

# Pediatrics Palliative Care and Ethical Consideration From Nursing and PharmD Perspectives: A Study in Jordan

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## Research article

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# Abstract

**Aim:** This research aimed to survey a sample of nursing students and PharmD students in Jordan about their knowledge of pediatric palliative care (PPC) in the context of treating terminally ill children.

**Method:** A descriptive, cross-sectional, correlational design was used to fulfill the goal of this research. A convenience sample of nursing and PharmD students currently studying in Jordan University of Science and Technology in Jordan was recruited to complete a survey that contained 20 statements about issues on and around the subject of PPC

**Results:** The results showed that there a significant difference in PPC between nurses and PharmD students. Mother's education ( $t= 2.158, p= .032$ ) and being a nursing or PharmD student ( $t=1.969, p=.050$ ) were associated with knowledge toward PPC. Other listed factors such as gender, working ward, and age were not associated with knowledge toward PPC.

**Conclusion:** this was the first study in Jordan to survey a sample of nursing students and PharmD students in Jordan about their knowledge of PPC. The current study found that knowledge of nursing and PharmD students regarding PPC was satisfactory according to the scale used.

## Introduction

Pediatric palliative care (PPC) is defined as "a special, closely related field to adult palliative care". The PPC aims to decrease the suffering of pediatric patients who face chronic illness and life-threatening illness and their families. It involves physical, psychosocial and spiritual fields (1). The PPC requires a broad multidisciplinary approach and may include nurses, doctors, social workers, chaplains, and other therapists (2–8).

The PPC is expanding the focus of care to include not just dying patients, but also patients diagnosed with a life-limiting illnesses (9–14). The congenital anomalies, injuries, and non-communicable diseases are the emerging priorities in the global child health agenda (1). Life threatening diseases, neonatal disorders, congenital defects, and chronic kidney disease are the major causes of child deaths in the Jordan population (6). According to the national life threatening diseases register report 2011, life threatening diseases is the second cause of death after heart disease, with more than 41 million pediatric deaths each year which equals 71% of global deaths as a result of chronic and life-threatening diseases (1).

The number of children affected by life threatening diseases is in increasing. In 2017, the children under the age of 15 diagnosed with life threatening diseases was 10,270 (7). These chronic diseases are causing suffering for the affected children and their families where PPC services become much needed (15–18). In Florida, Knapp et al (19) conducted a study involving 279 pediatric nurses who worked in hospital and community settings to describe the knowledge of state-employed nurses using two PPC quizzes: knowledge about hospice quiz (KHQ), and PPC quiz for nursing (PCQN). The results revealed

that pediatric nurses in Florida had limited baseline knowledge of PPC. Another study in the U.S. evaluated the PPC knowledge of pediatric nurses (19). The study used both the PPC quiz for nursing (PCQN) and the knowledge of hospice questions (KHQ). Nurses gave correct responses to at least half of the KHQ questions. Regarding PCQN, at least half of the nurses responded correctly to 12 of the 20 items. Similarly, both Chen et al (21) and Verri and colleagues (20) examined nursing professional staff's knowledge about PPC. Chen et al (21) explored the neonatal nurse's beliefs and attitudes towards caring for dying neonates in Taiwan. The findings were that this service is not offered to dying neonates, and highlighted eight barriers to provide PPC such as communication deficit related to the lack of an in-service educational program, insufficient staffing, lack of policies, the lack of available counseling, personal beliefs about death, and barriers related to the understanding of the philosophy and objectives of PPC and difficulties in working with those pediatrics. (12). Future nurses and PharmD participation in PPC decision process were recognized as keys to attain optimal decision (13). As suggested by Veri et al (14) more research studies are required to understand barriers behind poor involvement of future nurses and PharmDs in PPC.

To the best of the author's knowledge, there are no previous studies on future nurses and PharmDs, knowledge of PPC in Jordan. Nursing and PharmD's students as new field to work on at the end of the introduction with few studies and the need for more studies, where our study comes to fill in the gap among few other studies that are out there Hence, this study makes an important contribution to this area of research by highlighting the concerns that these future nurses and PharmD have about the use of PPC. This study aimed at 1) examining the knowledge of nursing and PharmD students towards PPC and 2) determining the predictors of knowledge toward PPC.

## Method

Eligible respondents were recruited into the study using a cross-sectional survey. A campaign approach coupled with social media and web-based application was executed from 1<sup>st</sup> April to 1<sup>st</sup> June 2020 to advertise, select, survey respondents, and gather the survey study data. The researchers employed four approaches to pick respondents on paid Facebook advertisements, individual messages, and postings on forums focusing on nursing and PharmD students.

A research assistant provided the survey documents online. The participants were required to voluntarily sign an attached online agreement form and the survey questionnaire before finishing the survey. Students who accepted signing an informed agreement were allowed to complete an online survey questionnaire. The respondent needed roughly 8 minutes to complete the survey. The research assistant used an excel format to collect online reviews and kept them in a safely guarded computer. Students who participated were informed that their responses might contribute to boosting the understanding of the utilization of online learning methods. Respondents were assured of the protection of their identifiable health data as a result of stringent procedures of privacy and confidentiality of this study.

## Instruments

This instrument was used to assess the nurse's knowledge about PPC using the palliative care nursing questionnaire (PCQN) tool which was developed by Margret et al (15). This instrument contained 20 items with answer choices of "true", "false", and "I don't know". The items of this questionnaire asked about philosophy and principle of palliative care, management of pain and other symptoms, and psychosocial aspects of care. Each correct answer was awarded 1 point, whereas each incorrect or "I don't know" answer was awarded zero points. The knowledge scores were classified into poor knowledge  $\leq 50\%$ , fair knowledge (65-50%), and ( $\geq 65\%$ ) satisfactory knowledge. The internal consistency of the 20 item quiz was 0.78 indicating high internal consistency (15). Nevertheless, there are three sub-scales in PCQN: (a) philosophy and PPC principles (elements 1, 9,12,17); (b) pain and management of symptoms (elements 2-4, 6-8, 10, 13-16, 18,20); and (c) psychosocial and spiritual attention (elements 5,11,19).

## **Data Analysis**

All data collected from the participants in the questionnaire were entered to the SPSS database after coding it. The data entered were checked for accuracy, then, statistical analysis was done. The means and standard deviations were used to describe the continuous measured variables and the frequencies and percentages were used to describe the categorical factors. The Cronbach's alpha test of reliability was used to assess the internal consistency of the nurses measured attitude indicators toward the palliative care and the Kuder-Richardson's test (KR-20) was used to assess the reliability of the dichotomized future nurse's knowledge of PPC indicators (PCQN) questionnaire. Multivariate linear regression analysis was used as a secondary analysis to assess the significant predictors for the future nurses' and PharmD knowledge of palliative care at baseline.

## **Ethical Consideration**

Ethical approval was obtained from the Institutional Review Board (IRB, Reference# 2020145) at Jordan University of Science and Technology. Potential research participants were informed about the anonymous and voluntary nature of the study, confidentiality of information obtained in this study, as well as risks and benefits associated with consenting to participate. As informed consent was embedded in the online survey, questions would not be viewed by potential participants unless they clicked the "I agree" button, which indicating their voluntary participation.

# **Results**

## **Demographic Characteristics**

Total of 402 nursing and PharmD students participated in the study include 242 nurses and 160 PharmDs students. Students from both gender participated in this study male 90 (22.4%) and female 312 ( 77.6% ). For more information about students demographic characteristics, see Table 1.

## **Knowledge of PPC**

Knowledge among nursing and doctor of nursing students was good (M= 69.9, SD=10.3). Many students responded to the following question correctly "Palliative and end of life services should provide only pain and comfort measures ( N='340, 85% ) and if a dying child on a morphine drip experiences hallucinations and irritability, the best management would be to change to another drug (N=335, 83%). Many students answered the following questions wrongly "Taking a photograph of a child after death is an acceptable practice despite the culture or religious background (N= 337, 84%) and PPC order is required for children admitted to hospice programs (N= 222, 55%). Table 2 shows the responses to knowledge regarding PPC.

### **Differences between Nursing and PharmD Students**

T-test was used to compare knowledge toward PPC between nursing and PharmD students. For nurses PPC score (M= 68.6116, SD=10.71887) and for PharmD PPC score (M=71.1375, SD= 9.21544). The results showed that there was a significant difference in palliative between nurses and PharmD students ( t=1.969, p=.050).

### **Multiple regression analysis**

Multiple regressions test was used to predict knowledge about PPC among nursing and PharmD students according to their demographic variables (age, gender, education level, work experience, and job role). Table 3 summarizes the outcomes of the multiple regression tests. All of the listed factors are not associated with knowledge toward PPC (p value > 0.05) except mother's education (t= 2.158, p= .032) and being a nursing or PharmD student ( t=1.969, p=.050).

## **Discussion**

The nursing and PharmD are the main professions in PPC team members as well they play a vital role in practice and improving the PPC (16). Future nurses and PharmDs can play a major role to facilitate decision taken by terminally ill child and families through communicating, educating, advocating, and collaborating with terminally ill children, families, and other health care providers (12). Thus, studies were focused on assessing nursing and other health professions knowledge in a different situation and contexts like nursing students which are considered the future health professionals, (17–21). Yet, few studies evaluated the ratings of end-of-life knowledge/ beliefs, understanding/ experience, expertise, and the appropriateness of the workplace settings concerning established and progressive learning of PPC among future nurses and PharmD (17, 18). The authors in this study created a descriptive cross-sectional survey that was issued to 402 nursing and PharmD students.

The current study found that knowledge of nursing and PharmD students regarding PPC was satisfactory according to the scale used. According to Karkada et al and Yousef et al (8,9), it was revealed that nursing students have insufficient knowledge in PPC. The knowledge of future health providers such as nursing students in developing countries toward PPC has been explored in a few studies and no study explored PharmD knowledge regarding PPC. For instance, the conduct of nursing students of Muslim and other faiths in relation to PPC has been investigated in Turkey (10) and in Saudi Arabia (11). The multivariate

assessment revealed that receiving formal PPC education and having working experience in a hospice had a relationship with greater understanding (19). Conner et al during his study in PPC areas found that students have poor knowledge about PPC concepts, death meaning and dying care and this required an urgent education to improve their knowledge and impact their attitude. A literature review conducted by Gillan who found insufficient end-of-life content in nursing books and deficient palliative care content in undergraduate nursing curricula. Furthermore, there are poor knowledge among nursing students regarding palliative principles and philosophy. Basic concept that defining the concept and objective, essence of palliative care, and the philosophical underpinnings of palliative are not covered within the curriculum. Notably, the study also revealed poor knowledge in the psychosocial and spiritual care dimension of palliative care (14). Studies have reported that insufficient information of nursing students in spirituality in relation to health and spiritual nursing care in PPC (24, 25)

Current results showed that there a significant difference in palliative between nursing and PharmD students ( $t=1.969$ ,  $p=.050$ ). The PharmD students had higher knowledge score toward PPC. This difference may relate to more exposure of PharmD students to end of life patients or having more training during their program. There are no previous studies that compared knowledge toward PPC between nursing and PharmD students. However, there are many studies compared knowledge between nurses and physicians.

The current study found that all demographic factors are not associated of knowledge toward PPC ( $p$  value  $> 0.05$ ) except mother education ( $t= 2.158$ ,  $p= .032$ ) and being a nursing or PharmD student ( $t=1.969$ ,  $p=.050$ ).Based on multi-linear regression of Cui et al (24), three issues may have affected the needs of nurses in death education: past education ( $t = 2.32$ ,  $p = .021$ ), past training regarding death education ( $t = 4.02$ ,  $p < .001$ ), and the size of the hospital ( $t = -5.49$ ,  $p < .001$ ). Many studies found that many nurses regardless of faith, held several misconceptions about PPC. Moreover, a previous study showed that while there are many variations in knowledge between religions, there are also several similarities in regards to how future nurses and deal with death and the treatment of dying terminally ill children (9, 10).

According to a previous study, most of the nursing students were in the 21-year age group (51%), of which 92% were females. Only 43.3% of the respondents knew the meaning of palliative care; they remembered it from their clinical education (8). The results showed that 79.5% of the students had poor palliative care knowledge, while the attitudes of 92.8% of the students favored palliative care. Chi-square results indicated a significant relationship between the knowledge and age of the student of nursing ( $\chi^2 = 18.52$ ,  $p < .01$ ) (8). Other investigators have found that senior nursing students had significantly higher scores compared to those of sophomore students, indicating that nursing education and experience contribute to greater generalist knowledge about palliative care (24). This is not consistent with the levels of knowledge of the participants who were in their second year were higher than those of the participants in their fourth year (16, 28). This difference may be attributed to the integration of palliative care concepts into the course on Fundamentals of Nursing that taught for sophomore students during the first years. The information regarding this concept, as partially discussed in the Fundamentals of Nursing. These

findings suggest that nurse educators may integrate content on palliative and end-of-life care into standard nursing curricula using PPC core course and have positive learning outcomes even if there is some overlap in the content.

According to Karkada et al., (8) and Wesisman (25) , there was a negative association between the scores of knowledge and attitudes of nursing students towards palliative care. Moreover, there was a significant relationship between the nursing students' age and their palliative care knowledge (8). Likewise, Weissman (25) explored the knowledge and attitude of nursing students receiving communication module regarding end-of-life and students without communication. The study had seventeen nursing student respondents (intervention group: n = 9; control group: n = 8).

### **Implication for practice**

Insights and different thinking ways were generated using critical reflection. Department developed belief and caring conditions for instructing on the content of end-of-life. Environments like these assisted students in sharing their thoughts since they created new ideas and understanding regarding issues that had no previous examination. Nursing and pharmacy programs that teaches PPC can promote transformative education by integrating the content of end-of-life training and the nursing curriculum teaching approaches to guide the teaching of care interventions that could reduce students' discomfort when dealing with mentally ill individuals. Furthermore, end-of-life education was considered beneficial to learning, but not enough since graduates were still novices in the nursing role and sought experience. Besides, future nurses and PharmD encountered challenges in compassion balancing and meeting the responsibilities of a nurse. Researchers recommend that these results provide beneficial explanations of the challenges of executing PPC in clinical activities while helping the ill and their relatives through death.

### **Ethics in Palliative Care**

Caring for patients with serious and complex illnesses that can compromise their quality of life (QoL) poses many ethical challenges. Healthcare providers strive to make decisions and offer guidance with difficult and complex treatment choices and improve the QoL of patients and their caregivers. Facing advanced and terminal illnesses could be very stressful and may result in patients having complex medical needs. Thus, palliative care aims at optimizing QoL and alleviating distress through managing symptoms and complex needs (26–28). Although palliative care decisions are geared towards controlling the patient's symptoms in difficult medical situations and putting QoL at the center of patient care, several medical decisions need to be morally justified to maintain patient's dignity and confidence as well as avoid conflicts in values between physicians and patient or patients' families (28,29). According to the ethical principles of autonomy, justice, and dignity, the patient's desires should be respected (30) . These ethical principles become evident when patients receive treatment with care and compassion like anyone in a similar medical situation (30). Therapeutic options need to be tailored based on different patients' factors, physicians' discretions and ethical obligations can become more challenging when offering palliative care services (29). If patients were self-discouraged or unable to be involved in making medical decisions, physicians must make decisions in their best interest unless the patient expressed his wishes

earlier (29,30). Further, many patients receiving palliative care prefer not to perceive the uncertainty of physical decline or death, allowing healthcare providers choose the ultimate course of action that should be aligned with patients' desired outcomes after clarifying possible health consequences and the possibility to achieve safe and effective transitions of care (30). Nevertheless, physicians are not obligated to offer medical interventions that have physiologically ineffective outcomes or when concerns about types and levels of care that should be delivered for patients experiencing intolerable pain or with a limited life expectancy arise. Thus, patients might prefer not to receive a treatment or have some proxy decision-makers involved in their healthcare decisions (30).

Since Cardiopulmonary resuscitation (CPR) would be physiologically useful for some patients, it might not be the case for other patients due to the severity of their illness, the number of morbidities, and multiple CPRs received, who might, therefore, carry an increased psychological burden (31). Barriers to physicians' referrals for palliative care include fears that palliative care will deprive patients from receiving life-prolonging therapy and limit access to expensive treatments such as chemotherapy and transfusions (31). However, previous studies revealed that the early introduction of palliative care for patients with terminal illness could improve patients' QoL and potentially reduce the need for intensive intervention while being relatively cost-saving, suggesting that adequate access to palliative measures along with other indispensable therapies could be a good practice guide to not only balance patients' uncertainties in palliative care but also to keep physicians from diverting patients away from receiving palliative therapy and possibly delaying their care (26–28). Moreover, difficult decisions regarding withdrawing treatment could be made by physicians once these palliative measures are no longer of benefit in terms of disease recovery, comfort, or improving QoL. As patients' health needs are always at the forefront of care, it is significant to explain to patients and patients' families the extent to which palliative care can be effectively provided to relieve symptoms rather than irrelevantly delaying or hasten the death of patients (30). The need for palliative care should be discussed openly with the patient before it is undertaken, which helps avoid the ethical dilemmas that may arise when patients believe that they were not being appropriately treated. Lack of clear guidelines and boundaries on the levels of palliative care that have been delivered is another challenging difficulty that needs to be controlled to better ensure delivery of care and enhance patients' dignity.

## Conclusion

In summary, this was the first study in Jordan to survey a sample of nursing students and PharmD students in Jordan about their knowledge of PPC. The current study found that knowledge of nursing and PharmD students regarding PPC was satisfactory according to the scale used. The results showed that there a significant difference in PPC between nurses and PharmD students. Mother's education and being a nursing or PharmD student were associated with knowledge toward PPC. The results of this study provide beneficial explanations of the challenges of executing PPC in clinical activities while helping the ill and their relatives through death.

# Abbreviations

PPC= Pediatric Palliative Care

PCQN= Palliative Care Nursing Questionnaire

CPR= Cardio-pulmonary Resuscitation

KHQ= Knowledge Of Hospice Questions

QoL = Quality of life

PharmD= Doctor of Pharmacy

# Declarations

**Ethics approval and consent to participate:** This research got an Approval from Jordan University of Science and Technology IRB(#20202343). Consent form was signed from all the participants.

**Consent to publish:** We gave the right to BMC Palliative Care to publish

**Availability of data and materials:** data will be sent upon request

**Competing interests:** no conflict of interest for any author in this paper

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All authors have read and approved the manuscript”, and ensure that this is the case.

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## Authors' Contributions

**SA and SM:** Conceptualization; Data curation; Formal analysis; Funding acquisition; Investigation; Methodology; Project administration; Resources; Software; Supervision; Validation; Visualization; Roles/Writing - original draft; Writing - review & editing.

**KA, OK and RN:** Data curation; Formal analysis; Funding acquisition; Investigation; Methodology; Project administration; Resources; Supervision; Validation; Visualization; Roles/Writing - original draft; Writing - review & editing

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## Tables

Table 1  
Frequency Distribution of Socio-demographic  
Characteristics of Participants (n = 402)

| <b>Variable</b>         | <b>Frequency (%)</b> |
|-------------------------|----------------------|
| <b>Gender</b>           |                      |
| Male                    | 90( 22.4)            |
| Female                  | 312( 77.6)           |
| <b>Nationality</b>      |                      |
| Jordanian               | 325 ( 80.8)          |
| other                   | 77(19.2)             |
| <b>Age</b>              | 20.3 (SD = 2.3)      |
| <b>Mother education</b> |                      |
| Primary or secondary    | 125 ( 31.1)          |
| Diploma                 | 55 (13.7)            |
| Bachelor                | 143 (35.6)           |
| Graduate                | 79 (19.7)            |
| <b>Father education</b> |                      |
| Primary or secondary    | 118 ( 29.4)          |
| Diploma                 | 101 (25.1)           |
| Bachelor                | 134 ( 33.3)          |
| Graduate                | 49 (12.2)            |
| <b>College level</b>    |                      |
| Freshmen (first year)   | 23 (5.7)             |
| Sophomore (second year) | 30 (7.5)             |
| Junior (third year)     | 78 (19.4)            |
| Senior (fourth year)    | 130 (32.3)           |
| Senior (fifth year)     | 105 (26.1)           |
| Senior (sixth year)     | 36 (9.0)             |
| <b>Income</b>           |                      |
| Less than 400           | 47(11.7)             |

| <b>Variable</b>                   | <b>Frequency (%)</b> |
|-----------------------------------|----------------------|
| 400 to 600                        | 86 (21.4)            |
| 600 to 800                        | 61 (15.2)            |
| 800 to 1000                       | 85 (21.1)            |
| More than 1000                    | 123 (30.6)           |
| <b>Speciality area</b>            |                      |
| Nursing                           | 242 (16.4)           |
| Pharm-D                           | 160 (42.9)           |
| <b>Area of living</b>             |                      |
| City                              | 261 ( 64.9)          |
| Village                           | 141 (35.1)           |
| <b>Prior Experience with PPC</b>  |                      |
| No                                | 150 ( 37.3)          |
| Yes                               | 252 (62.7)           |
| <b>PPC</b>                        |                      |
| No                                | 350(87.1)            |
| Yes                               | 52 (12.9)            |
| <b>Reasons for Preventing PPC</b> |                      |
| Religious reasons                 | 78 (19.4)            |
| Social reasons                    | 78 (19.4)            |
| Scientific                        | 50 (12.4)            |
| Others                            | 196 (48.8)           |

Table 2  
Response toward PPC (N = 402)

| Items  | False | %   | I do not Know | %     | True | %   |
|--|-------|-----|---------------|-------|------|-----|
| PPC requires that a patient is actively dying  | 26    | 6%  | 60            | 14.9% | 316  | 79% |
| A patient who has a PPC order should be excluded from receiving acute treatment in the form of vasopressors or mechanical ventilation          | 103   | 26% | 68            | 16.9% | 231  | 57% |
| Even if a child is actively dying, hope should never be discarded  | 53    | 13% | 92            | 22.9% | 257  | 64% |
| Parents or guardians should have a voice in determining the PPC options for their child  | 34    | 8%  | 95            | 23.6% | 273  | 68% |
| A hospital-wide PPC team would be acceptable to me in providing family and staff support services in pediatric unit or the PICU.               | 202   | 50% | 113           | 28.1% | 87   | 22% |
| An ethical dilemma that arises with acute therapeutic care is whether to treat a secondary problem such as an infection when death is imminent | 139   | 35% | 106           | 26.4% | 157  | 39% |
| Withholding feedings is ethically acceptable for a dying child, even if the child does not have a PPC order                                    | 167   | 42% | 112           | 27.9% | 123  | 31% |
| Withdrawing support is considered the same as withholding support for a dying child.   | 71    | 18% | 69            | 17.2% | 262  | 65% |
| It is easier to care for a dying child when parents and family are not present at the bedside.   | 201   | 50% | 90            | 22.4% | 111  | 28% |
| A most important nursing function for the dying child is to be "present" for the family.   | 41    | 10% | 90            | 22.4% | 271  | 67% |
| Blood product transfusions are acceptable PPC options  | 51    | 13% | 117           | 29.1% | 234  | 58% |
| Palliative and end of life services should provide only pain and comfort measures  | 29    | 7%  | 33            | 8.2%  | 340  | 85% |
| Children who are actively dying should not be readmitted to the hospital for respiratory or nutritional support                                | 104   | 26% | 102           | 25.4% | 196  | 49% |
| A PPC order is required for children admitted to hospice programs  | 112   | 28% | 68            | 16.9% | 222  | 55% |
| If inadequate pain control is determined in a dying child and there are no signs of toxicity, the dose of narcotic should be increased by 50%  | 109   | 27% | 89            | 22.1% | 204  | 51% |

| Items  | False | %   | I do not Know | %     | True | %   |
|--|-------|-----|---------------|-------|------|-----|
| Taking a photograph of a child after death is an acceptable practice despite the culture or religious background   | 17    | 4%  | 48            | 11.9% | 337  | 84% |
| Inadequate pain control hastens death in multiple ways, including increasing physiological stress, decreasing immune-competency, and increasing the risk of pneumonia and thromboembolism. | 290   | 72% | 65            | 16.2% | 47   | 12% |
| If a dying child on a morphine drip experiences hallucinations and irritability, the best management would be to change to another drug such as hydromorphone                              | 28    | 7%  | 39            | 9.7%  | 335  | 83% |
| Research has supported the fact that loss of a child results in an increase in divorce and separation of the parents   | 170   | 42% | 100           | 24.9% | 132  | 33% |
| Obtaining training in PPC will support my ability to provide EOL care for children.  | 33    | 8%  | 83            | 20.6% | 286  | 71% |

Table 3  
Predictors of knowledge of PPC among nursing and PharmD students

| Model                       |                  | Unstandardized Coefficients |            | Standardized Coefficients | t      | Sig. |
|-----------------------------|------------------|-----------------------------|------------|---------------------------|--------|------|
|                             |                  | B                           | Std. Error | Beta                      |        |      |
| 1                           | (Constant)       | 69.365                      | 9.234      |                           | 7.512  | .000 |
|                             | Age              | -.191                       | .346       | -.037                     | -.553  | .581 |
|                             | Gender           | 2.560                       | 1.364      | .104                      | 1.877  | .061 |
|                             | Research         | -2.733                      | 1.964      | -.079                     | -1.391 | .165 |
|                             | PPC              | 2.032                       | 1.241      | .096                      | 1.638  | .102 |
|                             | Prevent          | -.688                       | .477       | -.081                     | -1.443 | .150 |
|                             | Income           | .287                        | .438       | .039                      | .655   | .513 |
|                             | Living           | .937                        | 1.226      | .044                      | .764   | .445 |
|                             | Nationality      | 1.069                       | 1.461      | .043                      | .732   | .465 |
|                             | Year             | -.551                       | .663       | -.061                     | -.831  | .407 |
|                             | Father education | .295                        | .626       | .030                      | .472   | .638 |
|                             | Mother educaion  | 1.264                       | .586       | .139                      | 2.158  | .032 |
|                             | Speciality       | 2.643                       | 1.343      | .120                      | 1.969  | .050 |
| a. Dependent Variable: SUMP |                  |                             |            |                           |        |      |