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Knowledge assessment of PHC physicians regarding palliative care in PHC in eastern province, Saudi Arabia-(Dammam & Khobar): Cross sectional study. 2019-2020

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Abstract
Background: Previous researches have established that the access to palliative care in the life is one of the patients' rights. Therefore, it should be delivered into every level of health care or PHCCs. Knowledge assessment of PHC physicians regarding palliative care in PHC, it is not clear what their current level of knowledge and attitude toward palliative care is. So, the study aims to evaluate the knowledge of PHC physicians about primary palliative care.
Methods: This is a cross-sectional descriptive which was conducted in KSA between March 2019 and February 2020. The participants of the study were PHC physicians in eastern province, Saudi Arabia - Dammam & Khobar. The study included 154 PHC physicians.
Results: More than half of participants (53%) aged 30, 28.1% aged 30-40 years while 10% aged more than 40 years. Most participants (57%) were Females, while 62% had MBBS FM resident 28% had a FM specialist. Or less years. Less than half of physicians' PHC centers (46.9%) had They have never worked in palliative care unit or clinic. Stepwise multiple regression analysis indicated that only 19.9% of palliative care knowledge could be explained by under-standing of palliative care definition, education level and experience in providing palliative care in hospital. Although palliative care training did not have a significant correlation (Practice experience) Hospital palliative care experience. Also, revealed that 74% when asking doctors about the job title in PHC, years of experience working in PHC center and palliative care training. Table3 and Table4 explain the results of the multiple regression analysis
Conclusion: The majority of primary care physicians or most had uncertain attitudes and poor knowledge towards palliative care. Integrating palliative care into primary health care systems is urgently needed to alleviate the suffering of those patients. In conclusion**,** we recommend to raise palliative care in PHC physicians' awareness regarding palliative care in PHC, especially those with no postgrad-uate studies and those with limited experience in PHC, through continuous medical education.

Keywords: PHCCs in KSA in eastern province, Palliative care, Competency-based education, Training of doctors

1. Introduction

The World Health Organization's definition of Palliative Care is: "The active total care of patients whose disease is not responsive to curative treatment. Control of pain, of other symptoms and of psychological, social and spiritual problems is paramount. The goal of palliative care is achievement of the best quality of life for patients and their families. Many aspects of palliative care are also applicable earlier in the course of the illness in conjunction with anticancer treatment. (AJ, Ezzat A, 1995:15) [5].
The importance of palliative care is concerning around integration of the psychological and spiritual aspects of patient care, Offers a support system to help patients live as actively as possible until death, Offers a support system to help the family cope during the patient's illness and in their own bereavement, Enhances quality of life and may positively influence the course of illness and looking for the needs of patients with non-cancer life-threatening illnesses whom are comparable to that of cancer patients.(R, Wellbery, 2013:88) [8].
Barriers of palliative care in general account for several factors like; 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. 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. Uncertainty about prognosis poses an additional challenge for physicians. Studies show that although the physician–patient relationship provides a meaningful context for addressing end-of-life issues, the degree of uncertainty about prognosis directly correlates with the longevity of this relationship.

Insufficient training for physicians and nurses, including a lack of familiarity with various prognostic tools, may also have a role. (R, Wellbery, 2013:88) [8].

A more subtle barrier surrounds the psychology of decision making. Patients tend to be overly optimistic, believing that prescribed treatments will cure even incurable diseases. For physicians, the fear of causing harm by failing to do something may overshadow the fear of actively doing something harmful (i.e., therapeutic optimism). (R, Wellbery, 2013:88) [8].

2. Literatures review

A cross sectional study done in Spain at 2000 carried out on 224 doctors and 186 nurse's states: 40% of professionals considered that terminal care should be the responsibility of PHC, whereas 59.5% thought it preferable for such care to be given either in Palliative Care Units or by oncologists. All kinds of relationships between PHC professionals and specialists were highly valued. 75% of general practitioners referred to pain control, and 83% of doctors and nurses provided emotional support. A need for tuition in palliative care was clearly stated. the planning of palliative care should take into account the attitudes and opinions of PHC doctors and nurses. (ME, Cánaves, 2000:8) [2].

A cross-sectional study was conducted in three tertiary care hospitals and areas of general practice in Pakistan where 236 non-oncologist physicians were assessed. Most of them claimed to have cared for cancer patients in some way and considered that cancer treatment is often long and protracted. However, one-third were unaware of the fact that cancer is a major disease burden in their society. About half of them thought that chemotherapy makes patients miserable. Most physicians, including consultants, were unaware of the term hospice. Many did not know where to refer cases of cancer and about the commonest cancers in Pakistani males. Concluded that awareness about cancer and palliative care among primary physicians needs to be improved for cancer prevention and control. (AJ, Khokhar NA, 2008:9) [13].

In a systemic review done University of Queensland Medical School in 2002. Medline and PubMed databases from 1966 to 2000 were searched, and 135 references identified. 66 of these described studies relevant to General Practitioner (GP) palliative care. Efforts by specialist services to develop formal involvement of GPs in the care of individual patients, may be an effective method of improving GP palliative care skills and appreciation of the role's specialist services can play. (Mitchell GK, 2002:16) [9].

Qualitative descriptive study done at the University of Toronto in Ontario conducted with Family Medicine Residents following a 4-week palliative care rotation. Questions focused on participant experiences during the rotation and perceptions about their roles as family physicians in the delivery of palliative care and home visits. Study concluded with: residents described experiences that both supported and inadvertently discouraged them from considering future engagement in palliative care. Reassuringly, residents were also able to underscore opportunities for improvement in palliative care education. (R, Kurahashi AM, 2015:61) [6].

Another descriptive study done in Belgium 2015 where they performed 18 interviews with people with cancer, organ failure or dementia and 6 focus groups, 4 with Family physicians (FP) and 2 with community nurses. They aimed to explore the views of FPs, nurses and patients about the tasks of the FP in palliative care for people with a life-limiting illness from diagnosis onwards. Their results help to elucidate the tasks and roles required of FPs to make integration of a palliative care approach into the care continuum possible. (K, Van den Block L, 2015:14) [1].

A study done in the Institute of Medical Science University of Toronto, 2017, Which examines patient perspectives of FPs' palliative care involvement, where advanced cancer patients attending an Oncology Palliative Care Clinic (OPCC) completed a survey about FP involvement. As hypothesized, most patients preferred to receive palliative care from their palliative care physician. Possible barriers to FP-provided palliative care included lack of knowledge of FP services, timely access to care, and perceived role of the FP. (Moon CC, 2018:8) [10].

Cross-sectional study took place at eight hospitals in the northern West Bank in Palestine done on 109 physicians who were responsible for the care of cancer patients. Resulted in, physicians' knowledge to be inadequate, with a mean knowledge score of 6.2 out of 14. The barriers that were perceived by the highest percentages of physicians to affect Cancer Pain Management (CPM) were inadequate pain assessment, insufficient experience, and insufficient knowledge, all of which are staff-related. Concluded with substantial knowledge deficits regarding CPM. Besides, many barriers appear to impede effective CPM. Therefore, appropriate educational programs and policy changes are recommended in order to improve professional performance as well as patient care. (AM, Toba HA, 2018:38) [12].

In a study done in king Faisal specialist hospital and research center (KFSHRC) looks at the experience of developing a palliative care service for the terminally ill since 1989 in the hope that other institutions in the Kingdom will be encouraged to do likewise where they summarize that a A palliative care program (PCP) would concentrate on two things:

1. Provide specialized care for those who inevitably die of their illness.
2. Provide educational programs which should focus on teaching health care professionals.

Finally, in this study they summarize the problems of palliative care in Saudi Arabia can be as follow; 1) the strong emphasis on "cure" even when this is no longer possible; 2) the lack of physicians with an interest in palliative care; 3) the fact that patients generally are not told their diagnosis of cancer and have no idea of their prognosis; 4) the lack of a family health service, integrated with secondary and tertiary care, to provide continuity of care in the community; 5) the lack of adequate methods of pain relief; 6) the unwillingness to discuss issues of death and dying. (AJ, Ezzat A, 1995:4) [5].

Retrospective review of the "palliative care inpatient database" of 21 months done in KSA-Dammam resulted in 20 (4.2%) had a noncancer diagnosis. The main reason for the referral of noncancer patients was pain control. The most prevalent diagnoses were sickle cell disease (SCD) in 6 (30%) patients and peripheral arterial disease (PAD) in 5 (25%). concluded with, these findings suggest that the PC needs of noncancer patients are largely unmet in our region. Further efforts are necessary to advance noncancer palliative care in Saudi Arabia. (HM, Shaikh RM, 2011:17)

3. Study rational

Palliative care should be part of a broader continuum of care, thereby avoiding abrupt changes in the medical course.

PHC physicians should play an essential role in providing palliative care as they have the closest relationship with patients in the community

Family medicine and palliative medicine share the same comprehensive, patient and family centered approach of care; PHC physicians are well suited to provide palliative support to their patients

In general, most patients want to spend their final weeks to days at home; this can be achieved with the support of PHC physicians in the community

PHC physicians are well-positioned to discuss advance care planning during routine office visits.

Physicians should contextualize decisions around goals of care, which preserves hope and optimism but reorients treatment toward appropriate aims.

4. Study aim

Evaluate the knowledge of PHC physicians about primary palliative care.

5. Study objectives

To assess the knowledge of the PHC physicians about palliative care

6. Methodology

6.1 Study design

A cross-sectional descriptive study

6-2 Study population & settings

Primary health care physicians at Dammam and Khobar cities MOH-PHC centers, eastern KSA

6.3 Inclusion/ Exclusion criteria

6.3.1 Inclusion

All PHC physicians and general practitioners working in primary health care centers in Ad Dammam and AL Khobar, on duty during the study period, who agree to participate.

6.3.2 Exclusion

Non-Ministry of Health physicians.

Non PHC physicians (e.g., pediatrician, ophthalmologist, dermatologist.)

6.4 Sampling

All PHC physicians working at Ad Dammam & AL Khobar sector who meet the inclusion criteria to include in this study.

6.5 Target population:

255 physicians (144 from Dammam and 60 from Al-Khobar).

7. Study variables

7.1 Dependent

PHC physician knowledge about palliative care

7.2 Independent

- Socio demographic data (age, gender, year of graduation, postgraduate training).
- Number of patients seen per day.
- Availability of Education program in the institution.
- Practice experience.

7.3 Data collection methods and technique

Self-administered questionnaire partially constructed by the researcher with reference to already made validated questionnaire in another study approval permitted. (Y, Miyashita M, 2009:23) [11].

The questionnaire will have 2 main sections on:

1. Physicians' profile.
2. Knowledge assessment about palliative care with 5 subscales.

8. Data analysis

Data were analyzed using SPSS[25]. Descriptive statistics analyzed background information, palliative care knowledge and experience level. Pearson's correlation determined the correlation between continuous variables, including knowledge scores, experience scores and continuous demographic variables (Gender, Age and What is your job title). Independent-tests identified the mean difference in the total variables and experience level between categorical demographic variables. The variables that showed a significant correlation with palliative care knowledge and comfort in bivariate analysis were included in the regression model. Stepwise multiple regression tested for predictor variables for palliative care knowledge and comfort. The significance level was set at two-tailed P,0.05. Data are presented as the mean s.d. for continuous variables and as numbers (percentages) for categorical variables.

9. Results

The study included 154 PHC physicians. Table1. shows that more than half of participants (53%) aged 30, 28.1% aged 30-40 years while 10% aged more than 40 years. Most participants (57%) were Females, while 62% had MBBS FM resident 28% had a FM specialist. Or less years. Most of them (77.7%) were males. Table2. Shows that less than two thirds of PHC physicians (59.4%) heard about the attended training course in palliative care, while only 50.6% of them read about it. Less than half of physicians' PHC centers (46.9%) had They have never worked in palliative care unit or clinic.

Table 1: Personal characteristics of PHC physicians in eastern province, KSA

Characteristics	Mean ± SD	p -value
Age in years:		
< 30	32.61 ±5.31	***0.0667***
40-31	***33.43*** ±5.57	
>50	***29.85*** ±6.02	
Gender:		
Female	28.35 ±5.31	***0.0822***
Male	***25.72*** ±5.57	
What is your job title ?		
GP	22.84 ±4.35	***0.0741***
FM specialist	***23.51*** ±4.74	
FM resident	***27.42*** ±6.51	

Source: Author's calculations using SPSS[25].

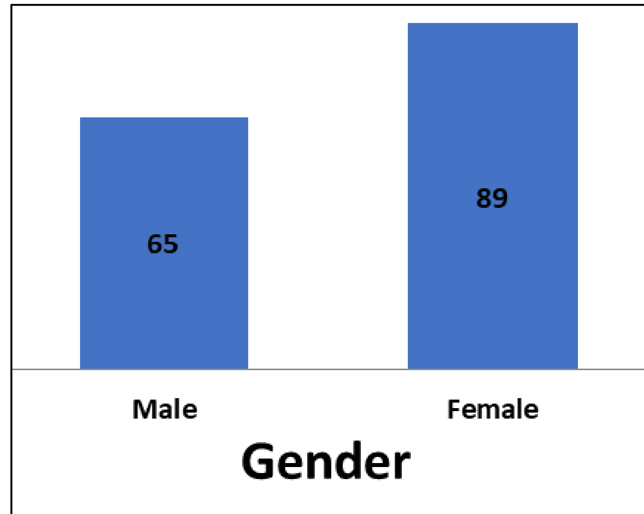

Fig 1: Gender of PHC physicians in eastern province, Saudi arabia (Dammam & Khobar)

Table 2: PHC physicians' awareness regarding Attending training courses and working in palliative care unit or clinic

p -value	No. %
During you practice, have you ever worked in palliative care unit or clinic?	
Yes	92 59.4
No	62 50.6
Have you attended training course in palliative care?	
Yes	108 70.1
No	46 29.9

Source: Author's calculations using SPSS[25].

Results of multiple regression analysis

Through statistical analysis, stepwise multiple regression analysis indicated that only 19.9% of palliative care knowledge could be explained by under-standing of palliative care definition, education level and experience in providing palliative care in hospital. Although palliative care training did not have a significant correlation (Practice experience) Hospital palliative care experience, this variable was still included in the stepwise multiple regression analysis because previous studies reported palliative care training as a significant variable affecting knowledge (Schmit et al. 2016; Stacy et al. 2019; Mason et al. 2020) [19, 7]. In the present study, the stepwise multiple regression analysis revealed that 74% when asking doctors about the job title in PHC, years of experience working in PHC center and palliative care training. Table3 and Table4 explain the results of the multiple regression analysis

Table 3: Predictor variables related to palliative care knowledge

Variable	β	t	R^2
(Availability of Education program in the institution) Understanding of palliative care definition	0.43	6.3***	0.084
(Practice experience) Hospital palliative care experience	0.37	2.9**	0.196

Source: Author's calculations using SPSS[25].
n= 154 *P<0.05, **P<0.01, ***P<0.001

Table 4: Socio demographic data

Variable	β	t	R^2
Age in years	0.88	31.17***	0.084
Gender	-0.57	-3.42**	0.126
What is your job title?	-0.46	-2.72*	0.741

Source: Author's calculations using SPSS[25].
n= 154 *P<0.05, **P<0.01, ***P<0.001

10. Discussion

This study measured the level of Knowledge assessment of PHC physicians regarding palliative care in PHC in eastern province, Saudi arabia (Dammam & Khobar). The number of correct answers measuring knowledge about various topics varied between 29% and 52% with a mean overall score of 6.74/8.31. The result shows that more than half of participants (53%) aged 30, 28.1% aged 30-40 years while 10% aged more than 40 years. Most participants (57%) were Females, while 62% had MBBS FM resident 28% had a FM specialist. Or less years. Most of them (77.7%) were males. Table2. shows that less than two thirds of PHC physicians (59.4%) heard about the attended training course in palliative care, while only 50.6% of them read about it. Less than half of physicians' PHC centers (46.9%) had They have never worked in palliative care unit or clinic. Age and years working in PHC units had a significant negative correlation with PHC knowledge and regarding palliative care in PHC in eastern province, Saudi Arabia. These results imply that younger providers had better palliative care knowledge and

experience. In contrast, most studies have reported that older health care providers have better knowledge and experience because they have had more experience in providing palliative care and caring for terminally ill patients than younger providers. Stepwise multiple regression analysis indicated that only 19.9% of palliative care knowledge could be explained by under-standing of palliative care definition, education level and experience in providing palliative care in hospital. Although palliative care training did not have a significant correlation (Practice experience) Hospital palliative care experience, this variable was still included in the stepwise multiple regression analysis.

With regard to collaboration and participation among physicians, we need to face several challenges: conflict, ambiguity and overlapping of the roles of the physicians, inadequate communication, and leadership problems. The introduction of multidisciplinary teams is a necessity for the provision of health services in order to increase the efficiency of care, especially the palliative care. The team represents a workspace focused on creative problem solving, especially when the contribution of all its professionals is based on respect and when there is a sense of responsibility towards the patient's well-being and achieve health care goals. The major limitations of this study were mainly related to the subjective nature of the measurement tool as actual knowledge might differ from acquired knowledge. Nevertheless, it is possible to argue that the knowledge measurement tool was able to detect several knowledge's with very low adherence to the guidelines and experience. Finally, although the data collection tool was administered anonymously and the questionnaires were sent electronically, some physicians might have hesitated about participating due to a lack of interest in adhering to the guidelines and the fear of exposing this state of affairs to their employer. However, this can only be assessed using objective assessment approaches.

In conclusion, a considerable proportion of PHC physicians in eastern province, Saudi Arabia (Dammam & Khobar) Region did not hear or read about the palliative care in PHC. More than half of PHC centers do not exhibit posters on palliative care in PHC. Therefore, it is recommended to raise palliative care in PHC physicians' awareness regarding palliative care in PHC, especially those with no postgrad-uate studies and those with limited experience in PHC, through continuous medical education.

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Data Availability

All relevant data are within the manuscript and its Supporting Information files.

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Appendix

Questionnaire

Section 1: Physician's data

1. Age:…..
2. Gender
   - A. Male
   - B. Female
3. What is your job title?
   - A. GP
   - B. FM resident
   - C. FM specialist
   - D. FM consultant
4. How long have you been in practice?
   - A. < 5
   - B. 5 – 10
   - C. > 10
5. During you practice, have you ever work in palliative care unit or clinic?
   - A. Yes
   - B. No
6. Duration of experience in hospice or palliative care unit, years
   - A. Non
   - B. 1-4
   - C. > 4
7. Number of terminal cancer patients who have been cared for
   - A. None
   - B. 1-9
   - C. 10-49
   - D. 50-100
   - E. >100
8. Number of terminal cancer patients cared for last year
   - A. None
   - B. 1-9
   - C. 10-49
   - D. 50-100
   - E. >100
9. Palliative care education as an undergraduate, (weeks)
   - A. < 2 weeks
   - B. 2-4 weeks
   - C. > 4 weeks
10. Palliative care education as a postgraduate, (weeks)
    - A. < 2 weeks
    - B. 2-4 weeks
    - C. > 4 weeks
11. Participation frequency in palliative care seminars
    - A. None
    - B. 1
    - C. 2-5
    - D. > 5
12. 7- Have you attended training course in palliative care ?
    - A. Yes
    - B. No

Section 2 palliative care Knowledge assessment items:

Philosophy

1. Palliative care should only be provided for patient who have no curative treatments available.
2. Palliative care should not be provided along with anti-cancer treatments.

Pain
3. One of the goals of pain management is to get a good night's sleep.
4. When cancer pain is mild, pentazocine should be used more often than an opioid.
5. When opioids are taken on a regular basis, non-steroidal anti-inflammatory drugs should not be used.
6. The effect of opioids should decrease when pentazocine or buprenorphine hydrochloride is used together after opioids are used.
7. Long-term use of opioids can often induce addiction.
8. Use of opioids does not influence survival time.

Dyspnoea
9. Morphine should be used to relieve dyspnoea in cancer patients.
10. When opioids are taken on a regular basis, respiratory depression will be common.
11. Oxygen saturation levels are correlated with dyspnoea.

Psychiatric problems
12. During the last days of life, drowsiness associated with electrolyte imbalance should decrease patient discomfort.
13. Some dying patients will require continuous sedation to alleviate suffering.
14. Morphine is often a cause of delirium in terminally ill cancer patients.

Gastrointestinal problems
15. At terminal stages of cancer, higher calorie intake is needed compared to early stages.
16. There is no route except central venous for patients unable to maintain a peripheral intravenous route.
17. Steroids should improve appetite among patients with advanced cancer.
18. Intravenous infusion will not be effective for alleviating dry mouth in dying patients.

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