**Knowledge, awareness and attitude of Health Professions Students of KSAU-HS towards End of Life Patient care**

**ABSTRACT:**

**Objectives**: Provision of ethical medical care is the totem pole of the health care system and to make appropriate decisions while providing the end-of-life (EOL) care is essential for all practicing physicians. The aim of this study was to assess the knowledge, awareness and attitude of Health Professions Students (HPSs) about the bioethics of EOL medical care.

**Methods**: This cross-sectional study was carried out in all Colleges of King Saud Bin Abdulaziz University for Health Sciences (KSAU-HS), Jeddah Campus was conducted from November 2019 through December 2019. A predesigned questionnaire written in English containing essential elements about end of life patient care was adopted to achieve the purpose of the study.

**Results**: A total of 522 students responded positively to the dispensed survey, of them, 290 (55.6%) were males, while 232 (44.4%) were females with a ratio of 1:1.25. Also, 226 (43.3%) of the respondents were from College of Medicine (COM), 142 (27.2%) from College of Health Professions (COSHP), 86 (16.5%) from College of Applied Medical Sciences (CAMS) and 68 (13.0%) from College of Nursing (CON). 44.9% of the males and 52.6% of females had a disagreement with the statement that patient has the right to end his or her own life of which 24.8% of COM, 27.9% of CAMS, 35.3% of CON and 26.85% of COSHP Strongly Disagreed (P<0.001). Additionally, most of the HPSs of all colleges agreed to that terminally ill patients can die peacefully at home of which 69.9% were of COM, 46.5% of CAMS, 41.2% of CON and 46.5% of COSHP students (P<0.001). Also, the analysis of showed that among the four colleges, COM & CON students’ bioethical knowledge & awareness about end-of-life care was higher than that of CAMS and COSHP.

**Conclusions**: The awareness about the bioethical concepts of EOL care was fairly good among HPSs of KSAU-HS however this study identifies a need of introducing the bioethical concepts related to palliative care within the curriculum.

**Keywords**: End of Life; Student’s; Health Professions; Medicine; Palliative Care; COM; KSAU-HS

**Introduction:**

In the current practice of the medicine around the world there is much focus nowadays on how to relieve the suffering and concomitantly improve the quality of life of the terminally ill [1,2]. Currently, medical practice is guided robustly by a number of legal and ethical guides about end-of-life care, which ensures the better quality of life for the critically ill patients as well as to their families and care takers [3-5].

With the advancement of medicine-assisted prolonging of life, there is an increasing demand of the well maintained and reliable palliative care in the world nowadays. This in turn is reflective of the ever increasing need of proper training to the physicians with basic knowledge and skills for providing the essential treatment from life-prolonging therapies to end-of-life care [6].

Hence in current form of practicing medicine, palliative care (PC) has been recognized as a pivotal component of quality of life care for patients, especially those who are suffering from advanced or incurable diseases as it mainly focusses on “*anticipating, preventing, diagnosing & treating symptoms experienced by patients with a serious or life-threatening illness*” [7].The primary goal of PC is medical intervention to improve the quality of life of terminally ill patients and additionally to solve the various secondary problems faced by the patients themselves or their families like easing pain, provision of bereavement counseling, psychological & spiritual support, helping in making decisions etc [8].

In the current models of curricula of imparting Medical Education, End-of-life care education has been deemed as the necessary requirement of the Liaison Committee for Medical Education (LCME), but it has still not been implemented adequately around the world and hence there is a huge gap in curricula] [9,10]. Furthermore, provided the complexity and time limitations in Medical Education, Health Professions students have a limited exposure to the end-of-life training because of which they struggle to apply their limited knowledge and skills to the clinical cases especially to terminally ill patients and do often confuse technical facts to make a justifiable and ethical decisions regarding patient care [5].

Hence, the present study was designed to investigate the Health Professions students’ awareness and perception concerning the bioethical concepts around terminally ill patients and its applications in patient care in KSAU-HS in Jeddah campus.

The investigation aimed to answer/know the following questions:

1. What is the level of agreement of Health Professions students’ of the bioethical concepts and clinical practice concerning the terminally ill patients in KSAU-HS in Jeddah campus?
2. Is there any gender bias in level of Awareness & Perception about terminally ill patient care among the Health Professions students’?

**Methodology:**

This study is a descriptive type of research using survey approach. The study was carried in between October & December 2019. All students were randomly selected and convenience sampling method was used for the selection. The study was approved by institutional Ethic and Research Board (IRB) of King Saud bin Abdulaziz University for Health Sciences (KSAU-HS) & King Abdullah International Medical Research Center (KAIMRC).

Sample size was calculated by using the Raosoft® software (website link: www.raosoft.com/samplesize.html). The required sample size was calculated at the 90% confidence level with an estimated 50.0% prevalence of awareness regarding euthanasia and a margin of error ±5%. With a total students population at College of Medicine =780, College of Nursing =290, College of Health Professions = 1100 and College of Applied Medical Sciences = 400). The total numbers of students in KSAUHS, Jeddah Campus being 2570. The necessary determined sample size was calculated to be 245, however the final sample size of 350 was deemed best representation of the study population (for 95% confidence levels) to account of 10% non-response rate.

An informed consent from all the participants was duly taken followed by the implementation of a pre designed questionnaire containing the questions about the terminally ill patient care. The survey used was carefully developed after an extensive literature survey [5, 11-14]. Before its dispensation, pilot test of the survey was carried out among focal group of students for its validity and changes were made according to the feedback received.

The data from the students was collected via online survey using Google Forms platform. The questionnaire was sent to all Health Professions Students via their official email by the Students Affairs Departments of each College located within Jeddah campus. The questionnaire comprised of two sections: Section A contained questions about the demographics. Section B contained 10 statements to assess the HP students’ perception and awareness about End of Life patient care [Questionnaire Available on Request]. Each answer of the survey was analyzed as per five point Likert scales (0-5) of representing Strongly Disagree, Disagree, Neutral, Agree and Strongly Agree.

The data collected were tabulated and analysis was performed using IBM SPSS Statistics for Windows, version 24.0. Appropriate statistical tools were employed in the data analysis, P-values less than 0.05 were accepted as statistically significant.

**Results:**

A total of 522 students responded positively to the dispensed survey, of them, 290 (55.6%) were males, while 232 (44.4%) were females with a ratio of 1:1.25. The mean age of the respondents was 21 (SD=1.7). Demographic characteristics of the participants are presented in Table 1.

Furthermore, 136 (26.1%) of the respondents were from First Year, 88 (16.9%) were from Second year, 180 (34.5%) from Third year, 92 (17.6%) from Fourth year and 26 (5.0%) were from Fifth and above years of their academic level. Also, 226 (43.3%) of the respondents represented COM, 142 (27.2%) were from COSHP, 86 (16.5%) from CAMS and 68 (13.0%) from CON [Table 1].

Question wise analysis of the survey is as given below [See Table 2 & Table 3]:

1. **Do you think a patient has the right to end his or her own life when in terminal condition?**

Of the total 522 respondents, 28.3% of the males and 25.9% of females Strongly Disagreed with the statement; furthermore 16.6% of the males and 26.7% of females opted for Disagree choice. Cumulatively, 44.9% of the males and 52.6% of females had a disagreement with the statement which was statistically significant (P<0.001). Additionally, as per the stratification of colleges, major portion of the students of all colleges had disagreement with the statement of which 24.8% of COM, 27.9% of CAMS, 35.3% of CON and 26.85% of COSHP opted for Strongly Disagree option and 23.0% of COM, 25.6% of CAMS, 11.8% of CON and 19.7% of COSHP opted for Disagree option (P<0.05).

1. **Should human life be defended regardless of its quality?**

31.0% of the males and 23.3% of females Strongly Agreed with the statement; furthermore 34.5% of the males and 25.9% of females opted for Agree choice. Cumulatively, 65.5% of the males and 49.2% of females had an Agreement with the statement which was statistically significant (P<0.05). Also, major portion of the students of all colleges had agreement with the statement of which 31.0% of COM, 18.6% of CAMS, 23.5% of CON and 29.6% of COSHP opted for Strongly Agree option and 36.3% of COM, 27.9% of CAMS, 23.5% of CON and 26.8% of COSHP opted for Agree option (P<0.001). Furthermore, 28.8 % of COSHP students had disagreement with the statement – reflective of the opinion that they consider the quality of life of a terminally ill patient an important aspect/factor for the provision of the medical care; this was in sharp contrast with the COM students who supported the life at any quality.

1. **The physician has the responsibility to explain to patients the real situation of their health status**

74.5% of the males and 67.2% of females Strongly Agreed with the statement; cumulatively, 89.0% of the males and 78.4% of females had an Agreement with the statement which was statistically significant (P<0.01). Also, major portion of the students of all colleges had agreement with the statement of which 79.6% of COM, 65.1% of CAMS, 52.9% of CON and 70.4% of COSHP opted for Strongly Agree option; cumulatively, 91.1% of COM, 90.7% of CAMS, 58.8% of CON and 81.7% of COSHP opted for Agree option (P<0.001) which was overwhelmingly statistically significant (P<0.01). Only a small portion of the CON students (11.8%) Strongly Disagreed – reflective of the opinion that they do not agree that physician has responsibility to explain to patients of their health status.

1. **Patient has the legal right to choose to die with dignity, even using a possibly life shortening method**

The opinions of the students didn’t not differ significantly when assessed based on gender, but did so significantly (P<0.001) based on their college of education. While 39.5% of CAMS and 31.0% of COSHP students opted for Strongly Disagree only 17.7% of COM and 11.9% of CON chose to have strong disagreement. Overall, 69.7% of CAMS and 54.9% of COSHP students has a disagreement with this statement, representing that the advanced medical education and training does have an effect on the bio ethics and legal opinions of the students.

1. **Patients should be allowed to deny potentially life-preserving treatment?**

The perception of the students differed significantly (P<0.001) based on their college/level of education. While, 20.9% of CAMS, 29.4% of CON and 22.5% of COSHP opted for Strongly Agree option only 11.5% of COM opted for it. However, 28.3% of COM opted for Agree option but only 11.6% of CAMS, 17.6% of CON and 12.7% of COSHP opted for Agree option. Overall, almost half of the students of COSHP (46.4%) were more in disagreement for this idea while as COM students (47.8%) were in favor of the idea. Furthermore, there was a significant difference in perception among males and females for this idea with 37.3% of the males agreeing to the statement while as 38.8% of females disagreeing to it (P=0.015).

1. **Patients with incurable diseases have the right to know their diagnosis**

A major portion of the students of all colleges had agreement with the statement of which 80.5% of COM, 72.1% of CAMS, 64.7% of CON and 76.1% of COSHP opted for Strongly Agree option; cumulatively, 93.8% of COM, 90.7% of CAMS, 70.4% of CON and 86% of COSHP opted for Agree option which was statistically significant (P<0.01). This is reflective of the opinion that students are aware of the patients’ rights and share responsibility that they need to be well informed of their diagnosis and overall nature of their health.

1. **Patients should not have the right to deny medical care?**

Cumulatively, a major portion of the students of all colleges had disagreement with the statement of which 68.1% of COM, 48.8% of CAMS, 47.0% of CON and 45.1% of COSHP students (P<0.001). The disagreement reaffirms that majority of the respondents were aware of the concept of basic human rights, however the level of awareness was more for the COM students than the basic year students (CAMS and COSHP).

1. **Administering narcotics that provides relief of pain and shortening of life, is legally permitted**

Cumulatively, most of the students of all colleges agreed to the statement of which 53.1% were of COM, 39.6% of CAMS, 41.4% of CON and 32.4% of COSHP students (P=0.001). The agreement is in contrast to the Q5 which is having the similar idea of shortening of life. Somehow, the students think that patients’ should not be able to decide which and what drugs to take or deny but administration of drug for the pain knowing that it can lead to shortening of life seemed okay to them. However it is pertinent to mention that for both bio ethics ideas, COM students had a consistent perception.

1. **Interrupting methods that prolong the process of dying and avoiding useless suffering of terminally ill patient are legally permitted**

The perception of the students for this statement hovered around the neutral trend when analyzed on the basis of gender, with 47.6% of the males and 37.1% of females opting neutral option, 21.4% of the males and 20.7% of females opting agree while as only 9.7% of the males and 20.7% of females opting disagree option (P=0.004). The same was the case when the data was analyzed on the basis of level of education with 38.9% of COM, 53.5% of CAMS, 41.2% of CON and 43.7% of COSHP students opting neutral option.

1. **Can terminally ill patients die peacefully at home?**

Cumulatively, most of the students of all colleges agreed to the statement of which 69.9% were of COM, 46.5% of CAMS, 41.2% of CON and 46.5% of COSHP students (P<0.001). The same was the case when the data was analyzed on the basis of gender with a total of 58.6% of the males and 57.8% of females agreeing to the statement.

**Discussion:**

In our current study, the HPSs were generally aware of the most bioethical concepts related to the end of life patient care and the concepts of ethical practice. Furthermore, the analysis of showed that among the four colleges, COM & CON students’ bioethical knowledge & awareness about end-of-life care was significantly higher than that of CAMS and COSHP. The results are in concordance with the earlier studies [5, 13- 15] for most of the questions.

In our study, most of the HPSs agreed that patients with incurable diseases should have knowledge regarding their diagnosis and that attending physicians has the responsibility to explain to them of their health status, the results are similar to the already reported one from Brazil [5]. Furthermore, majority of the HPSs agreed that human life be defended regardless of its quality but their opinion differed when asked about legal right to choose to die with dignity with most of CAMS and COSHP students disagreeing. This observation emphasizes upon the importance of organizing the curriculum towards better understanding of the needs of patients, to expose students early in their studies towards end-of-life courses and to impress upon the integration of learning with ethical practice [16].

Even though most of the HPSs had agreed to the patients’ right to know his diseases, most of them disagreed to the two important queries related to the treatment – Patients’ not having rights to deny medical care & the potentially life-preserving treatment. These results were similar to the studies published earlier [13, 14]. In their study, Nepal et al. had reported that 84.7% of the medical students agreed that patients have a right to refuse treatment and 56.9% of them agreed that patients have right to refuse life supporting treatment [13]. Marais et al. reported that 72.1% of medical students agreed that a patient should have the right to refuse medical care, while 69.8% agreed that patients should be allowed to refuse potentially life-preserving treatment [14]. This established the fact that HPSs clearly supported the practice of allowing patients to make decisions regarding their life, health and treatment received.

Furthermore, most of the HPSs had a neutral opinion about the permissibility of the interrupting methods that prolong dying/avoid suffering of terminally ill patients while as majority agreed to the use of narcotics that provide relief of pain and shortening of life. Additionally, most of the HPSs of all colleges agreed to that terminally ill patients can die peacefully at home of which 69.9% were of COM, 46.5% of CAMS, 41.2% of CON and 46.5% of COSHP students (P<0.001). These results are in concordance with the study by PinheiroI et al., who reported that 47% of respondents in his study partially accepted the use of drugs to relieve pain, but with a possible life-shortening effect, 98.2% agreed that terminally ill patients can die at home [5]. The agreement is reflective that students were aware of the dignified death irrespective of the medical intervention is required or not. The results emphasize the need of the well-established palliative care training to be embedded within the curriculum so as to train the budding Health Profession students about the primary focus of alleviating the suffering of terminally ill patients and also to teach them about the need of providing the emotional and spiritual assistance [17]. It has been argued that palliative care is most effective when incorporated early in patient care and furthermore can lead to the development of the comprehensive medical care model which incorporates palliative care with the personalized therapy at the time of diagnosis [18].

It is argued by many medical professionals that in the current form of Medical care, which is available to patients; palliative care occupies an important corner stone in medical treatment. Under any setting, in any society and in any medical care palliative care provides a necessary help not only to the patient but also to his kith and kin [19]. Palliative care is often considered as a combination of the pain medicine, geriatric medicine and rehabilitative medicine [7, 18]. Good palliative care provided by a well-trained team is able to control psychological, social, spiritual, physical and existential suffering. And, in this current scenario, Euthanasia - a mercy killing or physician assisted suicide for the terminally ill patients [20], is directly at loggerheads with the palliative care [21]. As a consequence, to legalize and practice euthanasia under the clock of “therapeutic killing” will have far reaching deleterious effects on the manner in which palliative care is provided and also on Medical Care in general [19, 22].

In the western world, the significance of palliative care in the undergraduate level of health professions curriculum has been well recognized, leading to the establishment of palliative care departments of varied settings containing varied staff [23, 24]. Furthermore, as observed the palliative care education in medicine schools is following an increased trend across the globe, but it still has a wide variation in its contents & delivery as no standardized core curriculum is followed to letter and spirit [23]. Introduction of palliative care into health professions curriculum should have a multidisciplinary approach and the educators of this important subject should comprise of general physicians, oncologists, geriatrician, nurses, pharmacists, medical practice social worker, physiotherapist and medical educationists [25].

The major limitation of this study was a convenience sample methodology from the four colleges of KSAU-HS, Jeddah campus, which could lead to misrepresentation of the views of students’ across all colleges. Also, respondents were predominantly from COM, which may limit the generalizability of the results for other colleges as well.

**Conclusion:**

The awareness about the bioethical concepts of end of life care was fairly good among the Health Professions Students of KSAU-HS especially among COM students and it differed significantly from other colleges. Also, gender stratification of the data showed that for most questions there was a significant difference of opinions between male and female HPSs. Furthermore, owing to the arising needs in current medical care, this study identifies a dire need of introducing the students to bioethical concepts related to palliative care; therefore we recommend that palliative care should be made a part of curriculum at the undergraduate level so that the HPSs would be exposed early on to the concepts of terminally ill patients care.

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**Ethical Clearance:**

This study was approved by the Institutional Review Board of King Abdullah International Medical Research Centre (KAIMRC), a research wing of KSAU-HS, Jeddah (***Reference No: SP19-127-J; Dated: 03/11/2019***).

**Author Contributions:**

**SSA** conceptualized the project, designed the study questionnaire in its final form, analyzed the collected data and wrote the entire manuscript.

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