

Morphine use for cancer pain: A strong analgesic used only at the end of life? A qualitative study on attitudes and perceptions of morphine in patients with advanced cancer and their caregivers

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Julia Fee Voon Ho^{1,2}, Hayati Yaakup^{1,3}, Grace Sook Hoon Low¹,
Siew Lih Wong⁴, Lye Mun Tho⁴ and Seng Beng Tan⁵

Abstract

Background: The prevalence of undertreated cancer pain remains high. Suboptimal pain control affects quality of life and results in psychological and emotional distress. Barriers to adequate pain control include fear of opioid dependence and its side effects.

Aim: To investigate the attitudes and perceptions of morphine use in cancer pain in advanced cancer patients and their caregivers and to examine the influence of caregivers' attitudes and perceptions on patients' acceptance of morphine.

Design: Qualitative study involving semi-structured individual interviews transcribed verbatim and analyzed thematically.

Setting/Participants: A total of 18 adult opioid-naïve patients with advanced cancer and 13 caregivers ($n = 31$) were recruited at a private tertiary hospital via convenience sampling.

Results: Attitudes and perceptions of morphine were influenced by previous experiences. Prevalent themes were similar in both groups, including perceptions that morphine was a strong analgesic that reduced suffering, but associated with end-stage illness and dependence. Most participants were open to future morphine use for comfort and effective pain control. Trust in doctors' recommendations was also an important factor. However, many preferred morphine as a last resort because of concerns about side effects and dependence, and the perception that morphine was only used at the terminal stage. Caregivers' attitudes toward morphine did not affect patients' acceptance of morphine use.

Conclusion: Most participants were open to future morphine use despite negative perceptions as they prioritized optimal pain control and reduction of suffering. Focused education programs addressing morphine misperceptions might increase patient and caregiver acceptance of opioid analgesics and improve cancer pain control.

Keywords

Morphine, cancer pain, palliative care, qualitative research, attitude, perception

What is already known about the topic?

- The prevalence of undertreated cancer pain remains high.
- Suboptimal cancer pain control adversely affects quality of life and leads to psychological and emotional distress in cancer patients and their caregivers.
- Barriers to opioid use for cancer pain include fear of dependence and side effects, as well as caregivers' reluctance to administer morphine.

¹Supportive and Palliative Care Service, Sunway Medical Centre, Bandar Sunway, Malaysia

²School of Medicine, Cardiff University, Cardiff, UK

³Department of Palliative Medicine, Universiti Kebangsaan Malaysia Medical Centre, Kuala Lumpur, Malaysia

⁴Department of Oncology, Sunway Medical Centre, Bandar Sunway, Malaysia

⁵Department of Palliative Medicine, University of Malaya Medical Centre, Kuala Lumpur, Malaysia

Corresponding author:

Julia Fee Voon Ho, Supportive and Palliative Care Service, Sunway Medical Centre, No. 5, Jalan Lagoon Selatan, Bandar Sunway 47500, Selangor, Malaysia.

Email: juleswen@gmail.com

What this paper adds?

- This study explored the attitudes and perceptions of morphine use in cancer pain in opioid-naïve patients with advanced cancer and their respective caregivers using a qualitative approach.
- Participants from both groups perceived morphine as a strong analgesic that reduced suffering but was associated with end-stage illness and opioid dependence.
- Most participants from both groups were open to future morphine use for cancer pain, because they prioritized achievement of adequate pain control, reduction of suffering, and trust in the doctors' recommendations above negative perceptions of morphine.

Implications for practice, theory, or policy

- Targeting misperceptions about morphine in the discussions with patients and caregivers might lead to better compliance to opioid analgesics and optimal control of cancer pain.
- Training programs to improve knowledge of cancer pain management in healthcare professionals might increase the appropriate use of opioid analgesics.
- Increasing public awareness of morphine analgesic might help to destigmatize its use and increase the acceptance of its role in cancer pain management.

Introduction

The incidence of pain has been reported to be over 50% in cancer patients in general^{1–3} and more than 90% in those with advanced cancer.⁴ Additionally, undertreated cancer pain occurs in 43% of cancer patients,⁵ with greater patient-perceived barriers to cancer pain management in Asian patients.⁶ Suboptimal pain control affects the daily activities of cancer patients² and their caregivers and changes the focus of their relationship.⁷ This can further result in psychological and emotional distress.^{7,8}

Morphine is an effective analgesic and recommended for the treatment of cancer-related pain.^{9–11} Statistics from the International Narcotics Control Board (INCB) for 2015–2017 showed that the consumption of opioids in Asian countries like Malaysia (1662 S-DDD¹² per million inhabitants per day) was low compared to North America (40,240 S-DDD) and the United Kingdom (12,575 S-DDD).¹³ Disparities in opioid consumption were partly related to policies affecting opioid access.¹⁴ The Global Opioid Initiative (GOPI) also highlighted that opioid availability throughout most of Asia was still considered low.¹⁵ Furthermore, the Access to Opioid Medication in Europe (ATOME) project^{16,17} reported fears associated with opioids, social stigma and misperceptions, economic burden, and lack of knowledge of opioid use among healthcare professionals as barriers to opioid access, in addition to over-regulation.¹⁸ A large multicenter survey in Asia also identified over-regulation, insufficient pain assessment, and hesitancy in prescribing opioids as physician-related barriers to opioid use.¹⁹ Patient-related barriers include concerns about opioid dependence and side effects and hesitancy in reporting pain.¹⁹ Several questionnaire studies further reported fear of tolerance and injections, implication of progressive disease, and preference for morphine as a last resort as patient-related barriers to opioid analgesic use.^{4,20–25}

In addition, caregivers' reluctance to administer morphine can affect the adequacy of cancer pain control.²⁵ Caregivers' perceptions about opioid dependence and tolerance, side effects, and implication for disease progression^{4,25–27} can further influence patients' use of opioid analgesics.²⁸ It is therefore evident that the barriers to opioid use for cancer pain are multifactorial and complex.

This study qualitatively investigated the attitudes and perceptions of morphine in opioid-naïve cancer patients and their respective caregivers. This study explored the (1) perceptions of morphine in cancer patients and caregivers, (2) attitudes toward future morphine use for cancer pain, (3) reasons behind perceived barriers to using morphine, and (4) influence of caregivers' views on patients' acceptance of morphine use.

Methods**Study design**

This is a qualitative study investigating the attitudes and perceptions of morphine use in cancer pain in patients with advanced cancer and their caregivers. This qualitative approach facilitated a less restrictive exploration, without the limitations of preconceived ideas based on predetermined questions.^{29,30} Participants were recruited using convenience sampling. Face-to-face individual semi-structured interviews were conducted, transcribed verbatim, thematically analyzed,³¹ and findings reported based on the consolidated criteria for reporting qualitative research (COREQ) guidelines.³²

Setting

This study obtained full ethical approval from the institutional Independent Research Ethics Committee on 14

Table 1. Interview topic guide.

Perceptions of morphine
Previous experiences with morphine
Possible concerns about morphine
Attitudes toward future morphine use
Implications of the need for morphine
Effect of caregiver attitudes and perceptions on patient attitudes toward morphine (for patient participant)
Effect of patient attitudes and perceptions on caregiver attitudes toward morphine (for caregiver participant)

February 2018, Reference No: 002/2018/IND/FR, and was conducted in the oncology outpatient clinic of a private tertiary hospital in Malaysia, from March to June 2018.

Sample selection

Participants were recruited using convenience sampling. Selection criteria for patients included (1) stage 3 or 4 cancer, (2) opioid-naïve, (3) not under palliative care management, (4) mentally competent adults, and (5) proficient in English or Mandarin. Their respective caregivers were subsequently selected provided they were (1) immediate family and main caregiver, (2) mentally competent adults, and (3) proficient in English or Mandarin. All participants were not known to the interviewer (J.F.V.H.), a palliative care clinician, to minimize bias.

Sample recruitment

Potential participants were approached face-to-face by the collaborating oncologist (L.M.T.) and/or the oncology nurse (S.L.W.). All 18 patients who were approached participated in this study. Among the 18 caregivers who were approached, five either declined or were physically unavailable to be interviewed.

Data collection

Open-ended interview questions were based on the topic guide presented in Table 1. They were designed after discussions with palliative medicine consultants, extrapolated from findings from previous studies,^{19,20} guided by recommendations by Magnusson and Marecek³³ and further modified after a pilot interview.

Individual face-to-face semi-structured interviews which lasted up to 33 min were conducted with the same interviewer (J.F.V.H.) in a private clinic room and recorded using digital voice-recorders with participants' informed consent. Field notes were taken to record observations and reflections. No repeat interviews were required. To reduce bias, participants were not remunerated. Data saturation was reached after the interview with the 14th patient participant and 12th caregiver participant.

Data management and analysis

All interviews were transcribed verbatim by the interviewer (J.F.V.H.) and checked against audio recordings to ensure consistency. Interviews conducted in Mandarin were translated into English by the interviewer (J.F.V.H.). Translations were checked by another researcher (S.L.W.) to ensure accuracy. All voice recordings and transcripts were anonymized. Patient participants were identified as P1–P18 and caregivers as F1–F18 accordingly. Thematic analysis was performed.³¹ This involved familiarization with transcribed data, generating codes and themes using inductive analysis, further simplifying into broad themes and finally synthesizing the overall analysis (Figure 1).^{31,34} Each transcript was coded using NVivo 12 Pro software³⁵ by the interviewer (J.F.V.H.) and a palliative care clinician (G.S.H.L.) independently to improve accuracy of data interpretation and reduce bias. Any discrepancies in the analysis were compared and discussed to point of agreement. Related codes were then grouped under a broader theme relevant to the research question. Data extracts of transcripts under each theme were reviewed to ensure coherence and relevance, and to identify any missed codes. Themes were then reviewed and reconsidered in relation to the overall data. Final themes were defined and subthemes identified. Data from patient and caregiver groups were analyzed separately and later considered together to compare similarities and differences in the prevalent themes.

Results

A total of 18 patients and 13 caregivers ($n = 31$) participated in the study. Participant characteristics are presented in Table 2. All patient participants had advanced solid organ malignancy. The mean participant age was 61 in the patient group and 51 in the caregiver group. Two-thirds of the participants were female. Majority (84%) were married, and most (74%) had at least a secondary level of education. All participant caregivers were close relatives of the patients. None of the participants withdrew from the study.

Perceptions of morphine

Overall, the themes related to perceptions of morphine were similar in both patient and caregiver groups. Three broad themes were identified (Figure 2):

1. Positive perceptions of morphine (subthemes "morphine is a strong analgesic" and "morphine reduces suffering");
2. Contextual perceptions of morphine (subthemes: "morphine is associated with end-stage illness" and "morphine is expensive");

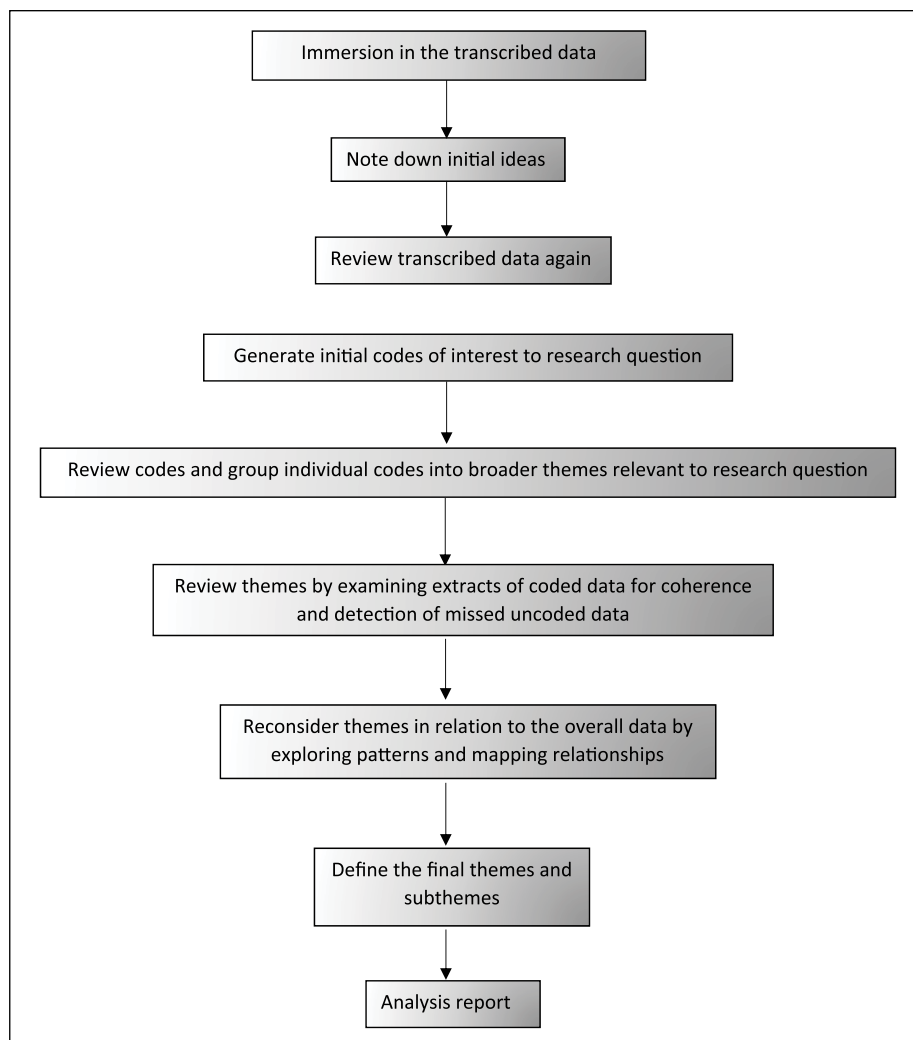


Figure 1. Steps in thematic analysis.

3. Negative perceptions of morphine (subthemes: “morphine is associated with substance dependence” and “morphine is harmful”).

Positive perceptions of morphine. The most prevalent theme in both groups was the perception that morphine was a strong and effective analgesic. Many participants in both groups also felt it could reduce suffering and provide comfort at the terminal stage. Family caregivers thought morphine could relieve patients’ distress, especially in situations of helplessness:

Everyone will have to get to this last stage. And all we will want is not to suffer. So, if you say give me morphine, and it can reduce my suffering, allows me to sleep, that is good too. Then, it will not be so hard on my children, and my husband will not have to see me struggle. (P10)

Lessen the suffering. Try the painkiller [morphine]. When I see her [patient] in so much pain, I think they should take

[the] painkiller. Because I can’t help her. I don’t know where the pain is. You would want to go and hold her, but she doesn’t know where it was hurting. And she didn’t want us to hold her, she just lay on the floor. It was heart-breaking. (F14)

Contextual perceptions of morphine. Many participants in both groups thought morphine symbolized end-stage illness. They associated it with severe disease, terminal stage, and death. Some participants felt that the use of morphine implied disease progression with no treatment options remaining, leading to hopelessness:

Morphine in my impression is . . . it’s always equal to death. It’s [for] the terminally ill patients that have no more treatment, and it is used for them just to reduce their pain . . . and they will be given morphine just for the last few days of their lives . . . It’s like the life is ending and the treatment is not effective anymore. So, you have no choice but to take morphine to control the pain. (P5)

Table 2. Characteristics of study participants.

Participant characteristics	Number of patients (n = 18) (%)	Number of caregivers (n = 13) (%)	Patients and caregivers (n = 31) (%)
Age (years)			
21–30	0	3 (23%)	3 (10%)
31–40	0	2 (15%)	2 (6%)
41–50	2 (11%)	2 (15%)	4 (13%)
51–60	6 (33%)	0	6 (19%)
>60	10 (56%)	6 (46%)	16 (52%)
Gender			
Female	12 (67%)	8 (62%)	20 (65%)
Male	6 (33%)	5 (38%)	11 (35%)
Marital status			
Single	2 (11%)	3 (23%)	5 (16%)
Married	16 (89%)	10 (77%)	26 (84%)
Divorced/separated	0	0	0
Education level			
Primary	6 (33%)	2 (15%)	8 (26%)
Secondary	9 (50%)	5 (39%)	14 (45%)
Tertiary	3 (17%)	6 (46%)	9 (29%)
Caregiver relationship to patient			
Spouse		7 (54%)	
Child		4 (31%)	
Sibling		1 (8%)	
Nephew		1 (8%)	
Patient cancer diagnosis			
Breast	8 (44%)		
Colon	4 (22%)		
Lung	3 (17%)		
Pancreas	1 (6%)		
Gallbladder	1 (6%)		
Melanoma	1 (6%)		

If it comes to the stage when the doctor really needs to use morphine, I think it gives me the feeling then that there are no treatment options left. It's because I know that usually, when we need to use morphine, it's already the terminal stage. There is no more treatment available. Because he [patient] will have pain then, he will need to depend on morphine to live. (F16)

A few patients and caregivers thought that morphine was expensive because it was not available over the counter:

But of course, compared to Panadol, morphine will be more expensive. But morphine can only be given in the hospital. You can't buy it from the pharmacy, right? So of course, when you buy it from the hospital, it will be more expensive. (P5)

Negative perceptions of morphine. Almost half of the participants in both groups regarded morphine as a substance that can cause dependence, albeit with medicinal applications. The difference was in the dosage, processing, and

context of its use. As such, they felt its usage should only be as a last resort:

My impression of morphine is [that it was used by] those drug addicts. But if it is for medical use, if it is good for the patient and can ease the patient's pain, then I think it should be used. If there are no other drugs besides this, then you will have to use it, rather than to see him suffer in pain. If there is something that can stop the pain whenever you give to him . . . as long as he doesn't get addicted to it. (P11)

A few participants expressed concerns with morphine tolerance, where repeated usage would result in reduced analgesic efficacy:

I also heard from my friend that if you take too much of it, its analgesic effect will be reduced. Maybe you will become used to the dosage. If you keep on injecting it, it will start to work against its own effect. (F15)

The subtheme of harmful effects of morphine was raised by a few participants in both groups. These stemmed

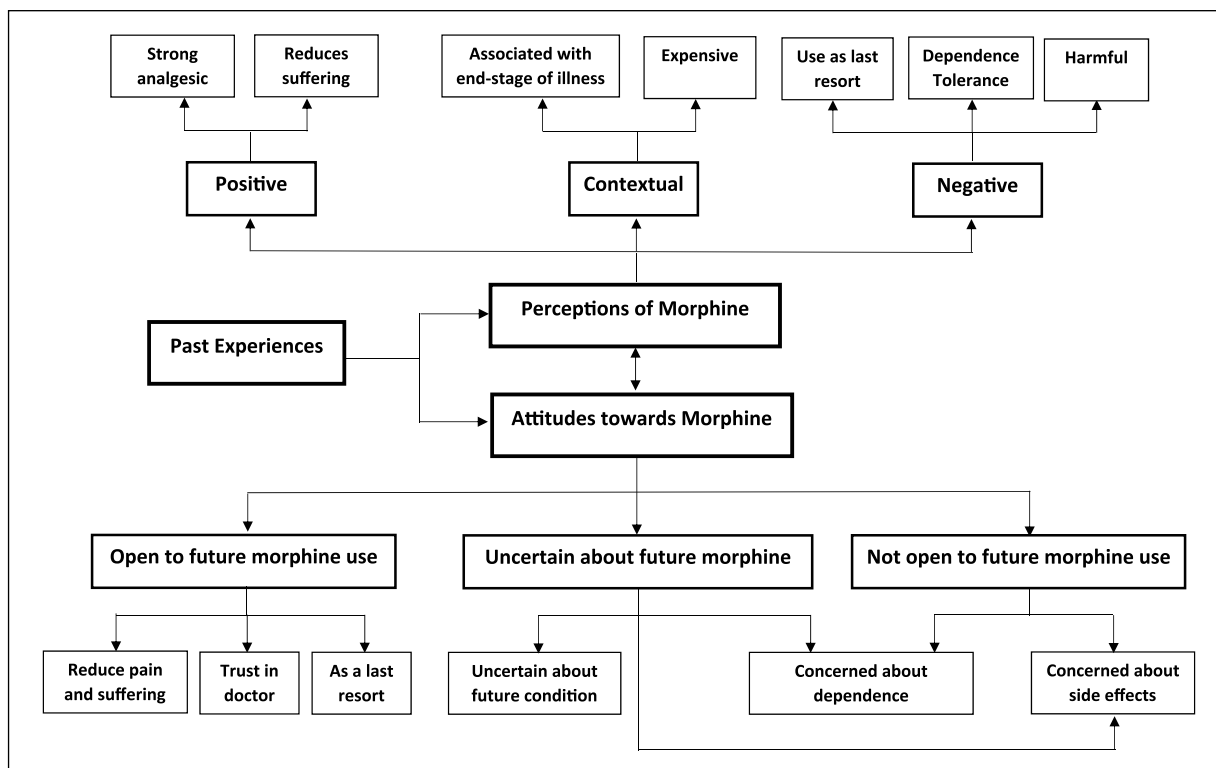


Figure 2. Model of attitudes and perceptions of morphine.

mainly from concerns about morphine side effects and dependence:

Like if there is any negative impact on the body and any side effects. If there are side effects and we continue to take it [morphine], it's the same as killing yourself prematurely. Everyone is like that, they are all afraid of side effects after we take the medication. Everyone is like that, afraid of death. (P14)

Attitudes toward morphine

Participant attitudes toward patient acceptance of future morphine use were further examined. Three broad themes were identified (Figure 2):

1. Open to future morphine use (subthemes: "reduction of pain and suffering," "trust in doctor," and "morphine as last resort");
2. Uncertain about future morphine use (subthemes: "depends on future condition," "concerns about adverse side effects and dependence," and "insufficient information and knowledge about morphine");
3. Not open to future morphine use (subtheme: "concerns about dependence and adverse side effects").

Patient attitudes toward morphine—open to future morphine use. Most patients were open to future morphine

use mainly to reduce their suffering and pain. Many participants further trusted that the doctors' recommendations were in their best interest:

I am for it [morphine] if it takes away the pain. I am for it. Because there is no point in suffering right to the end, and end in pain. Because the pain would probably be unbearable. That's why morphine is given. (P12)

If [the] doctor would like to recommend it [morphine], you will have to take it. I think they will give you the best suggestion. Of course, if the doctor prescribes [it] to you, I'm sure he will control it. Whether you become an addict or not, I don't know . . . But as long as the doctor recommends [morphine] to you, I'm sure the doctor will control it. (P1)

However, many expressed that they would be open to morphine use only as a last resort, where there was no other choice:

If I need it [morphine], if the pain is so great and there's no other drug that can contain the pain, then, what choice do I have? You will have to take it. The doctor wanted you to do that [take the morphine] because that is the last resort already. It is either you sit in pain until you die, or you take it for the time being to relieve the pain. If you need it, you need it. If you are in such suffering, you have no choice. (P11)

The possibility of long-term dependence was regarded as less important by some participants who perceived

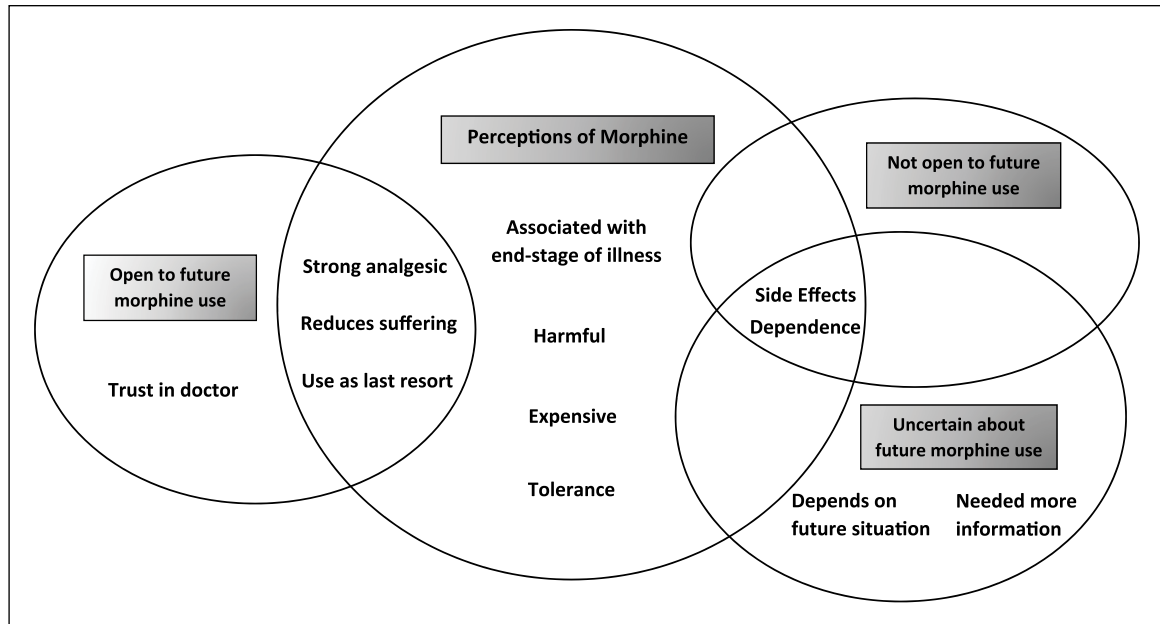


Figure 3. Overlapping themes between participant attitudes and perceptions of morphine.

morphine as being associated with end-stage illness, as they felt that their priority during that stage would be to reduce suffering:

But if you have the pain, how long will you be addicted for? I don't think you will be around for the next year with morphine, right? Morphine is given because it's the tail end. I don't think you will be addicted to it. That's my point of view. (P12)

One patient (P12) further emphasized the importance of still being able to hear and communicate with loved ones when using morphine.

Patient attitudes toward morphine—uncertain or not open to future morphine use. Only a few patients were either uncertain or not open to future morphine use. This was secondary to concerns about side effects and dependence. They were also uncertain about their future condition and how that would affect their attitudes at that point:

That's why I said that if I have options, I don't want to take it [morphine]. Maybe it's too strong. After you take it, then the other lower-level drugs won't be effective anymore. So, after that, every time I have pain I will have to depend on morphine already. I think for morphine, maybe the effect after that is not very good, like the side effects. (P5)

It depends on the situation, whether I can bear with the pain or not. If I can really stand it, I don't think I can accept it [morphine]. Because I don't know about the potential complications. My main concern is whether the side effect will have a big impact on my body. Every time I take a

medication, I will go on Google search and look at how serious the side effects can be. (P18)

Caregiver attitudes toward morphine—open to future morphine use. Most of the caregivers were open to future morphine use for their loved ones to reduce pain and suffering. They also trusted the doctor to know what was best for them:

I would think that this [taking morphine] is an option that the doctor has chosen you know, and I will definitely follow the advice given by the doctor because it is under professional care. I have no knowledge of medical science. So, I've no option and I just have to take the doctor's advice. (F10)

However, some caregivers preferred it as a last resort due to concerns about dependence and side effects:

If he is really in a lot of pain but is unable to sleep, then I feel that I will let him try it . . . Because I already had the impression that morphine is a drug, so I wonder if after he has been injected with it, will he become addicted? If he is ill, I don't have a choice. If it makes him more comfortable, then I will continue to give it to him. (F16)

Only one caregiver was unsure about patient's future morphine use, as it depended on the future situation and expressed that more information was needed. None of the caregivers objected to future morphine use for the patient. Overlapping themes were evident between participants' attitudes and perceptions. These included "strong analgesic," "reduces suffering," "dependence," "used as a last resort," and "concerns with side effects" (Figure 3).

Effects of previous experiences on attitude and perceptions of morphine

Most participants reported previous experiences with morphine. Positive or negative interpretations of the experiences invariably influenced their perceptions and acceptance of morphine use:

My grandfather also had cancer. He also suffered for the last half year of his life. But he was given morphine from us at that time . . . I feel that it is an effective painkiller. Especially for some patients, when they reach a stage where they really have no other choice, I feel that morphine will be helpful for them. (F18)

Paired analysis between patient and caregiver groups

A paired direct analysis of the themes and subthemes for participant attitudes and perceptions was performed for 13 pairs of patients and caregivers. Twelve pairs exhibited congruence in their perception of morphine as a strong analgesic, seven associated morphine with end-stage illness, and seven associated morphine with dependence. Only 6 out of 13 pairs were congruent in their openness to future morphine use for the patient. In patients who were not open to or uncertain about future morphine use, there was no correlation with the attitudes of the caregivers, who were all accepting it.

Discussion

This study explored the factors behind barriers to morphine use for cancer pain in opioid-naïve advanced cancer patients and their caregivers using a qualitative approach.

Main findings and implications for future practice

The perceptions of morphine were similar in both groups. This could be explained by similar cultural and social backgrounds and experiences, and sharing the same cancer journey with the patient. Overlapping themes were observed in participant attitudes and perceptions, reflecting the interactions between their previous experiences, opinions, and behaviors.

Morphine—a strong analgesic but associated with dependence? Many participants regarded morphine as a strong analgesic, which has also been observed previously in the non-cancer population.³⁶ Almost half of the participants in both groups perceived it as a substance that can cause dependence. A few participants in their 60s further related morphine to opium. This could be related to their previous experiences, where opium use was common among the Chinese population in Asia after the Second

World War and into the 1950s.³⁷ Previous studies have also identified fear of opioid dependence as one of the common barriers to the use of opioid analgesics.^{4,20,22–24} This highlights the importance of appropriate and neutral terminology used in relation to opioids by trusted health-care providers and regulatory and legislative bodies so as to avoid contributing to the stigmatization of opioid use in cancer pain.³⁸

Interestingly, fear of morphine dependence was not a main theme in a previous qualitative study of cancer patients by Reid et al.³⁹ However, most participants in that study were already on regular doses of opioid analgesics at the point of data collection. Thus, experiences with the efficacy of opioid analgesics could have led to fewer concerns about dependence.

Morphine implies end-stage illness. Most participants felt the use of morphine implied that they had reached the end-stage of their illness. This sentiment has also been observed in previous studies, where morphine was thought to symbolize progressive disease and impending death.^{20,39} This negative perception could contribute to patients' reluctance to use morphine, as they might feel that their condition is not yet terminal or serious enough to require it. Indeed, many participants in this study expressed that they would accept morphine only as a last resort. Furthermore, participant attitudes were observed to be related to their previous experiences and preconceived opinions about morphine. Patient and caregiver education and awareness programs focusing on morphine use for cancer pain other than at the dying stage might therefore be helpful in removing the stigma of morphine being associated with end-stage illness and hopelessness.

Most participants from both groups were open to future morphine use. Despite the perceptions that morphine was harmful, expensive, and associated with dependence, most participants were open to future morphine use. This was because they felt that patients' comfort, achievement of adequate pain control, and reduction of suffering should be prioritized. Many participants further emphasized on the importance of trusting the doctors to act in their best interest, which has also been observed previously.^{36,39} This finding highlighted the vital role of healthcare professionals in recommending appropriate analgesic and educating patients and caregivers on the role of opioids for cancer pain. Over-regulation, hesitancy in prescribing opioids because of fears about dependence, side effects and respiratory depression, and inadequate knowledge of opioid use for cancer pain have been previously identified as physician-related barriers to morphine use.^{19,40–44} Targeted training for healthcare professionals on cancer pain management that addresses these misconceptions might improve their knowledge and reduce reluctance in prescribing opioid analgesics.⁴⁰

In addition, the opioid crisis in the United States^{45,46} surrounding the overdose and misuse of opioids in the treatment of chronic non-cancer pain has led to greater regulations in opioid access in the United States⁴⁷ and could contribute to physician barriers to use of opioid analgesics. To date, the influence of the US opioid crisis on public opinion and clinical practice of healthcare professionals in Asian countries like Malaysia has not been formally investigated. Further research exploring the impact of the US opioid crisis on local legislations and regulations, public and clinician opinion, opioid prescribing patterns, and health outcomes would be helpful to guide future clinical practice and policy-making. Furthermore, the Centers for Disease Control and Prevention (CDC) had also published their 2016 guidelines on opioid use in chronic pain,⁴⁸ but this excluded patients who are receiving palliative care, end-of-life care, and active cancer treatment. More studies will be required to clarify the impact of increased opioid regulations on opioid access and adequacy of pain control in this specific group of patients.^{49,50}

Lack of impact of caregivers' views on patients' attitudes toward morphine use. Notably, views of the caregivers did not appear to have a significant impact on patients' attitudes toward future morphine use. In fact, a few participants expressed that the decision to use morphine was entirely up to the patient. However, this study was not designed to reach conclusions on significant differences between the two groups. Therefore, only congruence in our participants' responses was examined. In a survey comparing patient and caregiver dyads, Ward et al.²⁷ found no correlation between patient and caregiver concerns about analgesic dependence, tolerance, and side effects. However, these results could have been biased because of small sample size. In contrast, a larger survey study by Lin²⁵ observed a positive correlation. They concluded that inadequate cancer pain management was more prevalent among patients whose caregivers expressed greater concerns about analgesics and could have been related to greater caregiver hesitancy to administer morphine.²⁵ Further large-scale studies on the effects of caregiver attitudes and perceptions on patient acceptance of morphine would provide further clarity, especially in the context of different cultural backgrounds.

Limitations

This study was conducted in a private hospital with predominantly Malaysian Chinese patients. Thus, it might not accurately reflect the views of patients and caregivers from a broader perspective. A few of the interviews were conducted in Mandarin instead of English, but the translated transcripts were checked by another researcher to reduce bias and inaccuracy. Although the sample size was

small, data saturation was achieved as participants with similar characteristics had been purposely selected.⁵¹

Conclusion

In conclusion, both patient and caregiver participants shared similar attitudes and perceptions of morphine. Past experiences influenced the participants' perceptions of morphine, which in turn influenced their attitudes toward future morphine use. The stigma of morphine being associated with dependence and end-stage illness was a prevalent theme. However, most participants were still open to using morphine for cancer pain as they prioritized adequate pain control and trusted in doctors' recommendations and professionalism. These findings provide a deeper understanding of the barriers to use of opioid analgesics for cancer pain and highlight the important role of healthcare professionals in increasing patients' acceptance. Future research exploring clinician attitudes and perceptions of opioids, gaps in knowledge in cancer pain management, and the efficacy and cost-effectiveness of targeted training programs to improve clinician competency in managing cancer pain would provide further clarity. Additionally, programs to raise public awareness about opioid analgesic use for cancer pain might help to reduce the stigma associated with its use.

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Data management

The data and analysis material related to this study are maintained and managed according to organizational guidelines and ethical regulations. In the interest of patient confidentiality and anonymity, this information will not be made publicly available. Requests for further information can be directed to the corresponding author.

Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Ethical approval

Full ethical approval was obtained from the Sunway Medical Centre Independent Research Ethics Committee on 14 February 2018, Reference No: 002/2018/IND/FR.


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Informed consent

All of the study participants were provided with both verbal and written participant information prior to their involvement. Both verbal and written informed consent were obtained before data collection. They were all given the assurance of confidentiality and anonymity and the option to withdraw from the study at any given time.

ORCID iDs

Julia Fee Voon Ho  <https://orcid.org/0000-0001-9934-7423>

Seng Beng Tan  <https://orcid.org/0000-0002-0649-0739>

Supplemental material

Supplemental material for this article is available online.

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