

Insomnia in Cancer Care: Analyzing Oncologists' Knowledge and Practice in Singapore

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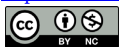
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Abstract

Introduction: Insomnia is a common but often underdiagnosed and under-treated condition among cancer patients, significantly impacting their quality of life (QoL). Oncologists play a crucial role in managing insomnia, yet their knowledge and practices in this area remain unclear. This study aims to assess the current practices of oncologists in Singapore regarding insomnia management and to identify areas where additional education may be needed. **Methods:** We conducted a cross-sectional survey of practicing medical and radiation oncologists in Singapore. The survey, based on the 2023 ESMO Clinical Practice Guideline for managing insomnia in adult cancer patients, included 12 multiple-choice, checkbox, and open-ended questions. Data were analyzed descriptively to identify trends in screening, assessment, and management of insomnia among oncologists. **Results:** A total of 25 oncologists responded to the survey. The majority (84%) do not routinely screen for sleep disturbances, and only a small fraction uses validated tools to assess insomnia severity. Time constraints and a lack of knowledge were identified as the primary barriers to comprehensive sleep assessments. Pharmacological treatments, particularly melatonin and Z-class drugs, were commonly initiated, with 32% of oncologists using them as first-line therapy. Non-pharmacological strategies, such as cognitive behavioral therapy for insomnia, were underutilized. Additionally, many oncologists expressed uncertainty about when to refer patients to sleep specialists, indicating a gap in their training and confidence in managing insomnia. **Conclusion:** This study reveals significant gaps in the routine screening and comprehensive management of insomnia among oncologists in Singapore. Despite the high prevalence of sleep disturbances in cancer patients, oncologists often prioritize other symptoms and lack the necessary tools and

knowledge to address insomnia effectively. The findings underscore the need for targeted educational interventions to enhance oncologists' competence in diagnosing and managing insomnia, ultimately improving patient care.

Keywords

Insomnia, Sleep Disorder, Cancer Patients, Oncology Education, Quality of Life

1. Introduction

Insomnia denotes a dissatisfaction with sleep quantity or quality, characterized by difficulty initiating sleep, maintaining sleep, or early-morning awakening with the inability to return to sleep despite adequate opportunity for sleep, according to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) [1]. In order to fulfill the diagnostic criteria for Insomnia Disorder, the sleep issue has to also cause clinically significant distress or impairment in important areas of functioning, occur at least 3 nights per week for at least 3 months, not be due to or occur exclusively during another sleep-wake disorder and not be attributable to another substance or other mental or medical condition.

It is estimated that roughly 30% of the general adult population reports one or more symptoms of insomnia [2]. In contrast, nearly 50% of patients with a recent cancer diagnosis exhibit insomnia symptom [3]. A recent systematic review reported a prevalence rate of up to 95% for sleep disturbances and disorders among cancer patients [4], although discrepancies in reported rates may be related to the heterogeneity in defining and measuring insomnia symptoms [5].

There is a growing emphasis on including quality of life (QoL) outcomes as an endpoint in cancer care, with sleep quality being a key component of QoL due to its impact on both physical and mental health outcomes. Unfortunately, sleep disorders are prevalent in cancer patients and have multifactorial causes, including physical, drug-related, and psychological factors. While oncologists are adept at managing physical and drug-related causes, psychosocial factors and their management are often underrecognized and undertreated [6] [7]. Understanding oncologists' knowledge and practices in managing insomnia is crucial to identifying gaps in care that could be addressed through targeted continuing medical education.

This primary study objective was to assess the usual practices of oncologists in Singapore regarding insomnia management. The secondary objective is to identify areas of need for medical education on this topic.

This study was approved by the Institutional Review Boards of SingHealth. Written informed consent was waived due to the anonymous survey approach.

2. Methods

This cross-sectional study employed an anonymous online survey targeting

practicing medical and radiation oncologists in Singapore, conducted in September 2024. The survey was distributed via WhatsApp links in group and private messages, and oncologists were encouraged to share it with their colleagues.

The survey questionnaire was based on the 2023 European Society for Medical Oncology Clinical Practice Guidelines (ESMO CPG) on assessing and managing insomnia in cancer patients and survivors [8] and the 2010 Singapore College of Family Physicians Insomnia Guidelines [9]. The survey comprised 12 multiple-choice, checkbox, and open-ended questions. Data were analyzed descriptively to identify trends in screening, assessment, and management of insomnia among oncologists.

3. Results

A total of 25 participants responded shown in **Table 1**. 13 (52%) were medical oncologists and the remaining 12 (48%) were radiation oncologists. Most of the respondents were specialist or consultant level (84%).

Table 1. Questionnaire and participant responses.

	Responses	N (%)
	Specialty	25
1	Radiation oncology	13 (52%)
	Medical oncology	12 (48%)
	Role in Field	25
2	Specialist/consultant	21 (84%)
	Trainee/medical officer-Registrar	4 (16%)
	How often do you screen for insomnia amongst your cancer patients?	25
	Rarely < 20%	16 (64%)
3	Sometimes 20% - 50%	4 (20%)
	Often 50% - 80%	1 (4%)
	Most of the time >80%	3 (12%)
	If rarely/sometimes, why? (Choose all that apply)	25
	No time	4 (19%)
3.1	If patients don't mention it, it's not an issue	12 (57.1%)
	Sleep is not as important as other ongoing issues	9 (42.9%)
	Others: Depends on case/situation (yes for stage 4 or physical symptoms, no if adjuvant treatment/follow-up)	1 (4.8%)
	Estimate how many of your patients experience problems with sleep?	25
	Rarely < 20%	5 (20%)
4	Sometimes 20% - 50%	15 (60%)
	Often 50% - 80%	5 (20%)
	Most of the time >80%	0 (0%)

Continued

	In patients with poor sleep, do you explore other non-physical contributory factors e.g. mood disorders, distress over their cancer, social events, diet, light exposure, exercise habits, OSA?	25
5	Never	1 (4%)
	Some of it (20% - 50%)	12 (58%)
	Most of it 50% - 80%	10 (40%)
	Always	2 (8%)
	If never/some of it, why? (Choose all that apply)	12
5.1	No time	7 (58.3%)
	Don't know enough to ask	4 (33.3%)
	Maybe too sensitive a topic	0 (0%)
	Not important as there is often a clear reason	3 (25%)
	Not sure how to manage it	1 (8.3%)
	In patients with sleep issues, do you evaluate the sleep patterns e.g. ease of falling asleep, interrupted sleep, duration of sleep, quality of sleep, type, frequency, daytime somnolence, inappropriate sleep?	25
6	Never	5 (20%)
	Some of it (20% - 50%)	8 (32%)
	Most of it 50% - 80%	10 (40%)
	Always	2 (8%)
	If never/some of it, why? (Choose all that apply)	14
6.1	No time	7 (50%)
	Don't know enough to ask	7 (50%)
	Not important and won't affect management	4 (28.6%)
	Do you use any validated tools/scales for sleep assessments (e.g. Insomnia Severity Index or Consensus Sleep Diary)	25
7	Rarely < 20%	24 (96%)
	Sometimes 20% - 50%	1 (4%)
	Often 50% - 80%	0 (0%)
	Most of the time >80%	0 (0%)
	If rarely/sometimes, why?	25
7.1	Don't know about it	23 (92%)
	Not important and won't affect management	2 (8%)
	What is your first line of management for insomnia	25
8	Pharmacological/Medications	8 (32%)
	Non-pharmacological	17 (68%)

Continued

	Which of the following non-pharmacological strategies is done in your consult? (Choose all that apply)	25
	Bright-light therapy	2 (8.3%)
	Exercise intervention	8 (32%)
9	Cognitive behavioural therapy/mindfulness/relaxation techniques	7 (28%)
	Sleep hygiene education	19 (76%)
	None of the above	3 (12%)
	Others:	
	Refer psychiatry	1 (4%)
	Diet	1 (4%)
	Amongst the pharmacological therapies, what is/are often your first drug(s) choice? (Choose all that apply)	25
	Melatonin	11 (44%)
	Benzodiazepine	4 (16%)
10	Non-benzo hypnotic (e.g. Zopiclone/Zolpidem)	10 (40%)
	Opioid	0 (0%)
	Anti-histamine (e.g. Hydroxyzine/Chlorpheniramine)	9 (36%)
	None of the above	1 (4%)
	Do you believe the non-benzo hypnotics like Zopiclone and Zolpidem are generally safer than Benzodiazepines (e.g. less habit-forming/interactions)?	25
11	Yes	17 (68%)
	No	8 (32%)
	If you prescribe a hypnotic drug for insomnia. How frequently would you follow-up after assessing the effects?	24
12	Will not affect follow-up decision	17 (70.8%)
	2 - 4 weeks after	7 (29.2%)
	If a patient requires hypnotics, when would you refer him to a sleep specialist?	24
	Rarely ever	11 (45.8%)
13	After 4 - 8 weeks	6 (25%)
	After a few months	4 (16.7%)
	All the time regardless of duration	3 (12.5%)
	Are there specific areas related to insomnia management where you feel you need more education/aid is helpful?	11
	Indications for sleep specialist referral and pathways	4 (36.4%)
14	Non-pharmacological intervention	2 (18.2%)
	Pharmacological therapy	2 (18.2%)
	General (Initial approach, red flags, indications to start treatment, algorithms of treatment)	3 (27.3%)

Most oncologists (84%) would not routinely screen for sleep disturbances. Of the respondents, 57.1% only address sleep issues if raised by the patient, and 42.9% consider sleep issues less important than other ongoing concerns. 60% of respondents estimated that patients experience sleep issues 20% - 50% of the time.

Although most oncologists (96%) explore non-physical contributory factors of insomnia, this is usually done briefly (52%). The main barriers to comprehensive assessment include time constraints (58.3%), lack of knowledge (33.3%), and the belief that it is not important (25%).

84% of oncologists either rarely or only sometimes inquire about sleep disturbance patterns, often citing a lack of time or knowledge. Most do not use validated tools to assess insomnia severity, with many unaware of such tools.

32% of respondents would start pharmacological treatment as first-line management. Among non-pharmacological options, sleep hygiene education and exercise interventions were most commonly employed. Pharmacological treatments such as melatonin, Z-class drugs, and antihistamines were frequently used. 68% of oncologists considered Z-class drugs safer than benzodiazepines. The majority would not change their patient follow-up pattern after initiating hypnotics.

Most respondents rarely refer patients to a sleep specialist, with 16.7% referring only after a few months of hypnotic use.

In terms of education, 11 respondents suggested topics such as general approaches, interventions, and indications for referral to specialists.

4. Discussion

With the global increase in cancer cases, the prevalence of insomnia is expected to rise. The World Health Organization (WHO) predicts a 77% increase in cancer cases worldwide by 2050, reaching 35 million new cases compared to 20 million in 2022 [10]. Factors such as an aging population, tobacco use, alcohol consumption, obesity, and pollution contribute to this trend and are also directly linked to sleep issues, underscoring the importance of oncologists being proficient in diagnosing and managing insomnia.

The National Comprehensive Cancer Network (NCCN) survivorship guidelines [11] and the ESMO CPG [8] were published to guide physicians in addressing sleep disorders. However, our findings suggest that many oncologists may be unaware of these guidelines or have yet to apply them in their clinical practice. Despite recognizing the prevalence of sleep disorders, screening for insomnia is not routine, with many oncologists relying on patients to initiate the discussion or prioritize other symptoms.

From our survey, although oncologists know that sleep disorders can be prevalent, affecting >20% of patients, screening for it is not routine as they feel that patients will initiate the communication of symptoms or there are other more important symptoms to address. In terms of obtaining appropriate sleep history, e.g. contributory factors and frequency of sleep issues, this is often not performed.

A recurring barrier to comprehensive insomnia management is time constraints.

Oncology clinics are often busy, leading oncologists to focus on what they perceive as more critical issues, such as disease status, treatment side effects or physical symptoms such as pain or shortness of breath, which may itself contribute to insomnia. However, insomnia due to psychological, social, or environmental factors is not uncommon among cancer patients [3].

One recurring factor that prevents the attainment of adequate sleep history is the limitation of time. This may be because oncologists tend to focus on what they perceive to be more important like the disease status, side effects of treatment or physical symptoms such as pain or shortness of breath. Although physical symptoms can also contribute significantly to insomnia, having insomnia due to psychological, social or environmental factors is not uncommon among cancer patients.

The ESMO CPG recommends the 3-P model for assessing insomnia, which involves evaluating predisposing, precipitating, and perpetuating factors relevant to the development and maintenance of persistent insomnia [8]. However, these factors are often not explored by oncologists, with many citing a lack of knowledge as the reason.

The use of validated sleep assessment tools, which are essential for evaluating insomnia and monitoring treatment response, is rarely performed. Similarly, this may be largely due to a lack of awareness among oncologists.

In terms of treatment, a combined approach addressing contributing factors and employing non-pharmacological interventions should be the first line of management. However, a significant proportion of oncologists in our survey would start with pharmacological treatments. Cognitive Behavioral Therapy for Insomnia (CBT-I) is considered the standard of care by the European Sleep Research Society (ESRS), the American College of Physicians (ACP), and the American Academy of Sleep Medicine (AASM) [12]. Various other psychological treatment modalities such as brief behavioural therapy for insomnia and mindfulness-based therapy are also recommended by the ESMO CPG. Despite this, it appears to be underutilized by oncologists in Singapore.

Amongst the medications started, melatonin is most commonly initiated. Melatonin is widely available, has few drug-drug interactions and has a low side effect profile, making it a good option for use in cancer patients. Additionally, melatonin is being investigated by numerous studies for its anti-cancer properties, albeit at higher doses (3 - 40 mg) [13]. A recent study also reported that melatonin prolonged survival in advanced cancer patients [14]. When used for the short term this is relatively safe, although longer-term use of up to 13 weeks is also acceptable with the prolonged-release version at 2 mg, according to the ESMO CPG.

Antihistamines are another commonly initiated drug as most physicians are familiar with it and utilise its sedative effects. However, it is not one of the recommended pharmacotherapies in the insomnia guidelines, due to the poor sleep quality that these medications afford and their potential side effects, especially of the anticholinergic kind [15].

In this study, Z-drugs are twice more commonly prescribed than benzodiazepines

as first-line pharmacotherapy for insomnia. Twice as many oncologists believed that z-drugs are somehow safer than benzodiazepines compared to those who did not. Research has shown, however, that z-drugs do come with significant risks that are very similar to benzodiazepines and that their risks of tolerance and dependence are in fact similar to those of benzodiazepines [16] [17]. Most oncologists also report that they would not even follow up once they initiated a hypnotic, reflecting a need for improved knowledge and experience in managing sleep issues.

Interestingly, despite these findings, less than half of the respondents indicated that they did feel a need for additional education or training in sleep management. Further research should explore oncologists' detailed knowledge, experience, and the potential barriers that may dissuade them from seeking further education on insomnia. Understanding these factors will help in developing effective strategies to overcome these barriers, ultimately enhancing clinical expertise and improving patient care.

This study has several limitations. The response rate may not fully represent the entire oncology community in Singapore, as practices could vary depending on factors such as institutional setting (e.g., private vs. public), seniority level, and specialty. The survey was limited to 12 questions to optimize response rates and reduce completion time, which provided a broad overview but may have restricted the depth of data collected. Additionally, the survey responses may not reflect actual clinical practice. While face-to-face interviews might have yielded more accurate insights, the anonymous electronic format was chosen to ensure confidentiality and ease logistical challenges.

Despite these limitations, there is a lack of research assessing oncologists' knowledge of insomnia management and identifying areas for targeted educational interventions. Our study results align with similar reported studies in other countries [18] [19], highlighting a general lack of understanding in this field. Focused educational strategies could be employed to enhance oncologists' ability to better evaluate and manage sleep disorders in cancer patients. Additionally, our study highlights another key area for improvement that involves reviewing referral pathways and refining criteria for referrals to sleep specialists. This would also enhance collaborative care, leading to improved patient outcomes.

5 Conclusion

This study highlights gaps in the knowledge and practice of insomnia management among oncologists in Singapore, particularly in the areas of screening, assessment, and the use of validated tools. Targeted educational interventions could help upskill oncologists, leading to improved clinical acumen and better patient outcomes. Further research into the barriers preventing oncologists from enhancing their knowledge of insomnia management is needed to inform the design of effective educational strategies.

Ethics Approval

The ethical approval statement was obtained from SingHealth IRB.

Underlying Data

All data underlying the results are available as part of the article and no additional source data are required.

Conflicts of Interest

The authors declare that there is no conflict of interest.

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