CODEN [USA]: IAJPBB ISSN : 2349-7750

INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES

SJIF Impact Factor: 7.187

https://doi.org/10.5281/zenodo.17752734

Available online at: http://www.iajps.com *Review Article*

PREVALENCE OF PALLIATIVE SEDATION AMONG PALLIATIVE CARE PHYSICIANS IN SAUDI ARABIA

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Abstract:

Background: *Palliative sedation (PS) is an important intervention which is used to relieve refractory symptoms in patients who are terminally ill. Despite its clinical relevance, there is a limited data on its prevalence and practice patterns among palliative care physicians in Saudi Arabia. This study aims to assess the prevalence, indications, attitudes, and challenges associated with PS among certified palliative care consultants in the Kingdom.*

Methods: *A descriptive cross-sectional study was conducted among certified palliative care consultants who were practicing across Saudi Arabia. Data were collected using a self-administered online questionnaire and analyzed using SPSS version 23. Descriptive statistics summarized demographic and practice characteristics, while chi-square and Fisher's exact tests examined associations between consultant factors and PS use.*

Results: *A total of 37 palliative care consultants participated. Most were aged 35–44 years (59.5%) and fellowship-trained (94.6%). The prevalence of palliative sedation use was 64.9% (n=24). Among those who used PS, the most common indications were dyspnea (58.3%), delirium (54.2%), and pain (41.7%). Midazolam was used by all consultants practicing PS (100%). In the past 12 months, 58.3% had administered PS, with most using it 1–3 times. Major barriers included family resistance (83.8%) and lack of guidelines (51.4%). No demographic or professional factors were significantly associated with PS use ($p>0.05$).*

Conclusion: *PS is widely utilized and accepted without any ethical issue among palliative care consultants in Saudi Arabia. However, challenges related to family dynamics, variable practical experience, and lack of the standardized protocols highlight the need for the national guidelines, enhanced training, and improved communication strategies to support consistent and ethical PS practice across clinical settings.*

Keywords: *Palliative sedation; Palliative care; End-of-life care; Refractory symptoms; Saudi Arabia*

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Please cite this article in press ***Angham Marzouk Ghazna*** *et al.,* ***Prevalence Of Palliative Sedation Among Palliative Care Physicians In Saudi Arabia****, Indo Am. J. P. Sci, 2025; 12(11).*

INTRODUCTION:

Palliative sedation involves careful administration of sedative medications to reduce or eliminate a patient's awareness, alleviating severe, uncontrollable suffering in a manner that is ethically acceptable and aligned with the values and consent of the patient, their family, and healthcare providers while neither extending nor hastening the natural dying process [1,2].

Delirium and dyspnoea are the most common refractory physical symptoms managed with palliative sedation. However, it may also be considered for profound suffering or severe psychological distress, which poses a particularly complex and sensitive challenge in patient care [3]. Although palliative sedation is relatively accepted, there remains ongoing ethical debate and controversy surrounding its use [4].

The practice of palliative sedation is totally different from euthanasia in its intent, procedures, and outcome. The most widely used drugs are midazolam and haloperidol for refractory delirium, but chlorpromazine and other neuroleptic agents are also considered effective [3].

A systematic review published in 2012 on palliative sedation in terminally ill cancer patients over a 30-year period found that 34.4% of patients received palliative sedation. The study concluded that when appropriately used, palliative sedation does not negatively impact survival in terminal cancer patients [5].

Several studies have assessed the prevalence of palliative sedation across different healthcare settings. A study conducted in Spain in specialized palliative care reported a prevalence rate of 16.7%[6]. Similarly, an observational study in São Paulo, Brazil, found that while 68% of physicians had used palliative sedation at some point in their careers, only 48% had used it in the past year [7].

In Saudi Arabia, end-of-life decision-making is often shaped by Islamic bioethics, where interventions that may alter the dying process require religious and ethical justification. While Islamic scholars and medical professionals recognize the permissibility of PS under specific conditions, concerns about its misuse or misinterpretation as euthanasia persist [8].
The country has made significant advancements in palliative care services, marked by an increasing number of palliative care units and home care services [9]. However, to our knowledge, there is limited information regarding the prevalence and current practice patterns of PS among physicians in Saudi Arabia. Understanding how PS is practiced, including its indications, frequency, and associated challenges, is crucial for developing standardized guidelines and improving patient care.

Aim:

This study aims to assess the prevalence and patterns of PS use among certified palliative care consultants in Saudi Arabia. By evaluating factors influencing PS decisions, ethical concerns, and barriers to implementation, the study will contribute valuable insights into the current landscape of PS practice. The findings will help inform policies, enhance clinical protocols, and guide future research to optimize palliative care services in the country.

METHODOLOGY:

1. **Study Design and setting:**
   A descriptive cross-sectional study was conducted, recruiting participants from different regions of Saudi Arabia.
2. **Study Population:**
   The study population consisted of all certified palliative care consultants working in Saudi Arabia.
3. **Inclusion Criteria:**
   Eligible participants were certified palliative care consultants currently practicing in Saudi Arabia with at least one year of clinical experience and provide informed consent.
4. **Exclusion Criteria:**
   Responses that were incomplete or duplicated were excluded from the study.
5. **Study sample:**
   A structured questionnaire was sent to palliative care consultants working in Saudi Arabia.
6. **Sampling Technique:**
   A convenience sampling method was used to recruit participants.
7. **Variables:**

- Dependent Variables: (Frequency of palliative sedation use, Reasons for using or not using palliative sedation, Comfort level with palliative sedation practice, Presence of training in palliative care.
- Independent Variables: Demographic data (age, sex, years of professional experience, specialty).
- Workplace factors: availability of palliative sedation practices, influence of family members).

8. **Data Collection Tool/Technique:**
   A self-administered online questionnaire was the primary data collection tool. It was designed using Google Forms and distributed to all consultants working in palliative care through social media

platforms and professional networks to maximize participation. The structured questionnaire was developed based on recent literature [7,10–12]. and consists of two sections.

The first section, Sociodemographic Information, includes age, region, years of experience, certification, and palliative care training to provide background on participants.

The second section, Palliative Sedation Practices, examines experience, frequency of use, indications, decision-making factors, ethical concerns, and barriers to implementation.

9. Data Entry and Analysis:

The collected data were analyzed using the Statistical Package for the Social Sciences (SPSS), version 23 (SPSS, Inc, Chicago, IL). Normality of the data was tested using Shapiro-Wilk test. Descriptive statistics (frequencies, percentages, means, and standard deviations or medians and interquartile range) was used to summarize the data. Inferential statistical tests, including chi-square test was used to determine the association between categorical variables whereas Fisher's exact test was used when the expected cell count was less than 5. A p-value of < 0.05 is considered statistically significant and effect sizes were also reported. The 95% confidence intervals of effect sizes were calculated using bootstrapping to improve accuracy.

10. Ethical considerations:

This study has been approved by the Research Ethics Committee at Prince Sultan Military Medical City (PSMMC) [IRB approved number: E-2623]. Prior to participation, all respondents will provide informed consent and may withdraw at any time without consequences. To ensure privacy and confidentiality, all data will be anonymized and securely stored. Participation is entirely voluntary, and participants may withdraw at any time without any obligations or consequences.

RESULTS:

A total of 37 certified palliative care consultants who met the inclusion criteria were included in the current study, corresponding to an effective response rate of 90.2% (37/41). Males outnumbered females (54.1% vs. 45.9%) with male to female ratio of 1.18:1. Median age of the participants was 38 years (IQR: 35 – 43.5) with majority of them in the age group of 35 to 44 years (n = 22, 59.5%). Most of the participating consultants currently practicing in central region (n = 13, 35.1%) followed by western region (n = 12, 32.4%). Concerning cities, most of them were practicing in Riyadh (n = 11, 29.7%) followed by Jeddah and Makkah (n = 4, 10.8% each). More details are summarized in Table 1.

Table 1: Demographic characteristics of the study respondents (n = 37)

Variable	Categories	N (%)
Gender	Male	20 (54.1)
	Female	17 (45.9)
Age (in years)	< 35	6 (16.2)
	35 – 44	22 (59.5)
	≥ 45	9 (24.3)
Region of practice:	Eastern region	5 (13.5)
	Western region	12 (32.4)
	Central region	13 (35.1)
	Northern region	3 (8.1)
	Southern region	4 (10.8)
City of practice	Alkubar	1 (2.7)
	Taif	2 (5.4)
	Dammam	3 (8.1)
	Hail	1 (2.7)
	Jazan	3 (8.1)
	Jeddah	4 (10.8)
	Khamis mushit	1 (2.7)
	Madinah	3 (8.1)
	Makkah	4 (10.8)
	Qassim	2 (5.4)
	Riyadh	11 (29.7)
	Tabuk	1 (2.7)
	Not mentioned	1 (2.7)

N: number, %: percentage.

Regarding the training and professional experience of palliative sedation, the highest level of training among most of the participants was fellowship certification (n = 35, 94.6%). The median number of palliative care practice was 5 years (IQR: 3- 8.5) with most of the participants had 3 to 5 years of practice (n = 18, 48.6%) or more than 5 years (n = 13, 35.1%). The majority of the participants had wide practical experience with patients receiving palliative care and nearly one-third of them (n = 12, 32.4%) had limited practical experience (Table 2).

Table 2: Training and professional experience regarding palliative sedation

Variable	Categories	N (%)
Highest level of palliative care training	Fellowship certification	35 (94.6)
	Short courses/workshops	1 (2.7)
	Board certification	1 (2.7)
Years of palliative care practice	1 – 2	6 (16.2)
	3 – 5	18 (48.6)
	> 5	13 (35.1)
Practical experience with patients receiving palliative care	Limited (only in a hospital setting)	12 (32.4)
	Moderate (in hospital and limited home care)	10 (27)
	Wide (in hospital, hospice, and home-based care)	15 (40.5)

Prevalence of palliative sedation use among certified palliative care consultants was found to be 64.9% (n = 24), while 13 (35.1%) had never used it as a therapeutic alternative (Figure 1).

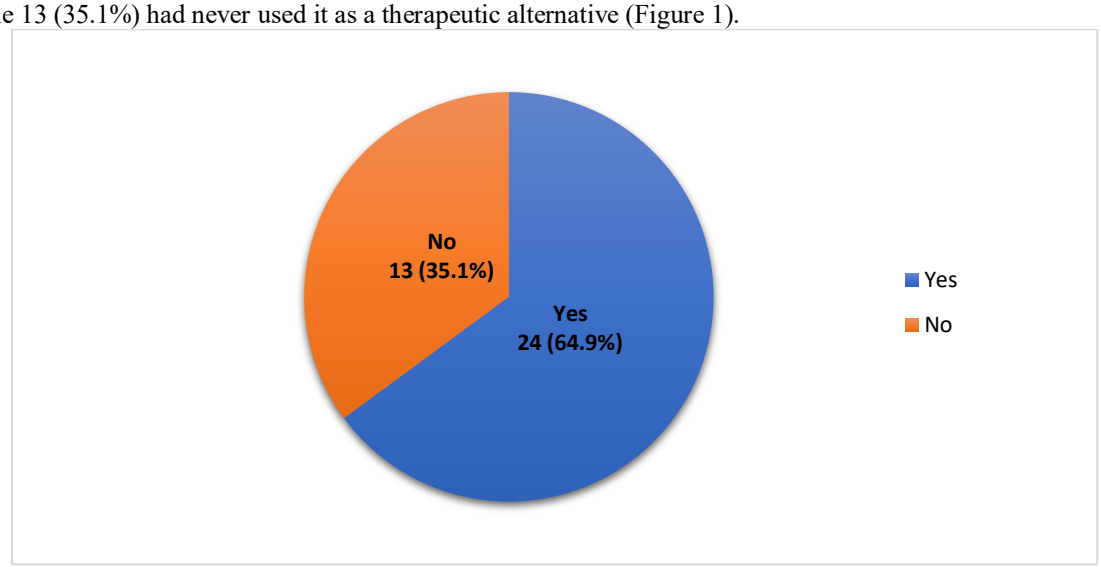

Figure 1: Prevalence of palliative sedation use among certified palliative care consultants in Saudi Arabia

Regarding the knowledge, attitudes and practices toward palliative sedation, the results indicated that most of the participants (n = 22, 59.5%) reported having a well-established practice of palliative sedation in their workplace and the majority (n = 30, 81.1%) expressed no concerns regarding the legal or religious permissibility in Saudi Arabia. Palliative sedation was supported as a therapeutic alternative in clinical practice by 29 (78.4%) of the participants and it was used by 24 (64.9%) while 13 (35.1%) reported never using it. Among those who never used palliative sedation (n = 13), the most frequently reported reason was lack of eligible patients (n = 11, 84.6%) followed by lack of familiarity with the procedure (n = 5, 38.5%). Among participants who had used palliative sedation (n = 24), it was mostly used for dyspnea (n = 14, 58.3%) followed by delirium (n = 13, 54.2%) and pain (n = 10, 41.7%) and the most frequently used drug was Midazolam (n = 24, 100%). additionally, out of participants who had used palliative sedation (n = 24), the majority had either limited or moderate practical experience (n = 10, 41.7% each) and 14 (58.3%) had practiced palliative sedation within the last 12 months. Of those who practiced palliative sedation in the past year (n = 14), 10 (71.4%) had practiced it 1 to 3 times and 8 (57.1%) reported being very comfortable with the overall process of administering palliative sedation, including ethical decision-making and communication with families. Furthermore, out of participants with prior experience in palliative sedation (n = 24), the vast

majority of them (n = 23, 95.8%) always consult the family prior to initiating palliative sedation and 17 (70.8%) believed that the decision to establish palliative sedation can be influenced by family members. Moreover, the majority of the participants believed that palliative sedation does not accelerate death (n = 30, 81.1%) and it is not equivalent to euthanasia (n = 35, 94.6%). In addition, 31 (83.8%) of the participants reported that they would not use or have not used palliative sedation in patients with psycho-existential suffering (Table 3).

Table 3: Knowledge, attitudes and practices toward Palliative Sedation

Variable	Categories	N (%)
Is palliative sedation a well-established practice in your workplace?	Yes	22 (59.5)
	No	15 (40.5)
Do you have any concerns regarding the legal or religious permissibility of palliative sedation in Saudi Arabia?	Yes	1 (2.7)
	No	30 (81.1)
	Unsure	6 (16.2)
Are you in favor of palliative sedation as a therapeutic alternative in clinical practice?	Yes	29 (78.4)
	No	8 (21.6)
Have you ever used palliative sedation as a therapeutic alternative?	Yes (Proceed to Q14)	24 (64.9)
	No (Proceed to Q13) then 22	13 (35.1)
Why have you not used palliative sedation? (n = 13)	Lack of eligible patients	11 (84.6)
	Not familiar with the procedure	5 (38.5)
	Believe it offends ethical principles	1 (7.7)
For which indications have you used palliative sedation? (n = 24)	Delirium	13 (54.2)
	Dyspnea	14 (58.3)
	Pain	10 (41.7)
	Existential suffering*	2 (8.3)
	Psychological distress	2 (8.3)
	Seizures	3 (12.5)
What drugs are commonly used for Palliative Sedation in your institution? (n = 24)	Midazolam	24 (100)
How would you describe your practical experience with palliative sedation? (n = 24)	Limited practical experience	10 (41.7)
	Moderate practical experience	10 (41.7)
	Wide practical experience	4 (16.7)
Have you practiced palliative sedation in the last 12 months? (n = 24)	Yes (Proceed to Q18)	14 (58.3)
	No (Proceed to Q20)	10 (41.7)
How many times have you practiced palliative sedation in the last 12 months? (n = 14)	1 - 3 times	10 (71.4)
	4 - 6 times	3 (21.4)
	7 - 9 times	1 (7.1)
How comfortable are you with the overall process of administering palliative sedation, including ethical decision-making and communication with families? (n = 14)	Very comfortable	8 (57.1)
	Fairly comfortable	3 (21.4)
	Somewhat comfortable	3 (21.4)
Do you consult the family prior to initiating palliative sedation? (n = 24)	Always	23 (95.8)
	Most of the time	1 (4.2)
Do you believe family members influence the decision to establish palliative sedation in healthcare settings? (n = 24)	Yes	17 (70.8)
	No	7 (29.2)
Do you believe palliative sedation accelerates the end of life of patients progressing to death?	Yes	3 (8.1)
	No	30 (81.1)
	Unsure	4 (10.8)
Do you believe palliative sedation is equivalent to euthanasia?	No	35 (94.6)
	Unsure	2 (5.4)
Would you use/have you used palliative sedation in patients with psycho-existential suffering**?	Yes	6 (16.2)
	No	31 (83.8)

**Existential suffering: hopelessness, loss of meaning, and death-related distress, ** psycho-existential suffering: hopelessness, dependence and lack of self-care ability, fear, death anxiety and panic, desire to control the moment of death, isolation and lack of social.*

Concerning the challenges to using palliative sedation, the most commonly reported barrier was family resistance (n = 31, 83.8%) followed by lack of training or guidelines (n = 19, 51.4%) and institutional policies against sedation. A lower proportion of participants reported fear of legal consequences (n = 9, 24.3%) and ethical or religious concerns (n = 4, 10.8%) as barriers (Figure 2).

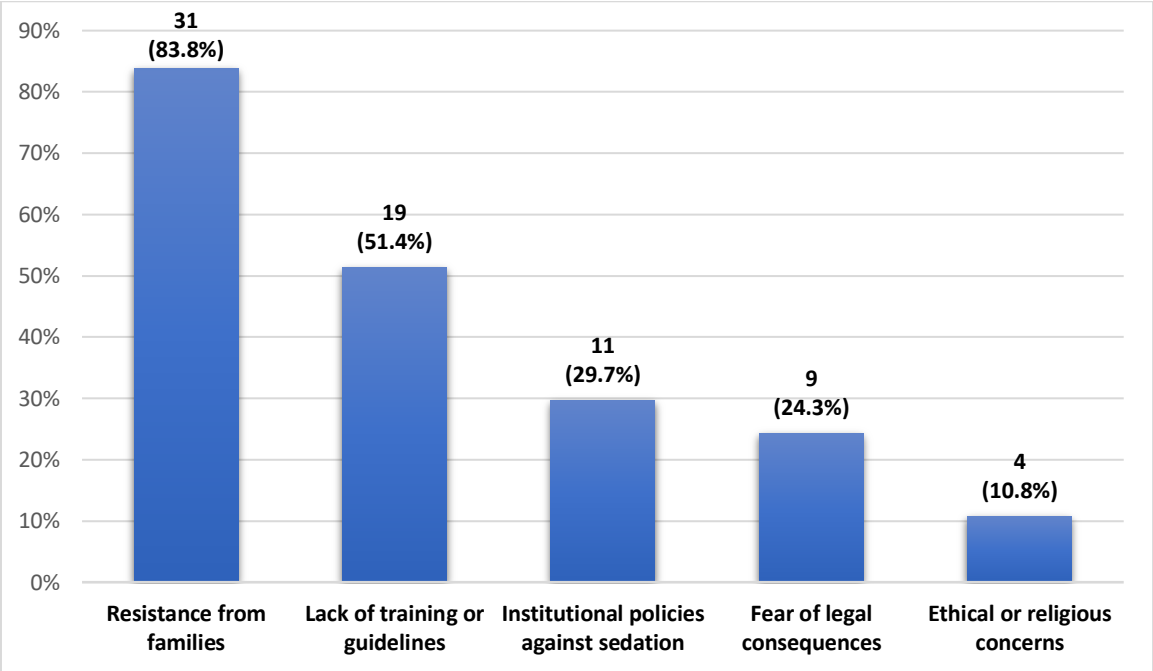

Figure 2: Perceived Challenges to Using Palliative Sedation among study participants

Regarding the factors associated with palliative sedation use, the results revealed that its use tended to increase with older age, longer years of palliative care practice, greater practical experience and the presence of an established palliative sedation practice at workplace, but none of these associations reached the statistically significant (P > 0.05). Also other factors including gender, region, highest level of palliative care training, concerns about legal /religious permissibility and support for palliative sedation as a therapeutic alternative did not show any significant association with palliative sedation use (P > 0.05) (Table 4).

Table 4: Factors associated with palliative sedation use among certified palliative care consultants in Saudi Arabia

Variable	Palliative Sedation use		Effect size (95% C.I.)	P value
	No	Yes		
Gender:				
Male	7 (35)	13 (65)	Phi = -0.003 (-0.32 – 0.31)	0.985€
Female	6 (35.3)	11 (64.7)		
Age (in years):				
< 35	3 (50)	3 (50)	Cramer's V = 0.18 (0.06 – 0.49)	0.502¥
35 – 44	8 (36.4)	14 (63.6)		
≥ 45	2 (22.2)	7 (77.8)		
Region in which you are currently practicing:				
Eastern region	2 (40)	3 (60)	Cramer's V = 0.27 (0.15 – 0.66)	0.635¥
Western region	4 (33.3)	8 (66.7)		
Central region	3 (23.1)	10 (76.9)		
Northern region	2 (66.7)	1 (33.3)		
Southern region	2 (50)	2 (50)		
Highest level of palliative care training:				
Fellowship certification	12 (34.3)	23 (65.7)	Cramer's V = 0.26 (0.10 – 0.44)	0.586¥
Short courses/workshops	1 (100)	0 (0)		
Board certification	0 (0)	1 (100)		
Palliative care practice:				

1 – 2 years	3 (50)	3 (50)	Cramer's V = 0.20 (0.06 – 0.52)	0.377¥
3 – 5 years	7 (38.9)	11 (61.1)		
> 5 years	3 (23.1)	10 (76.9)		
Practical experience with patients receiving palliative care:				
Limited (only in a hospital setting)	7 (58.3)	5 (41.7)	Cramer's V = 0.41 (0.17 – 0.70)	0.056¥
Moderate (in hospital and limited home care)	4 (40)	6 (60)		
Wide (in hospital, hospice, and home-based care)	2 (13.3)	13 (86.7)		
Established palliative sedation practice at workplace:				
Yes	5 (22.7)	17 (77.3)	Phi = 0.32 (-.01 – 0.62)	0.056€
No	8 (53.3)	7 (46.7)		
Concerns about legal /religious permissibility of palliative sedation:				
Yes	0 (0)	1 (100)	Cramer's V = 0.18 (0.02 – 0.47)	0.770¥
No	10 (33.3)	20 (66.7)		
Unsure	3 (50)	3 (50)		
Support for palliative sedation as a therapeutic alternative in clinical practice:				
Yes	9 (31)	20 (69)	Phi = 0.16 (-0.19 – 0.48)	0.413¥
No	4 (50)	4 (50)		

P values calculated using Chi-square test (€) and Fisher's exact test (¥).

DISCUSSION:

Palliative sedation is used to relieve severe, uncontrollable suffering in terminally ill patients. It reduces awareness without affecting the natural dying process [13]. It is mainly applied for refractory symptoms such as delirium and dyspnea, though its use for psychological or existential distress remains ethically complex [14]. Despite broad acceptance of it, debate continues regarding its indications and distinction from euthanasia. The bioethics of Islam permits its use under defined conditions, yet there are some concerns about misunderstanding [15]. The growth of the palliative care services in Saudi Arabia highlights the need to better understand current practices to guide future standardization. This study provides one of the few national assessments of palliative sedation (PS) practice patterns among certified palliative care consultants in Saudi Arabia.

The prevalence of PS use in this study was 64.9%, which indicated that PS is a commonly utilized therapeutic intervention in end of the life care within the Kingdom. Notably, the prevalence which is reported in our study is higher than that reported in several international studies. Similarly, there is a study by Zafra et al. (2024) in Spain which reported that the prevalence of PS among the consultants was 16.7% which is given to the patients who are terminally ill and most frequent refractory symptoms included delirium (36.1%), pain (31.9%) and dyspnea (25%) [16]. These variations across different countries may be due to differences in the cultural norms, ethical frameworks, the maturity of the palliative care systems, and institutional guidelines. Moreover, the relatively high prevalence in our study may reflected improved palliative care infrastructure and the clearer ethical guidance regarding the permissibility of PS within the Saudi context.

Notably, the demographic profile of the palliative care consultants showed that they were predominantly younger individuals with a median age of 38 years. There are many global studies which reported that young consultants were the primary users of PS. This suggested that in Saudi Arabia, PS is being integrated earlier into clinicians' careers, likely due to the expansion of fellowship programs and formalized palliative care training. There is a study by Pinto et al. (2020) which reported that the median age of the palliative care physician age was 38 years [17]. In our study, 94.6% of the consultants held the fellowship certification which underscored the high level of the specialized training within consultants. However, despite this formal training, more than 30% reported limited practical experience with PS. This aligned with the international literature which indicated that real-world exposure to PS remains limited even in the well-developed palliative care systems. A study by Alhaddar et al. (2025) shows that while training enhances the knowledge and attitudes toward PS in consultants, it often lacks practical components, leaving providers underprepared to apply PC in real-life settings [18].

Notably, the clinical indications for PS observed in this study reflected the global patterns. The symptoms like dyspnea (58.3%) and delirium (54.2%) were the most common indications for palliative sedation. These findings consistent with previous studies in different regions of the world where refractory delirium is frequently cited as a leading trigger for PS (Tenor et al. 2025) [19].

Furthermore, pain also accounted for 41.7% of cases, which also aligned with the international data, although global guidelines emphasize careful assessment before labeling pain as refractory. A study by Beauverd et al. (2024) order of symptoms which are predictive of PS as most reported refractory symptoms indicating the need for palliative sedation are delirium (41%–83%), pain (25%–65%), and dyspnea (16%–59%) [20]. By contrast, there is only a minority of consultants which reported the usage of PS for existential or psycho-existential suffering. This is consistent with the previous literature which highlighted that ethical controversy surrounding PS for psychosocial distress, particularly in regions where cultural and religious values discourage sedation for non-physical indications. Moreover, according to Est et al. (2025), the palliative sedation has major social and ethical implications requiring specific considerations by patients, significant others and care providers [21].

In this study there is an overwhelming consensus that PS does not accelerate death (81.1%) and is not equivalent to the euthanasia (94.6%) which is consistent with major international guidelines, including the revised European Association for Palliative Care (EAPC) framework, which emphasizes intention, proportionality, and the ethical distinction between PS and life-shortening interventions [22]. In the Saudi context, this distinction is further supported by the literature of Islamic bioethics, which permits the use of sedation for the relief of refractory symptoms provided the intent is symptom management rather than hastening death (Alfahmi et al. 2022) [23]. The low proportion of consultants expressing concern about legal or religious permissibility showed that PS is ethically accepted within Saudi medical practice.

Notably, family resistance emerged as the most frequently reported barrier (83.8%) in this study, which aligned with the findings from previous literature, where family-centered decision-making is dominant. Prior research by Ghareeb et al. (2025) indicated that families may misunderstand the PS or the fear that it resembles euthanasia, which contributed to hesitancy or refusal [24]. Moreover, the second major barrier for the palliative sedation was lack of the training or guidelines (51.4%) which is consistent with the international data which showed that even in the well-established systems, clinicians request clearer institutional policies and standardized frameworks to support PS implementation [25]. This finding highlighted that there is a need for national guidelines to ensure consistency, safety, and ethical clarity. Moreover, the trends in our study suggested that the use of PS increased with age, years of experience, and the presence of an established PS practice at the workplace, but none of these associations had reached the statistical significance.

Limitation

There are several limitations of this study. The sample size in this study was relatively small. Due to this there is a limit to the generalizability of findings to all palliative care consultants in Saudi Arabia. The self-reported data may introduce the possibility of recall and the social desirability bias, which potentially affected the accuracy. The cross-sectional design only captures practices and attitudes at a single point in time, which prevented assessment of changes over the longer periods. Additionally, the study included only certified consultants, while it didn't include other clinicians which involved in palliative care. Finally, there are regional variations in practice that may not be fully represented despite nationwide participation.

Future Directions & Implications

There is a need for clearer national guidelines and standardized training in order to ensure consistent and ethical palliative sedation practice across healthcare settings. Strengthening of the family education and communication strategies may also reduce the resistance and improve shared decision-making. There is also a need for the integration of structured PS training into fellowship and continuing education programs. Future research should also need to explore perspectives of other healthcare providers, examine patient and family experiences, and evaluate the impact of standardized protocols on clinical outcomes.

CONCLUSION:

This study shows that palliative sedation is commonly practiced among certified palliative care consultants in Saudi Arabia. There are generally positive attitudes toward its ethical and clinical appropriateness. Consultants of Saudi Arabia use palliative sedation primarily for symptoms like refractory dyspnea, delirium, and pain, with midazolam as the preferred agent for sedation. Despite there is a strong acceptance for it, certain challenges such as family resistance, limited experience, and lack of standardized guidelines persist. No significant associations were found between consultant characteristics and palliative sedation use.

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