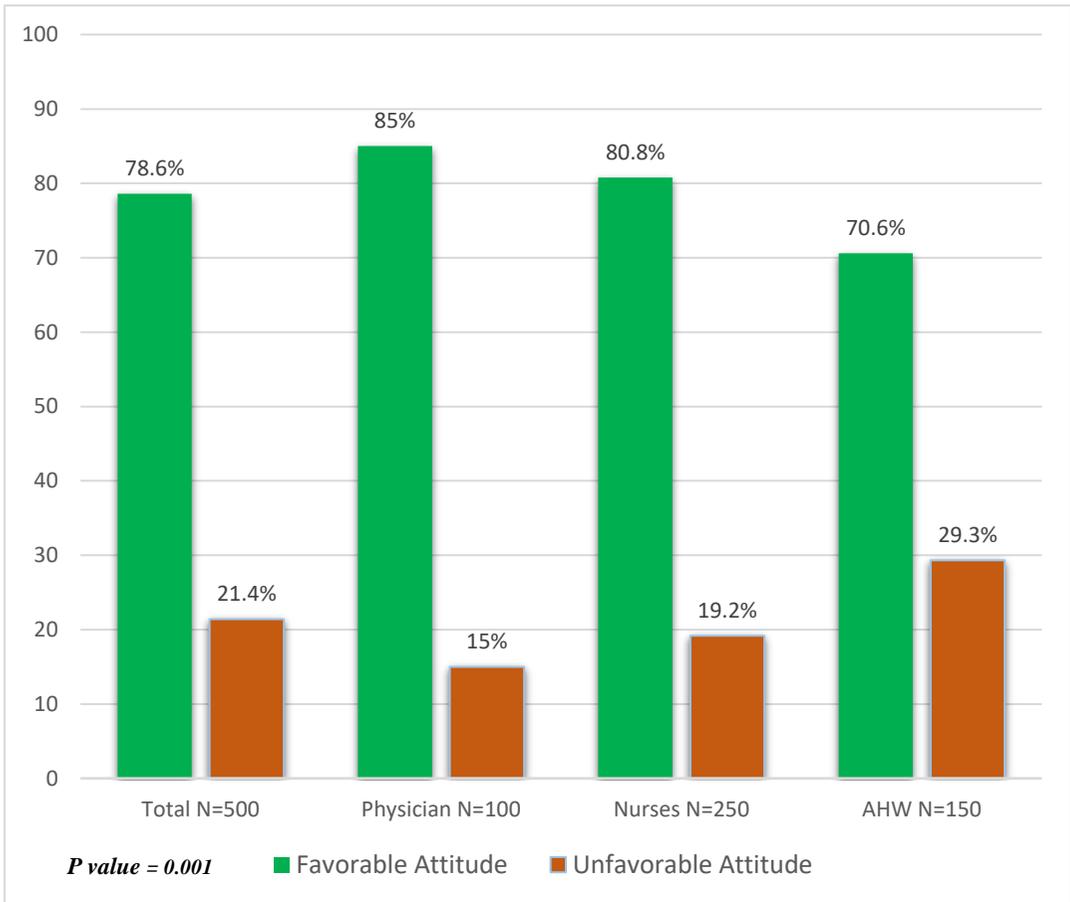
From the study participants 167 (37.4%) were strongly agreed that pediatric oncology health care provider should coordinate to the care of cancer patients at all stages of disease, including the end of life care. One hundred eighty-two (36.4%) agreed that the medical oncologist is the best person to coordinate on the palliative care of patients with advanced cancer. About 199 (39.8%) of pediatric oncology health care provider disagreed that they should give dying patients an honest answer about their condition. On the other hand, 187 (37.4%) agreed that the pediatric oncology health care provider felt emotionally burned out when dealing too many deaths.

**Table 3. Attitude among pediatric oncology health care provider about palliative care**

		<b>Strongly Agree (%)</b>	<b>Slightly Agree (%)</b>	<b>Agree (%)</b>	<b>Disagree (%)</b>	<b>Slightly Disagree (%)</b>	<b>Strongly Disagree (%)</b>
<b>Medical oncologists should coordinate the care of cancer patients at all stages of disease, including end of life care</b>	Physician	47	23	47	0	6	0
	Nurses	27	25	42	0	6	.4
	AHW	26	33	35	0	6	0
<b>Do you agree that the medical oncologist is the best person to coordinate on the palliative care of patients with advanced cancer?</b>	Physician	41	14	44	0	1	0
	Nurses	30	25	41	.4	4	0
	AHW	26	39	25	0	11	0
<b>Do you agree that Pediatric Oncology Health Care provider should give dying patients honest answers about their condition?</b>	Physician	0	9	2	35	16	38
	Nurses	.8	6	0	42	26	24
	AHW	.6	10	1	42	23	23
<b>Do agree that you feel emotionally burned out by having to deal with too many deaths?</b>	Physician	9	22	38	13	18	0
	Nurses	13	34	35	7	13	.4
	AHW	13	30	40	3	15	0

### **3.3.1 Pediatric oncology health care providers' level of attitude towards palliative care**

More than three fourth (78.6%) of the study participants had favorable attitude towards palliative care (Figure 6). Eighty-five (85%) of the Oncology physician had the most favorable attitude towards palliative care among all the pediatric oncology health care provider. Moreover, two hundred two (80.8%) oncology nurses had favorable attitude and forty eighth (19.2%) had unfavorable attitude towards palliative care. In Allied Health Worker level of attitude towards palliative care, one hundred six (70.6%) had favorable attitude while forty-four (29.3%) had unfavorable attitude towards palliative care.



*Favorable Attitude =  $\geq 50\%$  of total score of the Frommelt Attitude Toward Care of the Dying [FATCOD] scale*  
*Unfavorable Attitude =  $\leq 50\%$  of total score of the Frommelt Attitude Toward Care of the Dying [FATCOD] scale*  
 Source: Frommelt, 1991; Frommelt, 2003

**Figure 9. The level of attitude among pediatric oncology health care providers towards palliative care**

### **3.4 Practices of pediatric oncology health care provider towards palliative care**

More than three fourth (76.8%) of the study participants had inappropriate practice towards palliative care (figure 3). About one hundred and fifty (30%) of the pediatric oncology health care provider had five to ten years of palliative care experience which were common among oncology medical physician (52%). Conversely, even though they had served on palliative care for long period of years majority of the pediatric oncology health care provider don't have proper palliative care training. Regarding the practice of caring the terminally ill pediatric patients ,146 ( 29.2%) of them encountered once per month during their period of service in palliative care and majority of the pediatric oncology health care provider who encountered the terminally patients were allied health professional (39.3%). On the other hand, the most common pediatric oncology health care providers who always present when a patient died were Oncology nurses (28%).

**Table 4. Practice among pediatric oncology health care provider about palliative care**

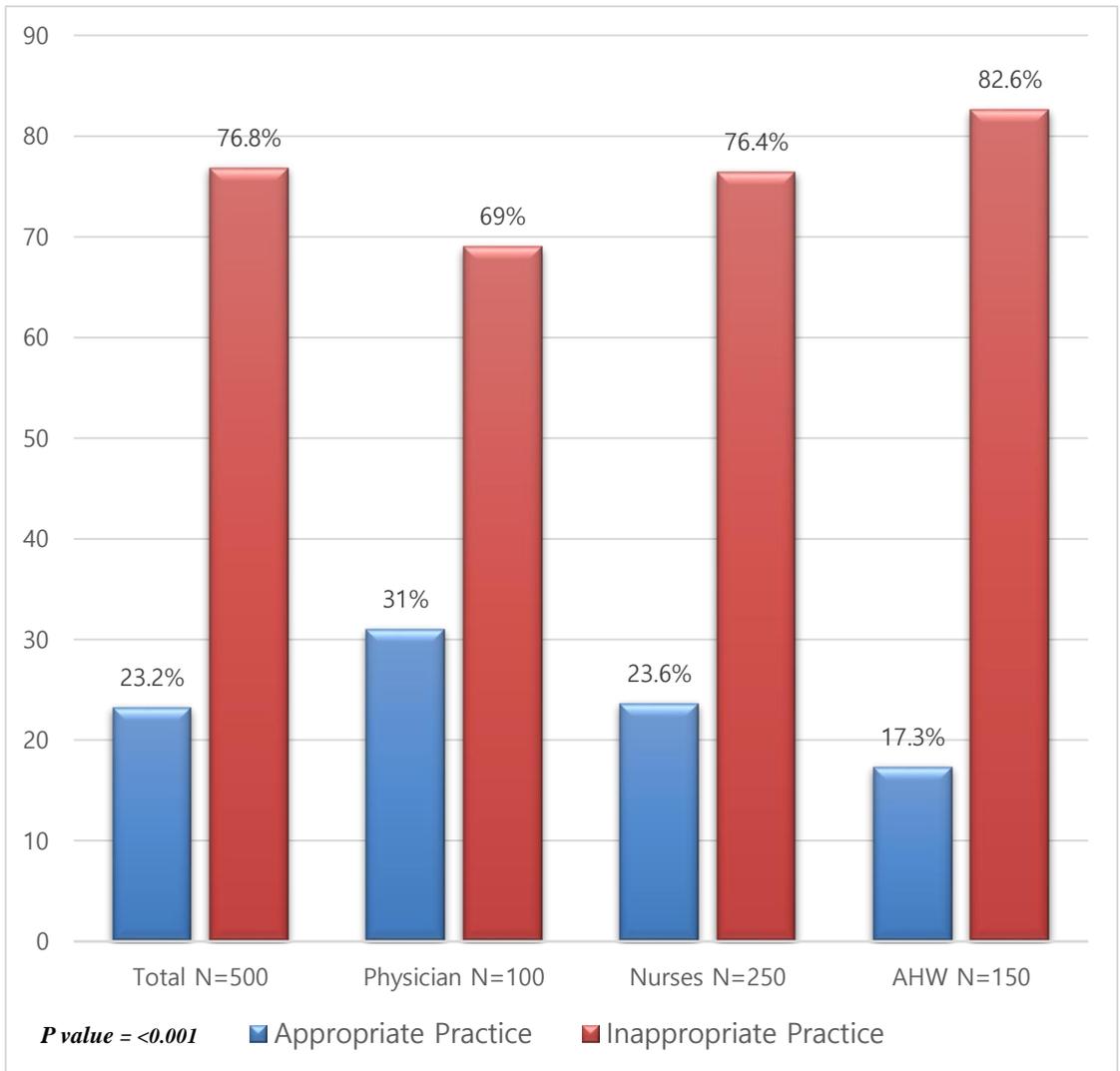
<b>Characteristics</b>	<b>Multiple response</b>	<b>Physician</b>	<b>Nurses</b>	<b>AHW</b>
		<b>n (%)</b>	<b>n (%)</b>	<b>n (%)</b>
<b>Number of years palliative care experience</b>	1-5	28 (28)	29 (12)	41 (27)
	5-10	52(52)	45 (18)	53(35)
	10-15	18(52)	77 (31)	34 (23)
	15-20	2 (2)	72 (29)	14 (9)
	>20	0	27 (11)	8 (5)
<b>Experience in caring terminally ill pediatric cancer patient</b>	Daily	0	79 (32)	1(.7)
	Once per month	14 (14)	73 (29)	59 (39)
	Never	16 (16)	0	22(15)
	Once per week	0	70 (28)	32 (21)
	Few times/year	70 (70)	28 (11)	36 (24)
<b>Experience Palliative Care Training</b>	Yes	17 (17)	61 (24)	23 (15)
	No	83 (83)	189 (76)	127 (85)
<b>Present as a health practitioner when a patient has died</b>	Never	1 (1)	0	17 (11)
	1-5 times	26(26)	0	64 (43)
	5-10 times	31(31)	15 (6)	39 (26)
	10-15 times	23 (23)	70 (28)	21 (14)
	15-20 times	10 (10)	80 (32)	9 (6)

<b>Characteristics</b>	<b>Multiple response</b>	<b>Physician n (%)</b>	<b>Nurses n (%)</b>	<b>AHW n (%)</b>
<b>Used an integrated care pathway for end-of-life care</b>	Never	0	0	0
	1-5 times	37(37)	3(1)	42(28)
	5-10 times	36(36)	57 (23)	82 (55)
	10-15 times	20(20)	102(41)	26 (17)
	15-20 times	5(5)	88 (35)	0
	>20 times	2(2)	0	0
<b>Part of an interdisciplinary team that identified a patient as dying</b>	Never	0	0	0
	1-5 times	22(22)	0	28(19)
	5-10 times	28(28)	35(14)	74(49)
	10-15 times	30(30)	97 (39)	36(24)
	15-20 times	10(10)	76 (30)	10(7)
	>20 times	10(10)	42(17)	2(1)
<b>Administered prescribed opiate drugs to a pediatric cancer patient to control pain</b>	Never	0	0	81(54)
	1-5 times	18(18)	0	54(36)
	5-10 times	30(30)	50(20)	15(10)
	10-15 times	26(26)	111(44)	0
	15-20 times	15(15)	71(28)	0
	>20 times	11(11)	18(7)	0

<b>Managed physical</b>	Never	19(19)	19(8)	113(75)
<b>comfort measures for a</b>	1-5 times	46(46)	69(28)	31(21)
<b>pediatric cancer patient</b>	5-10 times	32(32)	126(50)	6(4)
<b>with the provision of an</b>	10-15 times	3(3)	35(14)	0
<b>air mattress</b>	15-20 times	0	1(.4)	0
	>20 times	0	0	0

### **3.4.1 Pediatric oncology health care providers' level of practice towards palliative care**

Figure 9 showed that more than three fourth of the pediatric oncology health care providers (76.8%) had inappropriate practice level of palliative care towards pediatric oncology patients. Majority in the pediatric oncology health care provider who had inappropriate practice was allied health worker with one hundred twenty-four (82.6%) respondents. Whereas, more two third of the oncology physician had inappropriate practice (69%) while oncology nurses had fifty-nine (23.6%) appropriate practice and one hundred ninety-nine (76.4%) had inappropriate practice towards palliative care.



*Appropriate Practice =  $\geq 75\%$  responses of nurses from a total practice  
 Inappropriate Practice =  $\leq 75\%$  responses of nurses from a total practice  
 Source: Frommelt, 1991; Frommelt, 2003*

**Figure 10. The level of practice among pediatric oncology health care providers towards palliative care**

### 3.5 Correlation between Knowledge, Attitude, and Practices in total respondents.

A spearman rank correlation was used to evaluate the possible association between Knowledge-attitude(K-A), Knowledge-practices (K-P) and A-P scores in the total group. There were low positive correlations between K-A, K-P and A-P (Spearman rank correlation coefficients were 0.40,0.37 and 0.31 respectively,  $p < 0.01$ ), The spearman rank correlations of the two groups were closed to the total results, which were shown in the table 5.

**Table 5. Correlation between Knowledge, Attitude, and Practices in total respondents**

Variable(s)	Knowledge	Attitude	Practices
<b>Knowledge</b>	<b>1</b>	---	---
<b>Attitudes</b>	<b>0.40**</b>	<b>1</b>	---
<b>Practices</b>	<b>0.37**</b>	<b>0.31**</b>	<b>1</b>

### **3.6 Percieved barriers of pediatric oncology health care provider towards palliative care**

On the last section of the questionnaires, the study intends to assess the other factors that includes the barriers of pediatric oncology health care provider to deliver palliative care and the hinder of pediatric oncology patients to receive palliative care. Among the five hundred respondents, ninety nine percent (495) believed that the major barriers of pediatric oncology health care provider were the inadequate research evidence base to guide and measure the quality of care .Almost all 489 (97%) of the respondents affirmed that lack of training staff of palliative care is one of the factor that limits the pediatric oncology health care providers to deliver best quality of life care.

**Table 6. Perceived barriers by pediatric oncology health care provider**

	<b>Physician</b>	<b>Nurses</b>	<b>AHW</b>	<b>Total Average Percentage N=500 (%)</b>	<b>p-value</b>
	<b>N= 100 (%)</b>	<b>N =250 (%)</b>	<b>N=150 (%)</b>		
<b>Inadequate research evidence base to guide and measure the quality of care;</b>	100(100)	244 (97.6)	148(98.6)	<b>495 (99)</b>	<b>0.001</b>
<b>Lack of staff training in pediatric palliative care</b>	99 (99)	243(97)	144 (96)	<b>485 (97)</b>	<b>&lt;0.001</b>
<b>Lack of Research on Palliative Care and Hospice</b>	94 (94)	231 (92.2)	146 (95)	<b>470 (94)</b>	<b>&lt;0.001</b>
<b>Lack of community awareness to palliative care of the hospitals</b>	97 (97)	233 (93.2)	139(92.6)	<b>472 (94.3)</b>	<b>&lt;0.001</b>
<b>Lack of knowledge about pediatric palliative care by health care professionals</b>	100(100)	231 (92.4)	135 (90)	<b>470 (94)</b>	<b>0.001</b>
<b>Improper communication among interdisciplinary team</b>	100(100)	233 (93.2)	131(87.3)	<b>470 (94)</b>	<b>0.029</b>
<b>Difference in opinion among health care professionals about pediatric palliative care</b>	100(100)	220 (88)	137(91.3)	<b>465 (93)</b>	<b>0.001</b>
<b>Lack of access to hospice services</b>	77 (77)	172 (68.8)	109(72.6)	<b>365 (73)</b>	<b>&lt;0.001</b>
<b>Patients /families' avoidance of issues around dying</b>	64 (64)	170 (68)	107(71.3)	<b>340 (68)</b>	<b>0.023</b>
<b>Lack of home care availability to the</b>	66 (66)	154 (61.6)	102 (68)	<b>325 (65)</b>	<b>0.001</b>

<b>pediatric cancer patient</b>					
<b>Lack availability of medications</b>	49 (49)	195 (78)	99 (66)	<b>320 (64)</b>	<b>&lt;0.001</b>
<b>Lack of designated pediatric palliative care beds</b>	62 (62)	145 (58)	99 (66)	<b>310 (62)</b>	<b>&lt;0.001</b>
<b>Patients'/families' fear of addiction to pain medications</b>	42 (42)	173 (69.20)	105 (70)	<b>300 (60)</b>	<b>0.001</b>
<b>Communication difficulties among health care professionals, patients, and/or families</b>	55 (55)	127 (50.8)	101(67.3)	<b>290 (58)</b>	<b>&lt;0.001</b>
<b>Cultural, religious, and/or spiritual beliefs influencing end-of-life care</b>	37 (37)	161(64.4)	106(70.6)	<b>285(57)</b>	<b>&lt;0.001</b>

### **3.7 Percieved barriers of pediatric oncology patients to receive palliative care**

About five hundred (100%) pediatric oncology health care providers perceived that the major hinders why pediatric oncology patients limits to received palliative care was the ignorance and lack of awareness about the existing program and resources of palliative care. Thus, they also perceived (85-95%) that restrictive specialist palliative care service program eligibility criteria and geographical locations of pediatric oncology patients had contributed to the limit themselves to enroll in palliative care. Overall, Ignorance and lack of awareness, restrictive specialist palliative care, geographical locations, lack of health insurance and patients and family reluctance were strongly statistically significant factors towards the KAP scale.

**Table 7. Perceived barriers by pediatric oncology health care provider**

	<b>Physician</b>	<b>Nurses</b>	<b>AHW</b>	<b>TOTAL AVERAGE</b>
	<b>n (%)</b>	<b>n (%)</b>	<b>n(%)</b>	<b>( %)</b>
<b>Ignorance and Lack of awareness about the existing program and resources of Palliative car</b>	100 (100)	250 (100)	150 (100)	100
<b>Lack of knowledge regarding Palliative care</b>	95 (95)	235 (94)	145 (96.6)	95
<b>Restrictive specialist palliative care service program eligibility criteria</b>	100(100)	244(97.6)	128 (85.3)	94
<b>Geographical locations of Pediatric oncology patients</b>	66 (66)	227(90.8)	129 (86)	81
<b>Lack of health Insurance coverage for Pediatric oncology patient</b>	71 (71)	221 (88.4)	126 (84)	81
<b>Patients and Family reluctance to accept a referral to a specialist palliative care</b>	39 (39)	238 (95.2)	102 (68)	67

#### **4. DISSCUSION**

Using the hospital based cross-sectional approach, we conducted this study to investigate the knowledge, attitude and practice of the pediatric oncology health care providers and other factors such as barriers and hinders of pediatric oncology to receive palliative care. This is the first survey of its kind conducted in Philippines. Literature review does not indicate any comprehensive study for palliative care knowledge targeting pediatric oncology health care providers in practices anywhere in the entire region. Pediatric oncology health care providers are professionals focusing on a specialist in a pediatric patients [35]. They also are the most important first or second contacts of patients.

The results indicated that majority of the pediatric oncology health care providers' level of practices were inappropriate towards palliative care. Among the pediatric oncology patients, allied health worker had the greatest percentage of inappropriate practice (82.6%) particularly administering prescribed opiate drugs to a pediatric cancer patient to control pain. It could be related to low awareness, health care management systems and little integration of palliative care services with regular health care services in the Philippines [12]. This finding is higher than study conducted in Egypt [36] and Addis Ababa [32] which is 72.6% and 71.2% respectively. The difference might be due to sample size, study period, health care policy and

awareness level. Pediatric oncology health care provider who were participated on this study had better knowledge about palliative care services as compared to health care provider in Egypt and Addis Ababa [32, 36]. The findings of this study showed that half of respondents initiating palliative care discussion during diagnosis of patients. It is almost consistence with study done in Addis Ababa [32]. More than two-third of study participants addressed the diagnosis issue of patients by hiding the truth. This finding is higher than study conducted in Addis Ababa, but lower than study done in Norway [37], where the pediatric oncology health care provider believed that lying about patients' diagnosis and treatment is way to reduce the psychological issues of the patients.

In overall, 57.4% of pediatric oncology health care provider had insufficient knowledge towards palliative care services. This indicates almost half of the pediatric oncology health care provider are not equipped with adequate knowledge and information about palliative care service which will contribute to inappropriate practice, assessment and under-addressing of palliative care needs, increased health care cost and end of life suffering. This finding is higher than the findings of studies conducted in Egypt [36] and Addis Ababa [32]. Time difference among studies might be contributed for this result. However, it is lower than the finding of study in Greek [38] where pediatric oncology health care provider had better

knowledge about palliative care. This might be due to socio-economic status and organizational policies and access of training on the palliative.

The current study revealed that 58.1% % of pediatric oncology health care provider had favorable attitudes towards palliative care services. This finding is consistent with studies done in Iran [39]and India [40].

Conversely, this finding is lower than study conducted in Addis Ababa [2] which revealed that 76% of respondents had favorable attitude towards palliative care services. This difference might be due to better awareness about palliative care and end of life care.

Inadequate research evidence base to guide and measure the quality of life and lack of staff training in palliative care (97%-99%) were topped listed as the major barriers in providing palliative care by the cancer centers to the pediatric oncology patients Whereas, 100% of pediatric oncology health care provider affirmed that the ignorance and lack of awareness about the existing program and resources of palliative care were the major factors that limits the pediatric oncology patients to receive palliative care in Southern Philippines.

## **Strength**

First and foremost, based on our literature, this study is the first study focused on pediatric oncology health care providers' knowledge, attitude and practice regarding palliative care. Currently, when this study was conducted, there has been no definite list of barriers of the pediatric oncology health care providers officially released from the Department of Health and most importantly, there has been no standardize palliative care program in the Philippines, including caring for cancer patients. Therefore, we believe that results from this study are informative and meaningful for health policy makers and it could be considered when developing and implementing plan for standardize palliative care program, in the near future.

Additional strength of this study are the hospitals from the participated respondents, with the perceived barriers from the pediatric oncology health care provider the hospitals could start for the improvement of knowledge, attitude and practices of their institution for the advancement of their palliative care to the pediatric cancer patients.

And lastly, we believe that the results of this study could be use by the the Philippines Department of Health (DOH), particularly the regional branch of it in Southern, Philippines because it will give a comprehensive information and understanding to the knowledge, attitude, practice and

other associated factors of palliative care to the pediatric oncology patients in the Philippines that may use for crafting of policies and projects for the development of a more significant palliative care for pediatric cancer patients.

### **Limitations**

- (1) The study was carried out in one region of Philippines and does not reflect necessarily reflect general population.
- (2) Study design (cross sectional) has limited internal validity and its sensitive to a variety of bias
- (3) Data collection tool was self-administered and lack of observation carriers a risk of recalling bias or contamination by the participants.

## **5. Conclusion**

In conclusion, the pediatric oncology health care providers had inappropriate practice towards palliative care, but their knowledge was high and attitude towards palliative care was favorable, the results of this study emphasize the need for developing pediatric palliative care services in the Philippine. Limitations in pediatric oncology health care providers' aspect of practice relating to administering prescribed opiate drugs to a pediatric cancer patient to control pain may be contributing to a substantial unmet need in children with cancer. The provision of quality palliative care services requires however the education and training of health professionals in this field. Palliative care needs to become an integral part of all medical school curricula as well as continuing medical education program offerings. Major barriers to deliver palliative care to pediatric cancer patients are facing this field include inadequate research evidence base to guide , lack of staff training in pediatric palliative care , restrictive specialist palliative care service program and measure the quality of care and lack of awareness about the existing programs and resources however recommended to develop national pediatric oncology palliative care program such as an online learning management systems which house online training courses on pediatric palliative care for health professionals and information resources for primary caregivers and

family of the patients who want to learn more about caring for pediatric patients with cancer and pediatric cancer program. Prospective researches are needed in this area to explore how pediatric oncology health care providers 'practice in their health care setting and to guide the adoption of a palliative care delivery model that is culturally sensitive and meets the needs of the Filipino population.

# **APPENDIX**

## **I. Questionnaires**

- **Inform consent to participate in research**
- **Certificate of consent**
- **Research questionnaires (English)**
- **International Review Board Permit**

## **II. Documentations**

- **Photos**

## INFORM CONSENT TO PARTICIPATE IN RESEARCH

### ***Title:* ASSESSMENT OF KNOWLEDGE, ATTITUDE, PRACTICES AND OTHER ASSOCIATED FACTORS OF PALLIATIVE CARE TO THE PEDIATRIC ONCOLOGY PATIENTS IN THE SOUTHERN PHILIPPINES**

**Dear Pediatric Palliative care providers,**

Greetings!

I am *Jayson Cagadas Pasaol a Master of Cancer Control and Population Health student of National Cancer Center-Graduate School of Cancer Science and Policy*. Attached is a survey questionnaire designed to assess the level of knowledge, attitude and practice of pediatric oncology providers towards pediatric palliative care and to discover other associated factors that limits the pediatric oncology patients to receive pediatric palliative care and lastly to identify the barriers in providing pediatric palliative care by the cancer centers to the pediatric oncology patients. I am inviting you to participate in this survey.

#### **Ethics review**

The DOH XI Cluster Ethics Review Committee of Southern Philippines Medical Center has reviewed and approved the protocol for this research.

#### **Informed consent**

*Form:* We need your written and duly signed informed consent in order for you to participate in this study.

*Signatory:* Only you can be allowed to sign the consent in order to signify your participation.

*Witness/proxy consent:* No witness will be required in order for the consent to be binding. No proxy consent will be allowed.

*Process, questions and concerns:* You will be requested to read this informed consent. If you have any questions and concerns, please feel free to ask me. My contact details are written below.

*Timing and Venue:* You may read and sign this consent in the room designated for this procedure after your office or duty hours.

#### **Risks, benefits, remuneration and reimbursements**

There are no known risks in participating in this study. There are no direct benefits, either, other than your contribution to knowledge about our hospital's human resources and operations. I will not be giving you any remuneration or reimbursement for your participation in this study.

### **Voluntariness and alternative options**

Your participation in this study will be entirely voluntary. When you have decided to participate but later wish to withdraw participation, you are also free to do so. You do not have to participate in this study. If you decide not to participate or to withdraw from the research, I will respect your decision. Your decision not to participate or to withdraw participation will not affect your employment or your regular evaluation.

### **Privacy**

There may be some items in this questionnaire that you may find sensitive, and you may feel uncomfortable answering. You do not have to share any information you do not want to. You will not be contacted by the researcher by any means any time after you have accomplished the questionnaire.

### **Confidentiality**

Only the researcher will have access to the accomplished questionnaires. Your identifiable information will not be shared with anyone outside the research study, unless you give your permission to share it. The collected data may be anonymized using a standard process that prevents the resulting data to be linked back to the identity of the person contributing the data. The anonymized data may be subsequently stored in public repositories, to which other researchers or parties interested with the data may have access. Other researchers or interested parties will be allowed to see only the anonymized data and may use the same for various purposes. The entire process of anonymizing data and subsequently sharing it will be good for science and can potentially contribute to the understanding of conditions related to the anonymized data.

If you wish to withdraw your data from the research, you will be free to do so without having to provide any explanation. Simply contact the researcher, and all of your data will be removed from the database. However, data that has been anonymized can no longer be withdrawn from databases or public repositories because they cannot be linked back to the identity of the data contributor. Anonymized data used by specific studies prior to your request for removal cannot be retrieved from other researchers or interested parties that have already accessed it.

### **Information of study results**

You may have access to your own data. After the analysis of all the data for this research, I will also make the results available to you.

### **Extent of use of data**

Please be assured that the data gathered will only be used to answer the objectives of the study.

**Authorship**

I am the only author for this study.

**Conflict of interest**

I declare no conflict of interest.

**Publication**

Results of the study may be submitted for publication. The study may be presented in a scientific forum or published in a journal, but in a manner whereby your personal identity will not be revealed.

**Funding**

I am personally funding this study.

**Duplicate informed consent form**

I will give you a copy of the signed informed consent form.

**Contact details**

If you have any concerns or questions, please feel free to contact me at this number **09287366517** and email **1704101@ncc.re.kr**.

Thank you very much for being a part of this endeavor. You may also get in touch with **Dr Alvin Concha, DOH XI CERC Chair at 227-2731 local 4615** for any of your concerns.

**CERTIFICATE OF CONSENT**

*I have read the foregoing information, or have been read to me. I have had the opportunity to ask questions that I have asked have been answered to my satisfaction. I consent voluntarily to participate as a participant in this study and understand that I have the right to withdraw from the study anytime without in any way affecting my medical care.*

*I am aware that the researcher will be free of any legal liabilities if anything happens with regards to the study.*

Print \_\_\_\_\_ Name \_\_\_\_\_ of \_\_\_\_\_

Participant/Hospital: \_\_\_\_\_

Signature of Participant: \_\_\_\_\_

Date (month/day/year): \_\_\_\_\_

*Direction: Answer the following questions. Answers will be treated in full confidentiality. Data gathered will be used for research purposes only.*

**Pediatric oncology providers Knowledge regarding Palliative Care**

**Please indicate your answer to the question by checking the box which corresponds to your Knowledge about Palliative Care**

	<b>True</b>	<b>False</b>
The philosophy of palliative care is compatible with that of aggressive treatment		
Adjuvant therapies are important in managing pain		
Pain threshold is lowered by fatigue or anxiety		
The provision of palliative care requires emotional detachment		
Morphine is the standard used to compare the analgesic effect of other opioids		
Suffering and physical pain are synonymous		
The extent of the disease determines the method of pain treatment		
Manifestations of chronic pain are different from those of acute pain		

**Pediatric oncology providers Attitude regarding Palliative Care**

	<b>Strongly Agree</b>	<b>Disagree</b>	<b>Slightly Disagree</b>	<b>Slightly Agree</b>	<b>Agree</b>	<b>Strongly Agree</b>
Pediatric oncology providers should coordinate the care of cancer patients at all stages of disease, including end of life care						
The medical oncologist is the best person to coordinate the palliative care of patients with advanced cancer						
Pediatric oncology providers should not give dying patients honest answers about their condition.						

I feel emotionally burned out by having to deal with too many deaths.						
Most pediatric oncology providers I know are expert in the management of the physical and psychological symptoms of advanced cancer.						

**Please indicate your answer to the question by checking the box which corresponds to your Attitude about Palliative Care**

**Cancer centers and hospital Barriers in delivering Palliative Care**

**The following section concerns your experience and opinions of the barriers towards delivering Palliative care to Pediatric oncology patients. Please indicate your answer to the question by checking the box as many as you can which corresponds to your experience and opinions (see answer guide)**

<b>Barriers</b>	<b>Answer</b>
1.Lack of community awareness to palliative care of the hospitals	
2.Lack of designated pediatric palliative care beds	
3.Lack of staff training in pediatric palliative care	
4.Lack of access to hospice services	
5.Lack of home care availability to the pediatric oncology patient	
6.Patients /families’ avoidance of issues around dying	
7.Lack of knowledge about pediatric palliative care by health care professionals	
8.Communication difficulties among health care professionals, patients, and/or families	
9.Difference in opinion among health care professionals about pediatric palliative care	
10.Cultural, religious, and/or spiritual beliefs influencing end-of-life care	
11.Patients’/families’ fear of addiction to pain medications	
12.Improper communication among interdisciplinary team	
13.Lack availability of medications	
14.Inadequate research evidence base to guide and measure the quality of care;	
15. Lack of Research on Palliative Care and Hospice	

1. Aside from the barriers listed, have you had experience difficulties on giving palliative care to the pediatric oncology patients?

- 
- No

Yes

(If Yes) what are those barriers you personally encountered.

---

2. Among all of these barriers, what do you think is the biggest barriers of the cancer center encountered on obtaining palliative care?

---

## Factors hinder the Pediatric oncology patients to receive Palliative Care

The following section concerns your experience and opinions to the factors hinder the Pediatric oncology patients to receive Palliative Care. Please indicate your answer to the question by checking the box as many as you can which corresponds to your experience and opinions (see answer guide)

1. What are the factors hinder the Pediatric oncology to receive the Palliative Care?

<b>Factors</b>	<b>Answer</b>
Geographical locations of Pediatric oncology patients	
Lack of health Insurance coverage for Pediatric oncology patients	
Ignorance and Lack of awareness about the existing program and resources of Palliative care	
Lack of knowledge regarding Palliative care	
Restrictive specialist palliative care service program eligibility criteria	
Patients and Family reluctance to accept a referral to a specialist palliative care.	

2. Among all of these factors, what do you think is the biggest obstacles of the Pediatric oncology patients encountered not to receive palliative care?

\_\_\_\_\_.

3. Aside from the factors listed, what are the factors that hinder the pediatric Oncology patients to receive palliative care?

\_\_\_\_\_.

## Pediatric oncology providers Socio-demographic Information

Please answer each question by ticking the appropriate box.

1. Gender

Male

Female

2. What is your Age range?

20-30 years

40-50 years

31-40 years

>50 years

3. What is your education level?

Bachelor Degree

Level

Residence Medical Level

Master Degree Level

Medical Degree Level

Consultant Medical Level

Medical Degree Specialization Level

4. What is your occupation/career?

Medical

Doctor

Other: \_\_\_\_\_

Nurse

Physical Therapist

Psychologist



9. Do you use the standardized Palliative Care such as National Quality Forum (NQF) and the National Consensus Project for Quality Palliative Care?

- Yes
  No  
 I don't know

**Section 2**

The following section concerns your experience in delivering palliative care to pediatric oncology patients. Please indicate your answer to the question by placing a number in the line which corresponds to your experience (see answer guide).

Answer guide:

- 0            Never
- 1            1- 5 times
- 2            5-10 times
- 3            10-15 times
- 4            15-20 times
- 5            >20 times

<b>Experience</b>	<b>Answer</b>
I have been present as a health practitioners when a patient has died	
I have used an integrated care pathway for end-of-life care	
I have been part of an interdisciplinary team that identified a patient as dying.	
I have administered prescribed opiate drugs to a pediatric oncology patient to control pain	
I have managed physical comfort measures for a pediatric oncology patient with the provision of an air mattress.	

Thank you for taking the time to complete this questionnaire. I sincerely value the important contribution that you have made to knowledge development in this area.

## International Review Board Permit



### DEPARTMENT OF HEALTH XI CLUSTER ETHICS REVIEW COMMITTEE

HOSPITAL RESEARCH OFFICE, JICA Building, Southern Philippines  
Medical Center, Bajada Davao City 8000 The Philippines  
rxiiirb@gmail.com +63822272731 local 4615

28 JULY 2018

**JAYSON PASAOL CAGADAS**

Principal Investigator

National Cancer Center- Graduate School of Cancer Science and Policy

**RE: Application for CERC Approval of the following proposed research protocol:**

**Full Title:** ASSESSMENT OF KNOWLEDGE, ATTITUDE, PRACTICES AND OTHER FACTORS TOWARD  
PALLIATIVE CARE AMONG PEDIATRIC ONCOLOGY HEALTH CARE PROVIDERS IN SOUTHERN  
PHILIPPINES

**CERC Protocol Number:** P18061401

**Sponsor Protocol Number:** N/A

**Principal Investigator:** Mr. Jayson Cagadas Pasaol

**Co-investigator:** N/A

**Type of Review:** Expedited

**Date of Review:** 27 June 2018

**Oversight Reviewer:** Dr. Dahlia Arancel

**Primary Reviewers:** Dr. Rojim Sorrosa, Ms. Charity Mata

**General Reviewer:** N/A

**Independent Consultant:** Dr. Cheryl Lyn Diez

**Dear Mr. Pasaol,**

The Department of Health XI Cluster Ethics Review Committee (DOH XI CERC) hereby grants you approval of the following research documents:

Document	Version	Date
1. Study Protocol	1	27 June 2018
2. Informed Consent Form (English)	1	27 June 2018
3. Data Collection Form	1	27 June 2018
4. Study budget and Time Table	1	27 June 2018
5. Curriculum vitae of investigator	-	26 April 2018

**Date of Approval:** 15 August 2018

**Approval effective until:** 14 August 2019

**Approved Sample Size:** 500

Please employ all measures in order to adhere to the methods described in the approved protocol. You are required to inform the DOH XI CERC in writing during the following occasions:

1. Any protocol changes (for DOH XI CERC repeat review and approval).

2. Any protocol deviations.
3. Any protocol violations.
4. Any suspected adverse events among research participants.
5. Any relevant information that may affect the safety or privacy of the research participants.
6. Termination of the research, data gathering and/or recruitment in SPMC.
7. Progress report (6 months after approval date for 1-year research, annual for multi-year research).

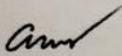
You are required to submit a duly accomplished Study Closure Form once your research is completed or ends for any reason. When the full research report becomes available, please submit a softcopy of the report to DOH XI CERC.

Please be reminded, as well, that the DOH XI CERC may conduct site visit in order to monitor the study's compliance with ethics requirements.

If you have any concerns, please email us at [rxiiirb.cerc@gmail.com](mailto:rxiiirb.cerc@gmail.com) or contact Mr. Jaryll Ampog at 09472890704.

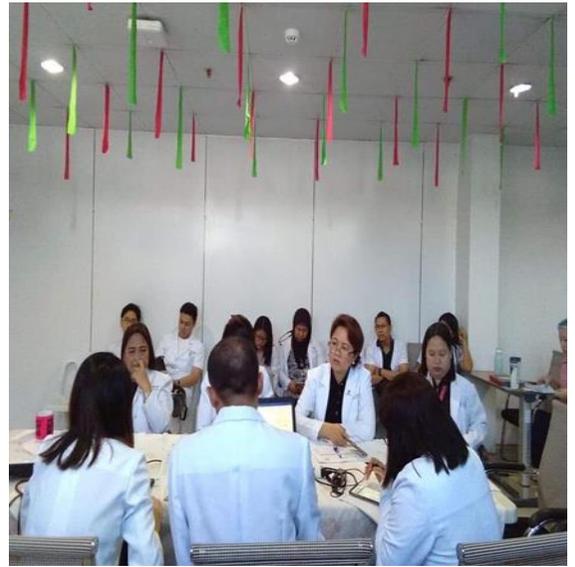
We wish you a successful and worthwhile research experience in SPMC!

Sincerely yours,



**ALVIN S. CONCHA, MD**  
Chair, DOH XI CERC

## Appendix 4. PHOTO IN DATA COLLECTION



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**TO GOD BE ALL THE GLORY**