Journal of Multidisciplinary Healthcare

Dovepress
Taylor & Francis Group

Open Access Full Text Article

ORIGINAL RESEARCH

A Qualitative Study of the Experience of Multidisciplinary Teamwork in Chronic Critical Illness Patients

Xiulu Xu[1], Mengjuan Jing[2], Yuxin Zhu[3], Hanghang Jin[1], Liming Li[4]

[1]School of Nursing and Health, Zhengzhou University, Zhengzhou, People's Republic of China; [2]Center Intensive Care Unit, Henan Provincial People's Hospital, Zhengzhou, People's Republic of China; [3]School of Nursing and Health, Henan University, Kaifeng, People's Republic of China; [4]Department of Nursing, Henan Provincial People's Hospital, Zhengzhou, People's Republic of China

Correspondence: Liming Li, Email sylilimin868199@126.com

Purpose: To explore the reasons for poor multidisciplinary team (MDT) cooperation of Chronic Critical Illness (CCI) patients and their needs and expectations for carrying out MDT cooperation, with a view to providing references for improving MDT cooperation of CCI patients.

Methods: Semi-structured interviews with 15 members of the MDT of CCI patients in a hospital of Henan Province were conducted in September and October of 2024 using a descriptive qualitative design. The data were analyzed using the thematic analysis method developed by Braun and Clarke.

Results: Three themes emerged: Theme 1: The collaborative experience of MDT members, with three sub-themes: essential MDT cooperation, absence of specialized MDT, and the nurse's diminished role; Theme 2: Barriers to MDT cooperation, with three sub-themes: unclear cooperation process and job responsibilities, lack of effective communication, and insufficient observation and feedback; Theme 3: Facilitators to MDT cooperation, divided into three sub-themes: timely and effective communication, a leading role, well-developed MDT tools.

Conclusion: Due to the following deficiencies: unclear cooperation process and job responsibilities, lack of effective communication, and insufficient observation and feedback, it is urgent to take appropriate measures to promote MDT cooperation for CCI patients.

Keywords: chronic critical illness patients, multidisciplinary team cooperation, experience, qualitative design

Introduction

Many critically ill patients survive the initial acute illness but continue to experience persistent organ failure requiring long-term intensive care, a syndrome known as Chronic Critical Illness (CCI).[1,2] Related researches pointed out that, between 2004 and 2009, there were 380,001 CCI patients in the USA, up from 302,173 in 2004,[3] between 2015 and 2022, the prevalence of CCI rose from 7.6% to 55%.[3–5] CCI patients may have an 81% 5-year mortality rate and an in-hospital mortality rate of 25% to 38%, even higher than for most malignancies.[6] In addition, CCI patients are in a chronic, severe state of sickness and take up a significant amount of the intensive care unit's (ICU) medical resources.[7] CCI patients have significant financial, psychological, and physical challenges due to the disease's severity, high mortality, and high medical expenses.[8,9]

Complex and Critical CCI patients are often treated in ICU by multidisciplinary medical staffs. Multidisciplinary team (MDT) is a team consisting of experts from related disciplines.[10] By working together to manage patients with complex conditions, MDT members develop timely, appropriate, professional, and comprehensive management plans for patients, improving clinical outcomes.[10] Although joint management based on MDT can provide higher quality medical services,[11–13] studies have shown that 80% of MDT members find it difficult to reach a consensus on the goals of care for patients with CCI, and 76% of MDT members feel that they do not work well together most of the time.[14,15] In addition to being upsetting for team members, poor MDT cooperation can also impact clinical results for CCI patients.[16]

Received: 22 November 2024
Accepted: 21 January 2025
Published: 13 February 2025

In recent years, the researches on CCI patients in China mainly focus on the macro-management of CCI patients, such as the status quo of diagnosis and treatment,[17] discharge management,[18] et al. At present, the Henan province People's Hospital has a prototype of MDT cooperation for CCI patients, but we found that there are many problems in the team cooperation. The first study aim was to understand the cooperative experiences of MDT members for CCI patients, and the second study aim was to identify the facilitating and hindering factors of MDT members in the cooperative process.

Methods

Study Design

We completed the reporting by following the Consolidated Criteria for Reporting Qualitative Research reporting guidelines.[19] Our team of administrators, researchers, and MDT members designed and conducted this descriptive qualitative design. Our team included two administrators, a head of nursing department of Henan province People's Hospital who looked for target departments for us, and a chief nurse assured the feasibility and scientificity of the research program. The researchers, including three nursing postgraduate students, were responsible for the implementation of the research program.

Setting and Sample

This research was conducted in three ICUs with a total of 75 beds in a tertiary hospital in China, which represents the second largest cohort of CCI patients in the province, so the MDT members frequently provide medical care for CCI patients. The MDT members we interviewed included doctors, nurses, respiratory therapists, rehabilitation therapists and psychotherapists, who often provided medical services to CCI patients. To investigate the collaboration process of MDT members of CCI patients, we purposefully selected study participants from these three ICUs who varied in age, sex, and clinical experience. We invited eligible MDT members to participate in the study. The inclusion criteria were as follows: 3 years or more of ICU work experience, professional titles in the Attending, Associate Chief, Chief scope. Exclusion criteria for MDT members were interns or employees undergoing additional training, individuals who have had more than three months of vacation during the last year.

Interview Guide

In order to explore the research interest of this study, we developed an interview outline based on the results of literature review and group discussion. Beginning with open-ended questions, the interview progressively focused on inquiring about particular elements those might influence MDT cooperation in CCI patients. A pilot interview was conducted with 2 MDT members of CCI patients. The interview outline was modified based on the pilot interview results (Table 1).

Data Collection

At the beginning of the interview, participants were given an interview description that explained the objectives and methods of the study. This study followed the principle of voluntary participation, participants can stop participating at any time. In addition, we guaranteed that the privacy of participants would not be compromised. Each participant signed an informed consent form prior to the interview. No physical harm was caused to the participants in this study, and no sensitive personal or commercial information was involved, so we consider this study to meet the basic principles of Declaration of Helsinki.

Table 1 Interview Guide for MDT Members of CCI Patients

1.How does your department conduct MDT cooperation for CCI patients?
2.What was your experience with MDT cooperation for CCI patients?
3.What do you think are the barriers to MDT cooperation for CCI patients?
4.What do you think are the facilitators to MDT cooperation for CCI patients?

The first author conducted the interview in the Demonstration Room of the department. Before the interview, there was no connection between the researcher and the participants, and the researcher would not be biased against the views of the participants, which ensures the objectivity and accuracy of the research results. In the course of the interviews, we encouraged participants to provide additional insights based on the research topic. All interviews were audio-recorded and transcribed verbatim. It is worth noting that we observed the interviewees' special expressions, tone of voice and emotions, such as sighing, surprise and frowning, and made special marks on the notebooks (ie, interview memorandum). Data saturation, when no new information was found during data collection, meant the interview was over. The average length of the interview was 32 minutes, with a range of 20 to 52 minutes.

Data Analysis

After every interview, the first and third authors converted the recordings to text and imported them into NVivo 11 software within 24 hours. After they transcribed the interviewer's recordings into text, the fourth author contacted the participants to obtain their views. Ensure that their statements or ideas were not distorted in order to ensure the accuracy of the transcription. If the interviewee agreed with the content of the transcript, we began the process of text analysis. If there were any inconsistencies or errors, we would make the necessary adjustments to ensure the accuracy and reliability of the text we analyzed. We analyzed the text using the thematic approach developed by Blauen and Cluck.[20] The first and third authors did the initial coding independently, and the second author followed the coding closely and consulted promptly when disagreements arose. After consultation with the fifth author, any differences in the coding process resulted in a uniform coding result. Finally, both the researchers and the participants agreed on the results of the coding.

Rigor

All researchers have received systematic training during their master's degree education and are well versed in conducting qualitative research and interview techniques. Notes and audio recorders were used during the interview to obtain accurate interview results. After the text was transcribed, the text was returned to the participant to ensure the accuracy of the transcribed text. To ensure coding quality, the authors encoded and analyzed the transcribed text after listening to the recordings several times.

Ethics

Participants in this study signed an informed consent form. Personal data of each participant were kept confidential. This study was approved by the Zhengzhou University Ethics Committee (ZZUIRB2024-91).

Results

Although 19 MDT members were invited to take part, only 15 of them made it into the final analysis (Table 2). For a variety of reasons, including scheduling conflicts (n=2), lack of interest (n=1), and reluctance to discuss this topic (n=1), four MDT members declined to take part in the study.

The interviews for this study yielded three themes and six sub-themes that explained the collaborative experience of MDT members, as well as the barriers and facilitators of MDT cooperation. The six sub-themes were essential MDT cooperation, absence of specialized MDT, the nurse's diminished role, unclear cooperation process and job responsibilities, lack of effective communication, insufficient observation and feedback, timely and effective communication, a leading role, well-developed MDT tools. Figure 1 presents the themes and subthemes. Illustrative quotes within each theme and sub-theme are provided in Table 3.

Theme 1: The Collaborative Experience of MDT Members

Within the first theme, The collaborative experience of MDT members, three sub-themes were identified: essential MDT cooperation, absence of specialized MDT and the nurse's diminished role. The interviewees thought that it was essential to carry out MDT cooperation for CCI patients and that this work could effectively improve the attention of medical staff in the department to CCI patients and improve the clinical outcomes of CCI patients.

Table 2 Participants' Characteristic, n=15

Demographic	Value, n(%)
Genders	
Female	8(53%)
Male	7(47%)
Age	
25–35	9(60%)
36–45	6(40%)
Highest education level	
Bachelor's degree	7(47%)
Master's degree	7(47%)
Doctor's degree	1(6%)
Time since work	
3–5 years	5(33%)
6–10 years	4(27%)
11–15 years	3(20%)
16–20 years	3(20%)
Professional titles	
Attending	3(20%)
Associate Chief	8(53%)
Chief	4(27%)

N4: Before the department chair led a slow MDT cooperation for these patients within the department, I had no idea what CCI patients were, and now we realize that healthcare professionals can improve their clinical outcomes by paying more attention to and helping them.

N7: As a team, we work together to solve problems, particularly when a CCI patient's condition changes in a complex way. We have challenging and complex discussions together, and when we finally come up with a workable solution for the patient, we all feel a unique sense of accomplishment.

Respondents stated that the MDT cooperation currently conducted centered on CCI patients is more oriented towards multidisciplinary communication, which shows up as communication between two or more members of the disciplines when a difficult problem arises in a CCI patient, rather than a fixed MDT focused on the CCI patient to solve the problem that arises in him or her. This is because no specific MDT for CCI patients was formed.

N1: The creation of a hospice specialty group has a more established makeup than the diverse teamwork that our department now has focused on patients with CCI.

N12: We do not currently have regular MDT members, and I still usually confer with a colleague I know well when a CCI patient appears with a problem that I can not handle.

The third sub-theme was the nurse's diminished role. The systematic evaluation of these patients by an MDT of CCI patients and their early intervention are crucial for maintaining patient safety because of the recurrent nature of their conditions, the critical nature of their diseases, the variety of their presentations, the difficulty of their treatment, and the length of their illnesses. Meanwhile, as the primary caretakers for CCI patients, this study discovered that the involvement of ICU nurses was noticeably inadequate.

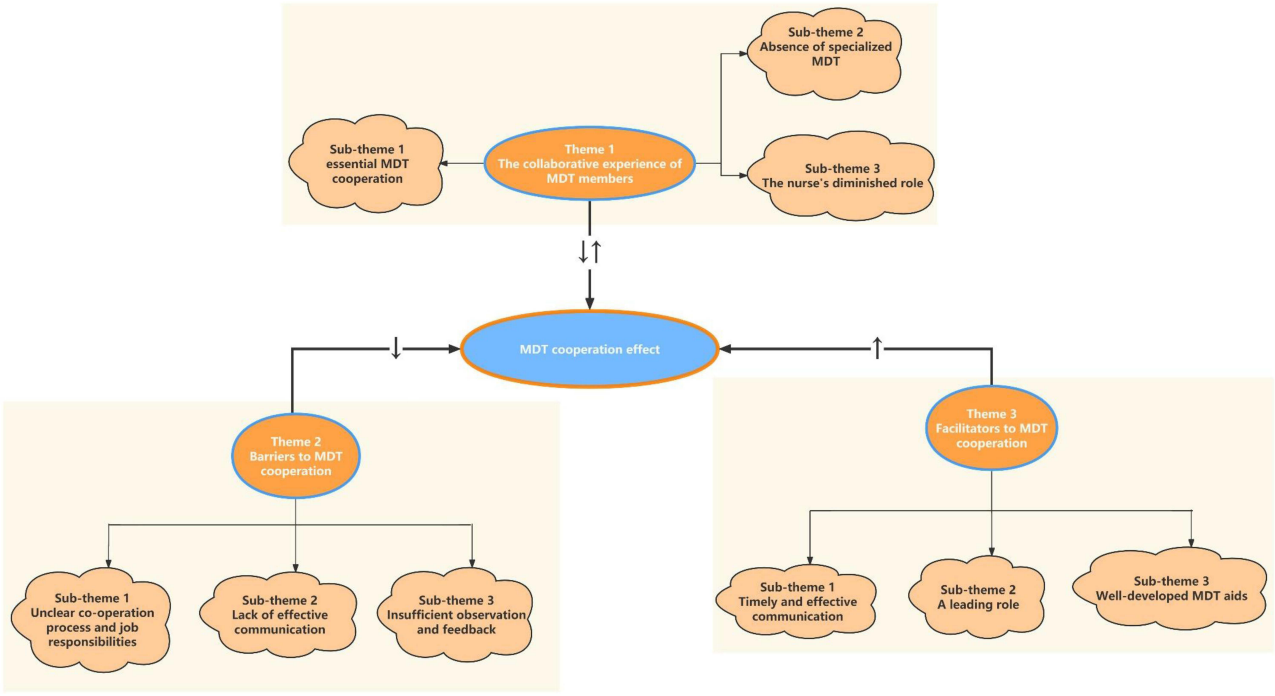

Figure 1 Summary of themes and sub-themes.

N4: The majority of the remarks made by nurses during discussions about a patient's condition are sometimes overlooked by other multidisciplinary members.

N6: Sometimes we say something and they do not hear it because they are so preoccupied with work.

N5: We suggested doing something for CCI patients, but the doctors in charge disregarded it and it was more challenging to execute. Gradually, we shifted to a more listener and implementer role.

Table 3 Themes and Sub-Themes of the Study

Themes and Sub-Themes	Number of Interviews (n =15)	Representative Quotes
Theme 1: The collaborative experience of MDT members		
Sub-theme 1: essential MDT cooperation	15(100%)	"We have challenging and complex discussions together, and when we finally come up with a workable solution for the patient, we all feel a unique sense of accomplishment"
Sub-theme 2: absence of specialized MDT	13(87%)	"We do not currently have regular MDT"
Sub-theme 3: the nurse's diminished role	4(27%)	"Sometimes we say something and they do not hear it"
Theme 2: Barriers to MDT cooperation		
Sub-theme 1: unclear cooperation process and job responsibilities	13(87%)	"Even though we work as a team, the precise procedure is unclear" "Sometimes, CCI patients have specific issues and are unsure of who to call—should they see a nurse or a rehab therapist?"

(*Continued*)

https://doi.org/10.2147/JMDH.S505022

Table 3 (Continued).

Themes and Sub-Themes	Number of Interviews (n =15)	Representative Quotes
Sub-theme 2: lack of effective communication	15(100%)	"I wish there is a better platform or avenue for communication"
Sub-theme 3: insufficient observation and feedback	12(80%)	"we no longer have to check back to see if we are doing a good job or not"
Theme 3: Facilitators to MDT cooperation		
Sub-theme 1: timely and effective communication	15(100%)	"It will benefit the CCI patients and the team members since everyone appreciates the patient's condition, can swiftly discuss methods in one piece…"
Sub-theme 2: a leading role	14(93%)	"I hope there is a leader in this team who we can consult when we can't decide or our opinions are not harmonized"
Sub-theme 3: well-developed MDT tools	13(87%)	"Teamwork is afraid that everyone will not take responsibility. If there is a record sheet…it may not be the case that people should do things that are not done"

Theme 2: Barriers to MDT Cooperation

Within the second theme, barriers to MDT cooperation, three sub-themes were identified: unclear cooperation process and job responsibilities, lack of effective communication, and insufficient observation and feedback. The interviewees indicated that the MDT members for CCI patients were involved in different majors, and if the division of work responsibilities was not clear, the problems would not be dealt with in time or even left unattended, affect the quality and efficiency of cooperation. Most of the interviewees also had high expectations for the clear MDT cooperation process for CCI patients.

> N9: Even though we work as a team, the precise procedure is unclear, and there are no regulations governing what respiratory therapists are allowed to perform or are required to do.

> N8: We have to rush to the doctor to prescribe a drug or whatever for the patient because of rules and regulations, which is really uncomfortable for us. Not only will the patient's family not trust us, but the MDT cooperation will also be impacted.

> N12: The MDT cooperation process design for CCI patients has to be enhanced. Sometimes, CCI patients have specific issues and are unsure of who to call—should they see a nurse or a rehab therapist?

According to the interviewees, the MDT for CCI patients lacked suitable communication channels for interactions. Additionally, even though members of the MDT for CCI patients were able to make decisions together most of the time, if the problems were not thoroughly investigated or if there was no professional to coordinate, it was easy to create conflicting opinions among the team members and difficult to come to a consensus as a group, which hindered the effective implementation of cooperation.

> N14: I wish there is a better platform or avenue for communication. Or someone in charge of initiating group discussions; often, the doctor and the therapist can not find each other because of their busy schedules.

> N3: We all have different majors and perspectives, and when we communicate, we probably all have predetermined notions about what is happening, but other than that, everyone is quite kind.

> N13: Doctors believe that patients with high levels of stress can be medicated, but rehab therapists may be more self-assured due to the manipulation, and they believe that rehabilitation is OK, so why is medication necessary?

N10: When we find a doctor who is unwilling to listen to others and who is not particularly amenable to certain psychotherapy practices, we often deal with him as he sees fit.

According to the majority of interviewees, the MDT for CCI patients did not currently have any members who monitored the effectiveness of the intervention strategies developed by the team members, their implementation progress, or the need for modifications. This had an adverse impact on the effectiveness of MDT cooperation for CCI patients.

N11: The majority of us CCI patients have a MDT group conversation, create a more agreeable treatment plan, and then we individually complete our own chores. That is pretty much it, and we no longer have to check back to see if we are doing a good job or not.

N15: I think it is good when people push one other a little, but bringing up other people's issues might sometimes make them uncomfortable.

N5: I can not completely consider whether or not the CCI patient's additional care strategies are being carried out as planned because everyone is so busy with their work hours and we do not only care for this one patient. It could be a bit more successful if someone could remind them.

Theme 3: Facilitators to MDT Cooperation

Within the third theme, Facilitators to MDT cooperation, three sub-themes were identified: timely and effective communication, a leading role, well-developed MDT tools. The majority of respondents concurred that MDT members for CCI patients may resolve issues that arise during cooperation by coordinating and communicating, but this must be done quickly and efficiently.

N2: It will benefit the CCI patient and the team members since everyone appreciates the patient's condition, can swiftly discuss methods in one piece, and actively expresses viewpoints from various disciplines to develop a suitable treatment plan.

N8: We are all working together to talk about treatment options for patients with CCI, which must be beneficial for the patients. The problem is that our communication is so bad right now that some people do not cooperate to participate at all, and even if they do, they do not make much of a statement.

The MDT for CCI patients requires a coordinator and leader, according to the respondents. This person should have strong clinical experience, critical care expertise, and strong team management abilities. He or she should also be able to take the initiative to organize team members to foster cooperation and communication.

N14: It appears that the team needs someone with the leadership abilities to serve as a coordinator, who can effectively manage and deploy team members, and who can communicate and coordinate with members of different disciplines.

N1: I hope there is a leader in this team who we can consult when we can't decide or our opinions are not harmonized.

The majority of interviewees stated that well-developed MDT tools for MDT cooperation, like communication charts, patient files, and fixed discussion places, could help MDT members quickly comprehend patient information and encourage them to effectively discuss the condition of the CCI patient and develop a diagnosis and treatment plan.

N6: The majority of our conversations take place at the patient's bedside, and the condition of the CCI patient is more serious. The crowd will also exacerbate the changes in the patient's condition. If a small office space becomes our regular meeting spot, we will once more search for the right location and the right people, and it will not have an impact on the patient's condition or psychological state.

N2: Teamwork is afraid that everyone will not take responsibility. If there is a record sheet, you can record the topic of the discussion, who participated, when they participated, what the outcome of the discussion was, and who should do what next. Because of this, it may not be the case that people should do things that are not done.

Discussion

This study findings are consistent with most studies,[21–23] pointing out that the barriers to MDT cooperation included unclear cooperation process and job responsibilities, and lack of effective communication. Edwards et al convened an expert meeting to create a continuity strategies for pediatric intensive-care unit (PICU) patients who have been hospitalized for an extended period of time.[24] From the five focus areas of the continuity strategy: eligibility criteria, initialization, standard responsibilities, implementation requirements and maintenance requirements, 17 consensus statements were generated.[24] Consensus statements based on evidence offer PICUs new guidelines for operationalizing, implementing, and maintaining continuity strategies. These statements can also serve as scientific references for MDT cooperation in patients with CCI. To find out how inpatient team communication practices meet the needs of teams caring for CCI patients and their families, Hirschfeld et al carried out a mixed methods survey.[15] When compared to children who had brief hospital stays, they discovered that almost half (40%) of the team believed that team conflict happened more frequently when caring for CCI children, and many felt unprepared to handle these conflicts. The results of their interview pointed out that dysfunctional team cooperation and inadequate communication skills were the main reasons leading to intra-team conflict. Miles et al found that suffering and elusive goals of care are the experience of PICU clinicians caring for children with CCI, and they pointed out that interventions directed at increasing team consensus and improving communication may help to ameliorate these distress.[23] This study also found that the lack of timely monitoring and feedback is also one of the obstacles to the MDT cooperation of CCI patients, which is a novel viewpoint obtained in this study, suggesting that managers need to develop a complete monitoring mechanism and develop effective evaluation tools and indicators to improve cooperation efficiency.

Our study indicates that a leader is a contributing factor to MDT cooperation in CCI patients, and Hirschfeld et al also found that no designated longitudinal clinical leaders were one of the main cause of poor cooperation experience.[15] A leader in a MDT has the ability to synthesize the views of MDT members and can facilitate consensus by initiating MDT meetings. In addition, the leader focus on the overall care goal and care plan for CCI patients, the long-term longitudinal relationships between the leader and patients, can improve continuity of care interrupted by shift time constraints.[25] Madrigal et al described the development and evaluation of a continuity-enhancing intervention.[26] Early continuity attending assignment and standardization of the continuity role to guarantee a consistent team were part of the intervention, which serves as a guide for enhancing MDT cooperation among CCI patients. Interviewers pointed out that effective MDT cooperation tools are essential for enabling successful MDT cooperation for CCI patients and that administrators require space and equipment to support their involvement in the practice of true MDT cooperation for CCI patients.

MDT cooperation is recognized as an effective model of disease management because of its highly differentiated and integrated problem-solving model, which can improve the level of comprehensive diagnosis and treatment of disease and patients' satisfaction with medical service.[10,27] Since China's research on CCI patients is still in its early stages, MDT cooperation primarily takes the form of multidisciplinary communication. MDT cooperation takes many different forms in foreign nations, including MDT meetings (MDTMs), case management model, as well as intensivist-directed multi-professional team model.[28–30] MDTMs and case management model are common forms of MDT cooperation. The MDTMs generally consist of doctors, nurse specialists, rehabilitation therapists, respiratory therapists, psychotherapists, and administrators, also known as MDT coordinators.[31] Presenting cases, exchanging and reviewing information, and discussing and documenting care management are all done at the MDTM. MDTMs usually take place every week or every two weeks and can go on for several hours, discussing up to fifty cases on average. Conducting regular MDTMs requires significant investment of time and finances, and bringing together all the experts at the same time, can be a challenge in conducting MDTM.[32] A collaborative process, the case management model encompasses assessment, planning, implementation, coordination, monitoring, and evaluation.[33] It is case-centred, with case managers coordinating and integrating the views of various professionals, ensure that patients in the right time, place, access to high-quality, low-cost medical services.[34] Combined with the MDT cooperation experience of CCI patients in this study and the cost of MDT cooperation, it is possible that the case management model is the direction of MDT cooperation of CCI patients.

In the future, we need to develop a special MDT cooperation program for CCI patients to improve the quality of medical services for CCI patients, and further test the MDT member's cooperation experience.

Limitations

There are two limitations on this study. However, given the specificity of qualitative research and the consensus of the entire team that the data were saturated, we felt that the sample size of this study was sufficient to meet our objectives. Second, the data in this study came from a single hospital, which may have limited the scope of application of our findings. Nevertheless, we believe that the data from this study can reflect the views of a considerable proportion of MDT members in patients with CCI.

Conclusions

This study explores and describes the collaborative experience of MDT members in CCI patients, as well as barriers and facilitators of MDT cooperation for CCI patients from the perspective of MDT members. We find that the creation of MDT cooperation for CCI patients may, in part, boost healthcare professionals' attention to the CCI patient population. However, due to the lack of specialized MDT for CCI patients, unclear team cooperation process and work responsibilities, and the imperfect communication and monitoring mechanism among MDT members, it is difficult for the MDT members to reach a consensus on the diagnosis and treatment strategy of CCI patients. MDT cooperation focused on CCI patients is still in its infancy, who developed MDT cooperation in the form of multi-disciplinary exchanges. A practical and successful MDT cooperation program for managing CCI patients could be designed with a better understanding of the collaborative experience of MDT members in CCI patients. Future studies should develop and implement a scientific and feasible MDT cooperation program for CCI patients under the guidance of appropriate MDT cooperation model, so as to improve the cooperation experience of MDT members of CCI patients, and further improve the quality of medical care for CCI patients.

Disclosure

The authors declare no competing interests in this work.

References

1. Girard K, Raffin TA. The chronically critically ill: to save or let die? *Respir Care*. 1985;30(5):339–347.
2. Ohbe H, Matsui H, Fushimi K, et al. Epidemiology of Chronic Critical Illness in Japan: a Nationwide Inpatient Database Study. *Crit Care Med*. 2021;49(1):70–78. doi:10.1097/CCM.0000000000004723
3. Kahn JM, Le T, Angus DC, et al. The epidemiology of chronic critical illness in the United States. *Crit Care Med*. 2015;43(2):282–287. doi:10.1097/CCM.0000000000000710
4. Roedl K, Jarczak D, Boenisch O, et al. Chronic Critical Illness in Patients with COVID-19: characteristics and Outcome of Prolonged Intensive Care Therapy. *J Clin Med*. 2022;11(4):1049. doi:10.3390/jcm11041049
5. Hawkins RB, Stortz JA, Holden DC, et al. Persistently increased cell-free DNA concentrations only modestly contribute to outcome and host response in sepsis survivors with chronic critical illness. *Surgery*. 2020;167(3):646–652. doi:10.1016/j.surg.2019.11.018
6. Donahoe MP. Current venues of care and related costs for the chronically critically ill. *Respir Care*. 2012;57(6):867–886,886–888. doi:10.4187/respcare.01656
7. Iwashyna TJ, Hodgson CL, Pilcher D, et al. Timing of onset and burden of persistent critical illness in Australia and New Zealand: a retrospective, population-based, observational study. *Lancet Respir Med*. 2016;4(7):566–573. doi:10.1016/S2213-2600(16)30098-4
8. Polcz VE, Barrios EL, Larson SD, et al. Charting the course for improved outcomes in chronic critical illness: therapeutic strategies for persistent inflammation, immunosuppression, and catabolism syndrome (PICS). *Br J Anaesth*. 2024;133(2):260–263. doi:10.1016/j.bja.2024.05.005
9. Andersen SK, Yang Y, Kross EK, et al. Achieving Goals of Care Decisions in Chronic Critical Illness: a Multi-Institutional Qualitative Study. *Chest*. 2024;166(1):107–117. doi:10.1016/j.chest.2024.02.015
10. Marques P, Sagarribay A, Tortosa F, et al. Multidisciplinary Team Care in Pituitary Tumours. *Cancers*. 2024;16(5):950. doi:10.3390/cancers16050950
11. Hansen D, Jørgensen HS, Andersen TL, et al. *Multidisciplinary Team Approach for CKD-Associated Osteoporosis*. Nephrol Dial Transplant. 2024.
12. Polomeni A, Bordessoule D, Malak S. Multidisciplinary team meetings in Hematology: a national mixed-methods study. *BMC Cancer*. 2023;23(1):950. doi:10.1186/s12885-023-11431-y
13. Banna GL, Naidoo J, Addeo A. From expert recommendations to multidisciplinary team decisions: a way to set out the novel perioperative options for patients with non-small-cell lung cancer. *Transl Lung Cancer Res*. 2022;11(7):1237–1240. doi:10.21037/tlcr-22-517
14. Liu Z, Yao J, Zhuang Y. Research progress of interprofessional teamwork in critical care. *Nurs Res*. 2021;35(03):446–450.
15. Hirschfeld RS, Barone S, Johnson E, et al. Pediatric Chronic Critical Illness: gaps in Inpatient Intrateam Communication. *Pediatr Crit Care Med*. 2019;20(12):e546–e555. doi:10.1097/PCC.0000000000002150

16. Sokos G, Kido K, Panjrath G, et al. Multidisciplinary Care in Heart Failure Services. *J Card Fail*. 2023;29(6):943–958. doi:10.1016/j.cardfail.2023.02.011
17. Cheng Y, Cheng X. Investigation report on diagnosis and treatment of chronic critical illness in 12 provinces of China. *Chin J Pract Internal Med*. 2024;44(09):745–751.
18. Liu Y, Yodewon, Xu L. An extensive expert consensus on the clinical practice of discharge management of chronic critically ill patients (2024 edition). *Chin J Pract Internal Med*. 2024;44(09):705–729.
19. Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *Int J Qual Health Care*. 2007;19(6):349–357. doi:10.1093/intqhc/mzm042
20. Kiger ME, Varpio L. Thematic analysis of qualitative data: AMEE Guide No. 131. *Med Teach*. 2020;42(8):846–854. doi:10.1080/0142159X.2020.1755030
21. Istanboulian L, Dale C, Terblanche E, et al. Clinician-perceived barriers and facilitators for the provision of actionable processes of care important for persistent or chronic critical illness. *J Adv Nurs*. 2024;80(4):1619–1629. doi:10.1111/jan.15924
22. Allum L, Terblanche E, Pattison N, et al. Clinician views on actionable processes of care for prolonged stay intensive care patients and families: a descriptive qualitative study. *Intensive Crit Care Nurs*. 2024;80:103535. doi:10.1016/j.iccn.2023.103535
23. Miles AH, Rushton CH, Wise BM, et al. Pediatric Chronic Critical Illness, Prolonged ICU Admissions, and Clinician Distress. *J Pediatr Intensive Care*. 2022;11(4):275–281. doi:10.1055/s-0041-1724098
24. Edwards JD, Wocial LD, Madrigal VN, et al. Continuity Strategies for Long-Stay PICU Patients: consensus Statements From the Lucile Packard Foundation PICU Continuity Panel. *Pediatr Crit Care Med*. 2023;24(10):849–861. doi:10.1097/PCC.0000000000003308
25. Murphy SS, Graham RJ. Chronic Illness in Pediatric Critical Care. *Front Pediatr*. 2021;9:686206. doi:10.3389/fped.2021.686206
26. Madrigal V, Walter JK, Sachs E, et al. Pediatric continuity care intensivist: a randomized controlled trial. *Contemp Clin Trials*. 2019;76:72–78. doi:10.1016/j.cct.2018.11.011
27. Wang X, Zhang C, Jie M. A qualitative study on the collaborative nature of multidisciplinary diagnostic and treatment team for early activity in ICU patients with invasive mechanical ventilation. *PLA Nursing J*. 2021;35(19):3430–3433.
28. America CMSO. *Standards of Practice for Case Management*. America: Case Management Society of America; 2022.
29. Zhou L, Zhang L. The enlightenment of multi-disciplinary structured ward round abroad to the reform of Ward round in our country. *Med Philosophy*. 2019;40(22):27–29,50.
30. Fu W, Zhuang Y. Progress of research on factors influencing interprofessional cooperation and intervention among ICU nurses. *Chin J Acute Critical Nursing*. 2022;3(2):168–172.
31. Winters DA, Soukup T, Sevdalis N, et al. The cancer multidisciplinary team meeting: in need of change? History, challenges and future perspectives. *BJU Int*. 2021;128(3):271–279. doi:10.1111/bju.15495
32. Pillay B, Wootten AC, Crowe H, et al. The impact of multidisciplinary team meetings on patient assessment, management and outcomes in oncology settings: a systematic review of the literature. *Cancer Treat Rev*. 2016;42:56–72. doi:10.1016/j.ctrv.2015.11.007
33. Sadler E, Khadjesari Z, Ziemann A, et al. Case management for integrated care of older people with frailty in community settings. *Cochrane Database Syst Rev*. 2023;5(5):CD13088.
34. Hung YH, Wang WF, Chang MC, et al. Case Management-based Collaborative Care Model Associated with improvement in neuropsychiatric outcomes in community-dwelling people living with dementia. *BMC Geriatr*. 2023;23(1):339. doi:10.1186/s12877-023-04024-8