

# Family Medicine Residents' Knowledge and Attitudes About End-of-Life Care in Taif City, Saudi Arabia

Review began 11/28/2023

Review ended 12/15/2023

Published 12/17/2023

© Copyright 2023

Alghamdi et al. This is an open access article distributed under the terms of the Creative Commons Attribution License CC-BY 4.0., which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Abdulrhman N. Alghamdi <sup>1</sup>, Turki A. Alzahrani <sup>2</sup>, Ghadah H. Alswat <sup>1</sup>, Hatun A. Althagafi <sup>1</sup>, Sarah A. Alosaimi <sup>1</sup>, Waad W. Alalawi <sup>1</sup>, Arwa Turkstani <sup>1</sup>

1. Family Medicine, College of Medicine, Taif University, Taif, SAU 2. Family Medicine, Prince Mansour Military Hospital, Taif, SAU

Corresponding author: Ghadah H. Alswat, alswat.gh@gmail.com

## Abstract

### Background

End-of-life care is essential for individuals with advanced illness and their families, providing comfort, symptom control, and dignity in the final year of life. Additionally, physician competence requires the ability to communicate, make decisions, and create relationships in end-of-life care. This study assesses family physicians' knowledge and attitude regarding end-of-life care in Taif, Saudi Arabia.

### Methods

This descriptive cross-sectional study conducted between October and November 2021 assessed the knowledge and attitudes of 163 family physicians in Taif City, Saudi Arabia, regarding end-of-life care. Using a convenient sampling technique, an adapted and validated questionnaire was administered electronically, collecting sociodemographic information and assessing participants' knowledge and attitudes. Data were analyzed using descriptive statistics in Statistical Product and Service Solutions (SPSS, version 28) (IBM SPSS Statistics for Windows, Armonk, NY).

### Results

Findings included that 41.1% of residents believed the patient and family should be informed about diagnoses and prognoses in advanced diseases. At the same time, attitudes varied, with 45.4% agreeing that discussing such information could lead to patient depression and 42.9% believing it held no privilege for patients. Additionally, 57.7% recognized that grief reactions would occur, but patients would eventually adjust, and 44.8% agreed that discussing diagnoses would decrease patient anxiety. However, limited awareness of advance directives was evident, with 12.3% reporting being well aware and 45.4% having never heard of them. There was uncertainty and hesitancy regarding Do Not Attempt Cardiopulmonary Resuscitation (DNACPR) decisions, with 39.9% being well aware and 46% having heard of it without a strong understanding.

### Conclusion

The findings revealed a mixed landscape, with physicians demonstrating awareness of the importance of transparent communication but needing more knowledge in areas such as advance directives and complex decision-making. The study highlighted the need for targeted education to address these gaps and promote a more informed and consistent approach to end-of-life care.

**Categories:** Palliative Care, Family/General Practice, Public Health

**Keywords:** end-of-life ethics, end-of-life and hospice care, team-based end-of-life care, family medicine residency, taif city

## Introduction

End of life is identified as the life in the year immediately before the death of a person with advanced illness, regardless of the palliative care, they receive [1]. Effective care for life-limiting illness is critical for the individual and their families for considerate reasons. When effective, end-of-life care makes it possible for people with advanced, progressive, incurable diseases to remain comfortable in the past year of life. Distressing symptoms (e.g., respiratory problems, pain, fatigue, and anxiety) are controlled, and individuals can die with dignity and respect for desires, and family satisfaction can also be reported [2]. Management of palliative and end-of-life care has recently been defined as a priority in nursing homes that presently provide support for numerous frail older people with multi-morbidities requiring complicated care [3].

Each year, there are approximately 56 million deaths globally, with 85% occurring in developing countries. The impact of these deaths extends beyond the individuals themselves, affecting an estimated five other

### How to cite this article

Alghamdi A N, Alzahrani T A, Alswat G H, et al. (December 17, 2023) Family Medicine Residents' Knowledge and Attitudes About End-of-Life Care in Taif City, Saudi Arabia. Cureus 15(12): e50652. DOI 10.7759/cureus.50652

people, particularly in developing nations. This impact encompasses informal caregiving responsibilities and the emotional burden experienced by relatives and friends. Consequently, the provision of end-of-life care affects a substantial number of individuals, approximately 300 million people, which accounts for around 5% of the world's population annually [4]. Physician competence requires communicating, making decisions, and creating relationships in end-of-life care. Physicians' ability in this field is directly related to patients' satisfaction and adherence to medical advice [5]. Doctors should possess the knowledge, skills, and attitudes necessary to provide compassionate and appropriate care at the end of their lives, as much as they are competent to treat diseases and preserve good health and longevity. The need for adequate end-of-life care skills was accentuated by the global COVID-19 pandemic, which claims centuries-old lives irrespective of race, religion, or religion [6].

Family medical practitioners are necessary to maintain continuity in the terminal phase, before and during the deprivation period with the patients and families. The Canadian Medical Association reaffirmed in 1994 the role of the family doctor in primary care, including palliative care [7]. To comprehensively understand and enhance the quality of end-of-life care, it is crucial to approach it with cultural sensitivity [8]. Attitudes towards end-of-life care are inherently shaped by specific cultures, societies, and historical contexts. Furthermore, it is important to acknowledge that medical providers and patients may hold differing perspectives and values when it comes to decision-making in this context [9]. Therefore, a culturally sensitive approach is essential in navigating these complexities and ensuring effective and respectful end-of-life care.

Looking at the previous literature, Quiambao et al. [9] conducted a study to evaluate the proficiency of ears, noses, throat - head and neck surgeries (ENT-HNS) consultants and residents in end-of-life care. The assessment covered knowledge, skills, and attitudes related to end-of-life treatment. The results indicated that the majority of respondents scored poorly in all three areas, suggesting a lack of competence in end-of-life care among ENT-HNS practitioners [9]. Carver et al. [10] aimed to assess the neurologists' knowledge, attitude, and practice regarding end-of-life care. They reported that the legal, medical, and ethical guidelines for treating chronically ill patients, critical disease, and dying patients and the convictions and practices of many neurologists surveyed are very different. Due to the apparent lack of legal knowledge and confusion, discontinuity, or two regarding medical and ethical guidelines, palliative care education and decision-making are extremely needed [10]. End-of-life care is developing to become a particularly prominent field of medical practice. However, many places still lack end-of-life medical services, owing to the lack of appropriately trained medical personnel [11].

## Materials And Methods

This study aimed to assess the knowledge and attitudes of family physicians regarding end-of-life care in Taif City, Saudi Arabia.

### Study design

This descriptive cross-sectional study was conducted between October and November 2021 to evaluate the knowledge and attitudes of family medicine residents regarding end-of-life care in Taif City, Saudi Arabia.

### Sampling technique and sample size

Participants were selected using a convenient sample technique. The questionnaire was distributed online to the family physicians on specific social media platforms, including WhatsApp, Telegram, and X app, and comprised questions made to meet the study objectives. In addition, we collected data from the residents of the hospital by face-to-face interview. All participants were asked to complete the questionnaire only once. The sample size was determined using the EPI info program (Centers for Disease Control and Prevention, Atlanta, GA), taking into account a 95% confidence interval, 5% margin of error, and a total population of 182 family physicians based on the Statistical Yearbook 2019 of the Ministry of Health in Saudi Arabia. The estimated sample size was calculated to be 124 participants.

### Study participants

The study encompassed family physicians actively practicing and delivering primary care services in Taif, Saudi Arabia. Eligible participants included both male and female family physicians, both Saudi and non-Saudi, in all four years of the family medicine residency program. The inclusion criteria focused on active practice in the city, ensuring a diverse representation of the population, and no specific exclusion criteria were applied.

### Data collection and data collection tool

For data collection, we utilized an adapted and validated questionnaire from a previous study conducted by Chang et al. in 2021 in Sri Lanka [6]. Permission was obtained from Chang et al. to use this questionnaire. The questionnaire was electronically administered through Google Forms [Appendix]. It commenced with a brief explanation of its purpose and intent, underscoring to participants that their involvement was voluntary and that their privacy and data anonymity would be protected. The initial section of the

questionnaire gathered sociodemographic information about the participants, while the second section focused on their knowledge and attitudes toward end-of-life care.

Data analysis

The data were analyzed using Statistical Product and Service Solutions (SPSS, version 28) (IBM Corporation, Armonk, NY). Descriptive statistics were performed using numbers and percentages.

Ethical consideration

The research study, approved under reference number 111-43 of the Ethics Committee at Taif University, obtained ethical approval and was closely monitored by the Taif University Research Committee to ensure compliance with ethical guidelines. Participants actively provided informed consent, and measures were taken to protect their privacy throughout the study. The research carried no known risks associated with participation.

Results

Characters of participating residents

The study population comprised 163 family physicians in Taif, Saudi Arabia. Males constituted 54.6% of participants, and the majority (95.7%) were Saudi nationals. About a fifth (20.9%) of the participants were first-year family medicine residents, and the same proportion were third-year residents, whereas 31.3% were second-year residents and 26.4% were fourth-year residents (Table 1).

| Parameter                      |                                      | Frequency (%) |
|--------------------------------|--------------------------------------|---------------|
| Age (in years)                 | 23-26 Years                          | 50 (30.7%)    |
|                                | 27-30 Years                          | 87 (53.4%)    |
|                                | More Than 31 years                   | 26 (16%)      |
| Gender                         | Female                               | 74 (45.4%)    |
|                                | Male                                 | 89 (54.6%)    |
| Nationality                    | Non-Saudi                            | 7 (4.3%)      |
|                                | Saudi                                | 156 (95.7%)   |
| Degree as a resident physician | First-year family medicine resident  | 34 (20.9%)    |
|                                | Second-year family medicine resident | 51 (31.3%)    |
|                                | Third-year family medicine resident  | 34 (20.9%)    |
|                                | Fourth-year family medicine resident | 43 (26.4%)    |

TABLE 1: Characters of participating residents (n=163).

Breaking bad news

The findings of the study revealed a significant proportion (41.1%) believed that both the patient and family should be informed about the diagnosis and prognosis in cases of advanced, progressive, incurable diseases. Regarding attitudes, a considerable number of residents agreed or strongly agreed that discussing the diagnosis and prognosis could lead to patient depression (45.4%,42.9%) and believed it held no privilege for patients (40.5%), and the majority recognized that grief reaction would occur, but the patient would eventually adjust (57.7%). Additionally, a significant proportion agreed that discussing the diagnosis would decrease the patient's anxiety related to uncertainty (44.8%) and that knowing when death is occurring is an essential factor for a good death (49.1%). Table 2 shows more details.

| Knowledge   | Frequency (%)               |            |            |                |
|---|-----------------------------|------------|------------|----------------|
| In accordance with your knowledge, in a patient with an advanced, progressive, incurable disease, with whom should the physician discuss the diagnosis and prognosis? | Both the patient and family | 67 (41.1%) |            |                |
|   | None                        | 4 (2.5%)   |            |                |
|   | The patient only            | 66 (40.5%) |            |                |
|   | The patient's family only   | 26 (16%)   |            |                |
| Attitudes   | Frequency (%)               |            |            |                |
|   | Strongly disagree           | Disagree   | Agree      | Strongly agree |
| It will make the patient depressed.   | 5 (3.1%)                    | 14 (8.6%)  | 74 (45.4%) | 70 (42.9%)     |
| It is of no privilege to the patient.   | 16 (9.8%)                   | 61 (37.4%) | 66 (40.5%) | 20 (12.3%)     |
| A grief reaction will happen, but the patient will adjust.  | 2 (1.2%)                    | 12 (7.4%)  | 94 (57.7%) | 55 (33.7%)     |
| It will decrease the patient's anxiety related uncertainty.   | 8 (4.9%)                    | 42 (25.8%) | 73 (44.8%) | 40 (24.5%)     |
| To know when death is occurring is a principal prerequisite for a good death.   | 7 (4.3%)                    | 42 (25.8%) | 80 (49.1%) | 34 (20.9%)     |
| The family (not the physician) should break the news to the patient.  | 37 (22.7%)                  | 48 (29.4%) | 41 (25.2%) | 37 (22.7%)     |

**TABLE 2: Assessment of knowledge and attitudes regarding breaking bad news.**

### Advance directives

The results indicated that a small portion of residents (12.3%) reported being well aware of advance directives (Table 3), while a significant proportion (45.4%) stated that they had never heard of advance directives. In terms of considering attempted suicide as an advance refusal of life-saving treatment, opinions were divided, with slightly more respondents (52.1%) believing it could be considered as such. When it came to transfusing blood in a patient with vascular shock and a low hemoglobin level, despite the patient's advance decline of blood products, a majority (60.1%) indicated they would still transfuse blood.

| Question  | Frequency (%)                     |               |
|---|-----------------------------------|---------------|
| Do you know the advance directives (living wills)?  | I am well aware of it             | 20<br>(12.3%) |
|   | I heard, but not well aware of it | 69<br>(42.3%) |
|   | No, I have never heard of it      | 74<br>(45.4%) |
| Can an attempted suicide (deliberate self-harm) be considered as an advance refusal of life-saving treatment?   | No                                | 78<br>(47.9%) |
|   | Yes                               | 85<br>(52.1%) |
| Will you transfuse blood in a patient in vascular shock as a result of active gastric bleeding and a hemoglobin of 4 g/dl, even if the patient has made an advance decline of receiving any blood products? | No                                | 65<br>(39.9%) |
|   | Yes                               | 98<br>(60.1%) |

**TABLE 3: Assessment of knowledge and attitudes regarding advance directives.**

### Withdrawal and withholding life-sustaining treatment

Table 4 explores the perspectives of Saudi family medicine residents on withdrawal and withholding life-sustaining treatment. Regarding a 28-year-old physician with metastatic carcinoma and respiratory failure, the majority (71.2%) would place her on a ventilator. In a scenario where a brain-dead physician is occupying a ventilator needed by a 28-year-old man who attempted deliberate self-harm, a majority (62%) would disconnect the physician from the ventilator to save the man's life. When asked about their comfort level, more residents (65.6%) expressed being more comfortable withholding life-sustaining therapy rather than withdrawing it.

| Question   | Frequency (%) |                |
|--|---------------|----------------|
| A 28-year-old physician with metastatic carcinoma has developed respiratory failure. She could live for many weeks if she is placed on a ventilator. Would you place her on a ventilator?  | No            | 47<br>(28.8%)  |
|  | Yes           | 116<br>(71.2%) |
| A 28-year-old physician who was ventilated after a road traffic accident has been confirmed to be brain dead. A 28-year-old man is in urgent need of a ventilator after deliberate self-harm (DSH) with an insecticide. He could be saved if placed on a ventilator. There are no vacant ventilators accessible. Would you disconnect the physician from the ventilator? | No            | 62<br>(38%)    |
|  | Yes           | 101<br>(62%)   |
| Do you feel more comfortable to withhold than to withdraw life-sustaining therapy?   | No            | 56<br>(34.4%)  |
|  | Yes           | 107<br>(65.6%) |

**TABLE 4: Assessment of knowledge and attitudes regarding withdrawal and withholding life-sustaining treatment.**

### Do not attempt cardiopulmonary resuscitation (DNACPR) decisions

Table 5 reveals that some respondents were well aware of DNACPR decisions (39.9%), and a substantial number had only heard of it without a strong understanding (46%). The majority believed that both the medical team and family should be involved in making DNACPR decisions (55.2%), but there was

uncertainty about withdrawing life-sustaining therapy once a DNACPR decision had been made. Many respondents would feel hesitant to make a DNACPR decision (72.4%), and a significant percentage had not participated in DNACPR decisions (68.7%).

| Question  | Frequency (%)                     |             |
|---|-----------------------------------|-------------|
| Do you know 'do-not-attempt cardiopulmonary resuscitation (DNACPR)' decisions?                            | I am well aware of it             | 65 (39.9%)  |
|   | I heard, but not well aware of it | 75 (46%)    |
|   | No, I have never heard of it      | 23 (14.1%)  |
| If you have heard of it or are well aware, who should take the DNACPR decision in an unconscious patient? | Both the medical team and family  | 90 (55.2%)  |
|   | Other                             | 4 (2.5%)    |
|   | The family only                   | 22 (13.5%)  |
|   | The medical team only             | 47 (28.8%)  |
|   | I do not know                     | 65 (39.9%)  |
| Is it appropriate to withdraw all life-sustaining therapy once a DNACPR decision has been made?           | No                                | 55 (33.7%)  |
|   | Yes                               | 43 (26.4%)  |
| Would you feel hesitant to make a DNACPR decision on a patient?   | No                                | 45 (27.6%)  |
|   | Yes                               | 118 (72.4%) |
| Have you been participated in the DNACPR decision?  | No                                | 112 (68.7%) |
|   | Yes                               | 51 (31.3%)  |

**TABLE 5: Assessment of knowledge and attitudes regarding DNACPR decisions.**

### The concept of a good death

The result shows most of the respondents believed that the caring physician should supervise the role in ensuring a good death (61.3%), followed by the family (23.3%). Opinions were divided on legalizing doctors aiding in dying, with 52.1% opposing and 47.9% supporting it for patients with incurable, progressive, and painful illnesses. Respondents identified several essential characteristics of a good death in Table 6.

| Question   | Frequency (%)  |                |
|--|--|----------------|
| Once 'dying' (end-of-life) was diagnosed, who should supervise the role in ensuring that the patient has a good death?   | A spiritual leader   | 20<br>(12.3%)  |
|  | Nursing staff  | 5<br>(3.1%)    |
|  | The caring physician   | 100<br>(61.3%) |
|  | The family   | 38<br>(23.3%)  |
| Should doctors aid-in-dying (including both 'physician-assisted suicide' and 'euthanasia') be legalized in Saudi Arabia for patients with incurable, progressive, and painful illness? | No   | 85<br>(52.1%)  |
|  | Yes  | 78<br>(47.9%)  |
| What would you regard as required characteristics of a good death?   | To be able to issue advance directives that ensure wishes are respected              | 62<br>(38%)    |
|  | To be able to leave when it is time to go and not to have life prolonged pointlessly | 52<br>(31.9%)  |
|  | To be able to retain control of what happens   | 63<br>(38.7%)  |
|  | To be afforded dignity and privacy   | 78<br>(47.9%)  |
|  | To have access to any spiritual or emotional support required                        | 77<br>(47.2%)  |
|  | To have access to hospice care in any location not only in hospital                  | 67<br>(41.1%)  |
|  | To have access to information and expertise of whatever kind is required             | 67<br>(41.1%)  |
|  | To have choice and control over where death occurs (at home or elsewhere)            | 82<br>(50.3%)  |
|  | To have control over pain and other symptom control                                  | 96<br>(58.9%)  |
|  | To have control over who is present and who shares the end                           | 65<br>(39.9%)  |
|  | To have lived a long life  | 44<br>(27%)    |
|  | To have lived a wholesome (virtuous) life  | 48<br>(29.4%)  |
|  | To have time to say goodbye and control over other aspects of timing                 | 74<br>(45.4%)  |
|  | To know when death is coming and to understand what can be expected                  | 72<br>(44.2%)  |

**TABLE 6: Assessment of knowledge and attitudes regarding the concept of a good death.**

## Discussion

The provision of palliative and end-of-life care to patients necessitates having excellent clinical evaluation, communication, interdisciplinary collaboration, and prescription skills. This care has lately been referred to as "a core competence" for all physicians. Palliative care education is being emphasized more and more in

medical schools and training programs across the world [12]. Death has historically been equated with medical failure, leading some people to believe that clinicians have nothing to give a dying patient's family [13]. Physicians must understand that the exact opposite is true. A "peaceful death" may be achieved for patients and their families by minimizing pain and suffering, assuaging concerns, and fostering good communication [14]. Ineffective communication may lead to subpar treatment, and patients and their families could experience unwarranted emotional or physical suffering. This study aimed to assess the knowledge and attitude of family physicians regarding end-of-life care in Taif, Saudi Arabia.

Our study included 163 participants of whom 54.6% were males, and 95.7% were Saudi. According to our study, the majority heard of DNACPR, but 46% needed to be better aware of it. Our sample showed varying responses in the case scenarios to assess their potential practice toward end-of-life care. However, it is worth noting that a study by Singer et al. reported that family medicine residents were aware of the need to ensure good communication between doctors and patients, relieve their suffering, and support patients and families [15]. Similarly, Song et al. in 2019 conducted a cross-sectional study to evaluate the knowledge and attitudes about end-of-life among health profession students in China. They found that they have positive attitudes toward end-of-life care, but they lack the knowledge and skills to treat terminal patients systematically [16]. On the contrary, similar studies conducted in Sri Lanka identified major knowledge and attitude deficiencies regarding end-of-life care. It highlighted the need for compulsory undergraduate and postgraduate medical curricula training, with supervised simulations and real-life encounters [6,17].

More than half of respondents (55.2%) agree that the patient's family and the medical team should be involved in the DNACPR decision. By contrast, 28.8% of respondents agreed that only the medical team should have this authority. The degree of residence was significantly associated with this. According to the literature, the vast majority of patients are interested in discussing end-of-life care with their doctor, and most think that doctors should bring up the subject. Since many patients will wait for their doctor to bring up the matter, doctors must bear responsibility for starting a timely conversation [18,19].

End-of-life conversations should include a wide range of important topics for the dying patient and family. Discussions that are just concerned with resuscitation miss significant physical and mental issues [20]. Nearing death, most patients struggle with comparable needs, wants, and concerns. Patients who are near death often suffer dread of agony, humiliation, abandonment, and the unknown [21]. Many of these worries may be reduced by honest and open conversations. Family bonds and the dying person's loneliness may be improved by including family members in these sessions [22]. Almost half of the participants (45.4%) were unaware of advance directives, and 52.1% said that attempting suicide may be seen as a denial of life-saving treatments in advance. The majority of participants (65.6%) felt more at ease delaying rather than stopping life-sustaining treatment. Following social or cultural norms unique to the population, the application of principles of medical ethics and good death should be adjusted. Normalizing end-of-life discussions by including end-of-life patient preferences in routine history could alleviate such debates' anxiety and increase competent end-of-life care.

As medical schools globally adapt to this paradigm shift, the goal is to produce a new generation of healthcare professionals who can diagnose and treat illnesses and provide comfort, emotional support, and clear communication to end-of-life patients and their families. This growing focus on palliative care education reflects a growing awareness that end-of-life care requires specific skills beyond medical therapies. It requires understanding ethical issues, cultural sensitivity, and the need to express patient choices and treatment goals openly. This highlights the importance of palliative and end-of-life care as a fundamental skill for physicians since it greatly impacts patients and their families during a vulnerable and important time. The medical community's focus on palliative care education indicates a desire to fulfill patients' changing needs, encourage compassionate care, and prepare physicians to handle end-of-life problems. This transformational approach improves treatment and makes medicine more humanistic and patient-centered.

According to the study, doctors are crucial in conveying bad news. Moreover, 41.1% of residents said patients and their families should be informed about diagnosis and prognosis. This award highlights a rising awareness among clinicians of the need to include patients and their families in understanding and managing advanced illnesses. This method emphasizes the whole person in the setting of their family in line with the growing trend toward patient-centered treatment. However, views regarding discussing diagnoses were complicated. The survey found that 45.4% of residents thought disclosing diagnoses might cause patient despair. Historical associations of death-related talks with undesirable consequences may explain this reluctance to discuss unpleasant issues. In addition, 42.9% of respondents were skeptical about the privilege of such knowledge for patients, suggesting a need for a more nuanced view of open communication's potential advantages.

On the bright side, the study examined residents' mourning emotions and their belief that patients will adjust. This compassion recognizes the emotional toll life-altering diagnoses place on patients and their families. It emphasizes doctors' growing role as sympathetic participants in patients' journeys, supporting and guiding them through adjustment and acceptance [23]. The study shows that sharing diagnoses reduces patients' worry about uncertainty. Open and honest communication is helpful in a medical setting where ambiguity may cause patients great suffering. This supports the hypothesis that well-managed diagnostic



talks reduce uncertainty-related anxiety and improve patient well-being.

The survey found good trends and areas for development in physicians' views on giving tough news. A large majority understands the significance of including the patient and family, yet reservations and skepticism may prevent open conversation. The study illuminates the complex dynamics of physician-patient relations in stressful medical conditions and emphasizes the need for continual education and training to improve clinicians' communication skills in giving tough news. Only 12.3% of people were aware of advance directives, whereas 45.4% had never heard of them. This awareness gap highlights a serious knowledge gap among clinicians, which might affect patient autonomy and decision-making, especially in complicated medical settings. Knowing and comprehending advance directives helps people voice their healthcare preferences, especially when they cannot.

This research highlights the knowledge gap by comparing it to current field investigations. According to the research of Alotaibi et al., advance directive awareness among healthcare workers was also low [24]. The aggregate findings of this study show a systemic issue that requires extensive educational initiatives to solve this major medical training deficit. We cannot underline how this information gap affects patient autonomy. Advance directives allow patients to express their wishes for medical procedures, end-of-life care, and other important healthcare decisions [25]. Only a tiny percentage of residents are aware of these directives; thus, patients may not have their beliefs and preferences respected and followed when they are most vulnerable.

The study also supports the research of Mohammed et al., which found that healthcare personnel are unaware of advance care planning, a global issue that requires immediate attention [26]. Given these common concerns, focused educational interventions are essential to tackle this widespread issue. Physicians should receive extensive advance directive training in medical training and continuing professional development to enable them to discuss patients' healthcare preferences with them. This study shows that medical professionals face systemic challenges with advanced directive awareness and expertise [27]. This has major consequences for patient autonomy and decision-making; thus, medical curricula and professional development programs must be proactive and combine comprehensive educational interventions. By addressing these gaps, the medical community can better provide patient-centered care and recognize patients' wishes even in difficult medical situations.

The study examined residents' DNACPR decisions and found a complicated environment. Notably, 39.9% of respondents understood DNACPR choices, whereas 46% had heard of it but did not comprehend it. This shows a need for more knowledge among many clinicians and a probable lack of comprehension among those familiar with the phrase. These data support Mohammed et al.'s findings that medical professionals' DNACPR awareness and comprehension vary globally. In this divided picture, 55.2% of respondents advocated for the medical team and the patient's family to collaborate on DNACPR choices. This collaborative approach recognizes the multidimensionality of end-of-life care and the need to merge medical knowledge and family values. This supports the ideals of patient-centered care and collective decision-making promoted by Mapes et al.'s research, highlighting the need to incorporate numerous stakeholders in such important choices [28].

Despite this collaborative nature, 72.4% of responders experienced reluctance and ambiguity about DNACPR decisions for patients. The intricacy and seriousness of DNACPR choices, which need a fine balance between life and patient preferences, may explain this reticence. According to studies by Abu et al., healthcare professionals hesitate while making end-of-life decisions, highlighting the emotional and ethical factors [29,30]. Addressing and understanding this reluctance is essential for developing targeted educational interventions and support structures to provide physicians with the skills and confidence to handle these difficult situations.

This study found various levels of awareness, collaborative inclinations, and physician hesitation while making DNACPR choices. These findings highlight the need for specific training interventions and support mechanisms to improve physicians' expertise and confidence in DNACPR judgments and contribute to end-of-life care decision-making. Addressing these issues can help doctors provide more compassionate and educated end-of-life care to patients and their families.

## Limitations

### *Sample Characteristics*

Most participants were Saudis, and the study concentrated on Taif family medicine residents. This may restrict the findings' applicability, especially across medical specializations and cultures. Future research might use a more varied and representative sample to improve external validity. Additionally, the study used self-reported data, which may have caused response bias. Participants may have given socially desired answers or misrepresented their knowledge, attitudes, and actions. Despite efforts to maintain confidentiality and anonymity, self-reporting has limits that should be considered when evaluating data.

### *Cross-Sectional Design*

The study's cross-sectional approach captures participants' viewpoints in a single period, making it difficult to demonstrate causality or track changes in attitudes and knowledge over time. A longitudinal study might reveal how physicians' end-of-life care attitudes change.

Single-Center Study

A single-center study in Taif, Saudi Arabia, may limit the generalizability of findings to a worldwide environment. Regional healthcare systems, cultural norms, and medical education institutions may affect results. Future research might use multicenter approaches to understand physicians' end-of-life care views better.

Limited Qualitative Insight

The study relied on quantitative approaches, which may only partially represent physicians' experiences and viewpoints. Qualitative elements such as interviews or focus group discussions help explain physicians' end-of-life care beliefs and decisions.

Social Desirability Bias

The delicate nature of end-of-life care talks may have led to participants responding in a manner they consider socially acceptable due to social desirability bias. This bias may alter reactions, especially on ethical and emotional subjects. Despite these limitations, this study sheds light on Taif, Saudi Arabia, family medicine residents' end-of-life care knowledge and attitudes. Future studies can address these constraints to better understand physicians' end-of-life care perspectives across locations and healthcare systems.

Conclusions

In conclusion, a mixed landscape of knowledge and attitudes among family physicians in Taif, Saudi Arabia, regarding end-of-life care. Positive aspects include recognition of the importance of transparent communication about advanced diseases. However, gaps emerge, notably in limited awareness of advance directives and complexities surrounding decisions such as transfusing blood and DNACPR, while participants show nuanced perspectives on withdrawal and withholding life-sustaining treatment, discomfort, and uncertainty in DNACPR decisions highlight areas for improvement. The study emphasizes the need for targeted education to address these gaps, ensuring a more informed and consistent approach to end-of-life care decisions among family physicians in Taif City.

Appendices

Questionnaire

Family Medicine Residents' Knowledge and Attitudes About End-of-life Care in Taif City, Saudi Arabia. Dear Doctors. Please fill out this questionnaire only if you are currently working as a Family medicine Resident). Please ignore this if you have already filled out our online Questionnaire. The whole questionnaire takes less than 10 minutes to complete. The questions relate to your experience and judgment. Please do not discuss the questions. You may not have experienced some of the scenarios described in the questionnaire. In such situations, indicate what you would do if faced with such a situation. Please note that participation in this survey is voluntary, and it is a personal consent to participate in the research, knowing that the data will be confidential and does not include the name, and will be dealt with only by researchers. Your contribution to this study is greatly appreciated. Thank you.

Do you agree to participate in this survey?

Yes

No

Background information

Age in Years

-

Gender

Male

Female

What is your Nationality?

Saudi

Non-Saudi

first-year family medicine resident

second-year family medicine resident

Current Year of Residency?

third-year family medicine  
residentfourth-year family medicine  
resident

## Assessment of Knowledge and Attitudes about End-of-life Care

End-of-life is defined as when the patient is likely to die within the next 12 months. This includes patients whose death is imminent (within a few hours or days) and patients with advanced, progressive, incurable diseases. Following are questions related to end-of-life issues.

## On Breaking Bad News

1. According to your knowledge, in a patient with advanced, progressive, incurable disease, with whom should the doctor discuss the diagnosis and prognosis? (Select one response only)

- a. The patient only
- b. The patient's immediate family only
- c. Both the patient and family
- d. None

2. What are your attitudes on telling the patient regarding a diagnosis of terminal disease and its prognosis?

(Reveal your opinion of each statement as Strongly agree; Agree; Disagree, or Strongly disagree)

a. It will make the patient depressed

- Strongly agree
- Agree
- Disagree
- Strongly disagree
- Strongly agree

b. Is of no benefit to the patient

- Agree
- Disagree
- Strongly disagree
- Strongly agree

c. A grief reaction will occur, but the patient will adjust

- Agree
- Disagree
- Strongly disagree
- Strongly agree

d. It will reduce the patient's anxiety associated with uncertainty

- Agree
- Disagree
- Strongly disagree
- Strongly agree

e. To know when death is coming is an essential prerequisite for a good death

- Agree
- Disagree
- Strongly disagree
- Strongly agree

f. The family (not the doctor) should break the news to the patient

- Agree
- Disagree
- Strongly disagree

## On Advance Directives

- a. No, I have never heard of it

|   |   |
|---|---|
| 1. Are you aware of advance directives (living wills)? (Select one response only)   | <input type="radio"/> b. I have heard, but not well aware of it<br><input type="radio"/> c. I am well aware of it   |
| 2. Can an attempted suicide (deliberate self-harm) be considered as an advance refusal of life-saving treatment?  | <input type="radio"/> Yes<br><input type="radio"/> No   |
| 3. Would you transfuse blood in a patient in vascular shock due to active gastric bleeding and a hemoglobin of 4 g/dl, even if the patient has made an advance refusal of receiving any blood products?   | <input type="radio"/> Yes<br><input type="radio"/> No   |
| On withdrawal and withholding life-sustaining treatment   |   |
| 1. A 28-year-old doctor with metastatic carcinoma has developed respiratory failure. She could live for several weeks if she is placed on a ventilator. Would you place her on a ventilator?  | <input type="radio"/> Yes<br><input type="radio"/> No   |
| 2. A 28-year-old doctor who was ventilated following a road traffic accident has been confirmed to be brain dead. A 28-year-old man is in urgent need for a ventilator following deliberate self-harm with an insecticide. He could be saved if placed on a ventilator. There are no vacant ventilators available. Would you disconnect the doctor from the ventilator? | <input type="radio"/> Yes<br><input type="radio"/> No   |
| 3. Do you feel more comfortable to withhold than to withdraw from life-sustaining therapy?  | <input type="radio"/> Yes<br><input type="radio"/> No   |
| On 'Do not attempt cardiopulmonary resuscitation (DNACPR)' decisions  |   |
| 1. Are you aware of 'do not attempt cardiopulmonary resuscitation (DNACPR)' decisions? (Select one response only)   | <input type="radio"/> a. No, I have never heard of it<br><input type="radio"/> b. I have heard, but not well aware of it<br><input type="radio"/> c. I am well aware of it    |
| 2. Who should make the DNACPR decision in an unconscious patient? (select one response only)  | <input type="radio"/> a. The medical team only<br><input type="radio"/> b. The family only<br><input type="radio"/> c. Both the medical team and the family                   |
| 3. Is it appropriate to withdraw all life-sustaining therapy once a DNACPR decision has been made?  | <input type="radio"/> Yes<br><input type="radio"/> No<br><input type="radio"/> I don't know   |
| 4. Would you feel reluctant to make a DNACPR decision on a patient?   | <input type="radio"/> Yes<br><input type="radio"/> No   |
| 5. Have you been involved in DNACPR decision?   | <input type="radio"/> Yes<br><input type="radio"/> No   |
| On the concept of a 'Good Death'  |   |
| 1. Once 'dying' (end-of-life) has been diagnosed, who should take the lead role in ensuring that the patient has a good death? (Select one response only)   | <input type="radio"/> a. The caring physician<br><input type="radio"/> b. The family<br><input type="radio"/> c. A spiritual leader<br><input type="radio"/> d. Nursing staff |
| 2. Should doctors aid-in-dying (including both 'physician-assisted suicide' and 'euthanasia') be legalized in Saudi Arabia for patients with incurable, progressive, and painful illnesses?   | <input type="radio"/> Yes<br><input type="radio"/> No<br><input type="radio"/> - To know when death is coming and to understand what can be expected                          |

|  |   |
|--|---|
| 3. What would you regard as a required characteristic of a good death? (select all that apply) | - To be able to retain control of what happens  |
|  | - To be afforded dignity and privacy  |
|  | - To have control over pain and other symptom control                                   |
|  | -To have choice and control over where death occurs (at home or elsewhere)              |
|  | - To have access to information and expertise of whatever kind is necessary             |
|  | - To have access to any spiritual or emotional support required                         |
|  | - To have access to hospice care in any location, not only in hospital                  |
|  | - To have control over who is present and who shares the end                            |
|  | - To have time to say goodbye and control over other aspects of timing                  |
|  | - To be able to leave when it is time to go, and not to have life prolonged pointlessly |
|  | - To have lived a long life   |
|  | - To have lived a wholesome (virtuous) life   |
|  | - To be able to issue advance directives which ensure wishes are respected              |
| TABLE 7: Questionnaire   |   |

Additional Information

Author Contributions

All authors have reviewed the final version to be published and agreed to be accountable for all aspects of the work.

**Concept and design:** Ghadah H. Alswat, Sarah A. Alosaimi, Hatun A. Althagafi, Waad W. Alalawi, Arwa Turkstani, Turki A. Alzahrani, Abdulrhman N. Alghamdi

**Acquisition, analysis, or interpretation of data:** Ghadah H. Alswat, Sarah A. Alosaimi, Hatun A. Althagafi, Waad W. Alalawi, Arwa Turkstani, Turki A. Alzahrani, Abdulrhman N. Alghamdi

**Drafting of the manuscript:** Ghadah H. Alswat, Sarah A. Alosaimi, Hatun A. Althagafi, Waad W. Alalawi, Arwa Turkstani, Turki A. Alzahrani, Abdulrhman N. Alghamdi

**Critical review of the manuscript for important intellectual content:** Ghadah H. Alswat, Sarah A. Alosaimi, Hatun A. Althagafi, Waad W. Alalawi, Arwa Turkstani, Turki A. Alzahrani, Abdulrhman N. Alghamdi

**Supervision:** Turki A. Alzahrani, Abdulrhman N. Alghamdi

## Disclosures

**Human subjects:** Consent was obtained or waived by all participants in this study. The Ethics Committee at Taif University issued approval 43-111. The ethics committee at Taif University recently reviewed your request to obtain the committee's approval of the research proposal shown below. Proposal Title: Saudi Family Medicine Residents' Knowledge and Attitudes about End-of-life Care in Taif City, Saudi Arabia. The committee is accredited by the National Committee for Bioethics with No. (HAO-02-T-105) and the committee considered that the proposal fulfills the requirements of Taif University and accordingly ethical approval was granted. **Animal subjects:** All authors have confirmed that this study did not involve animal subjects or tissue. **Conflicts of interest:** In compliance with the ICMJE uniform disclosure form, all authors declare the following: **Payment/services info:** All authors have declared that no financial support was received from any organization for the submitted work. **Financial relationships:** All authors have declared that they have no financial relationships at present or within the previous three years with any organizations that might have an interest in the submitted work. **Other relationships:** All authors have declared that there are no other relationships or activities that could appear to have influenced the submitted work.

## References

- Im J, Mak S, Upshur R, Steinberg L, Kuluski K: "Whatever happens, happens" challenges of end-of-life communication from the perspective of older adults and family caregivers: a qualitative study. *BMC Palliat Care*. 2019, 18:113. [10.1186/s12904-019-0493-7](https://doi.org/10.1186/s12904-019-0493-7)
- Teno JM, Clarridge BR, Casey V, Welch LC, Wetle T, Shield R, Mor V: Family perspectives on end-of-life care at the last place of care. *JAMA*. 2004, 291:88-93. [10.1001/jama.291.1.88](https://doi.org/10.1001/jama.291.1.88)
- Surakka LK, Peake MM, Kiljunen MM, Mäntyselkä P, Lehto JT: Preplanned participation of paramedics in end-of-life care at home: a retrospective cohort study. *Palliat Med*. 2021, 35:584-91. [10.1177/0269216320981713](https://doi.org/10.1177/0269216320981713)
- Walling DE: The changing sediment loads of the world's rivers. *Ann Wars Univ Life Sci*. 2008, 39:3-20. [10.2478/v10060-008-0001-x](https://doi.org/10.2478/v10060-008-0001-x)
- von Gunten CF, Ferris FD, Emanuel LL: The patient-physician relationship. Ensuring competency in end-of-life care: communication and relational skills. *JAMA*. 2000, 284:3051-7. [10.1001/jama.284.23.3051](https://doi.org/10.1001/jama.284.23.3051)
- Chang T, Darshani S, Manikavasagam P, Arambepola C: Knowledge and attitudes about end-of-life decisions, good death and principles of medical ethics among doctors in tertiary care hospitals in Sri Lanka: a cross-sectional study. *BMC Med Ethics*. 2021, 22:66. [10.1186/s12910-021-00631-5](https://doi.org/10.1186/s12910-021-00631-5)
- Mahmoud NA: Palliative Care and the Concept of Suffering: Islamic Ethical Perspectives (Doctoral dissertation). Hamad Bin Khalifa University, Ar Rayyan, Qatar; 2018.
- Viftrup DT, Prinds C, Nissen RD, Steinfeldt VØ, Søndergaard J, Hvidt NC: Older adults' experience of meaning at the end of life in two Danish hospices: a qualitative interview study. *Front Psychol*. 2021, 12:700285. [10.3389/fpsyg.2021.700285](https://doi.org/10.3389/fpsyg.2021.700285)
- Quiambao AY, Pio-Gulapan FE: Competency in end-of-life care among ENT-HNS consultants and residents: a multi-center study. *PJOHNS*. 2008, 23:5-13. [10.32412/pjohns.v23i2.725](https://doi.org/10.32412/pjohns.v23i2.725)
- Carver AC, Vickrey BG, Bernat JL, Keran C, Ringel SP, Foley KM: End-of-life care: a survey of US neurologists' attitudes, behavior, and knowledge. *Neurology*. 1999, 53:284-93. [10.1212/wnl.53.2.284](https://doi.org/10.1212/wnl.53.2.284)
- Tan A, Manca D: Finding common ground to achieve a "good death": family physicians working with substitute decision-makers of dying patients. A qualitative grounded theory study. *BMC Fam Pract*. 2013, 14:14. [10.1186/1471-2296-14-14](https://doi.org/10.1186/1471-2296-14-14)
- Grande G, Stajduhar K, Aoun S, et al.: Supporting lay carers in end of life care: current gaps and future priorities. *Palliat Med*. 2009, 23:339-44. [10.1177/0269216309104875](https://doi.org/10.1177/0269216309104875)
- Newell AA: Learning to care even when there is no cure: reflections from a student physician on healing those near death. *J Pers Interpers Loss*. 1997, 2:367-78. [10.1080/15325029708415514](https://doi.org/10.1080/15325029708415514)
- Dugdale LS: Dying in the Twenty-First Century: Toward a New Ethical Framework for the Art of Dying Well. MIT Press, Cambridge, MA; 2015.
- Singer Y, Carmel S: Teaching end-of-life care to family medicine residents--what do they learn? *Med Teach*. 2009, 31:e47-50. [10.1080/01421590802331420](https://doi.org/10.1080/01421590802331420)
- Song L, Cai T, Wu F, Cui J, Zhou L, Yuan C: Attitudes toward and perceptions of educational needs for end-of-life care among health professions students: a cross-sectional study in China. *J Pain Symptom Manage*. 2021, 62:1229-38. [10.1016/j.jpainsymman.2021.05.008](https://doi.org/10.1016/j.jpainsymman.2021.05.008)
- Pinto N, Bhola P, Chandra PS: "End-of-life care is more than wound care": health-care providers' perceptions of psychological and interpersonal needs of patients with terminal cancer. *Indian J Palliat Care*. 2019, 25:428-35. [10.4103/IJPC.IJPC\\_26\\_19](https://doi.org/10.4103/IJPC.IJPC_26_19)
- Smeenk F, Schrijver L, Bavel H, van de Laar EF: Talking about end-of-life care in a timely manner. *Breathe*. 2017, 13:e95-102.
- Mattes MD, Tung K, Baum R, Parikh K, Ashamalla H: Understanding the views of those who care for patients with cancer on advance care planning and end-of-life care. *Am J Hosp Palliat Care*. 2015, 32:802-9. [10.1177/1049909114540035](https://doi.org/10.1177/1049909114540035)
- Eftimova B, Lazarova B: Discussing end-of-life issues with terminally ill cancer patients and their families: our results. *Crit Care*. 2011, 15:P519. [10.1186/cc9939](https://doi.org/10.1186/cc9939)
- Finucane TE: Care of patients nearing death: another view. *J Am Geriatr Soc*. 2002, 50:551-3.
- Hickman SE, Tilden VP, Tolle SW: Family perceptions of worry, symptoms, and suffering in the dying. *J Palliat Care*. 2004, 20:20-7.
- Morishita M, Iida J, Nishigori H: Doctors' experience of becoming patients and its influence on their medical practice: a literature review. *Explore (NY)*. 2020, 16:145-51. [10.1016/j.explore.2019.10.007](https://doi.org/10.1016/j.explore.2019.10.007)
- Alotaibi WA, Alosaimi AM, Alsulaimani NH: Family medicine residents' knowledge and attitudes towards

- biostatistics, Taif, Kingdom of Saudi Arabia. *J Family Med Prim Care*. 2022, 11:7015-23. [10.4103/jfmpc.jfmpc\\_1146\\_22](https://doi.org/10.4103/jfmpc.jfmpc_1146_22)
25. Akdeniz M, Yardımcı B, Kavukcu E: Ethical considerations at the end-of-life care. *SAGE Open Med*. 2021, 9:[10.1177/20503121211000918](https://doi.org/10.1177/20503121211000918)
  26. Mohammed EA, Alotaibi HA, Alnemari JF, et al.: Assessment of knowledge, attitude, and practice towards tuberculosis among Taif University students. *Healthcare (Basel)*. 2023, 11:2807. [10.3390/healthcare11202807](https://doi.org/10.3390/healthcare11202807)
  27. Blackwood DH, Walker D, Mythen MG, Taylor RM, Vindrola-Padros C: Barriers to advance care planning with patients as perceived by nurses and other healthcare professionals: a systematic review. *J Clin Nurs*. 2019, 28:4276-97. [10.1111/jocn.15049](https://doi.org/10.1111/jocn.15049)
  28. Mapes MV, DePergola PA, McGee WT: Patient-centered care and autonomy: shared decision-making in practice and a suggestion for practical application in the critically ill. *J Intensive Care Med*. 2020, 35:1352-5.
  29. Abu Hatoum WB, Sperling D: Views, attitudes, and reported practices of nephrology nurses regarding shared decision-making in end-of-life care. *Nurs Ethics*. 2023, 0:0. [10.1177/09697330231200565](https://doi.org/10.1177/09697330231200565)
  30. Thomas HR, Deckx L, Sieben NA, Foster MM, Mitchell GK: General practitioners' considerations when deciding whether to initiate end-of-life conversations: a qualitative study. *Fam Pract*. 2020, 37:554-60. [10.1093/fampra/cmz088](https://doi.org/10.1093/fampra/cmz088)