Exploring clinical decision-making among the uro-oncology multidisciplinary team: a qualitative study.

ASKELIN, B., HIND, A. and PATERSON, C.

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Supplementary materials are appended after the main text of this document.

Exploring Clinical Decision-Making among the Uro-oncology Multidisciplinary Team: A Qualitative Study

Blake Askelin[a], Alicia Hind[b], Catherine Paterson[c,*]

[a] *Faculty of Health, and School of Nursing, Midwifery and Public Health, University of Canberra, Bruce ACT, Australia.*
[b] *Faculty of Health; Prehabilitation, Activity, Cancer, Exercise and Survivorship (PACES) Research Group; and School of Nursing, Midwifery and Public Health, University of Canberra, Bruce ACT, Australia*
[c] *Faculty of Health; Prehabilitation, Activity, Cancer, Exercise and Survivorship (PACES) Research Group; Professor, School of Nursing, Midwifery and Public Health, University of Canberra, Bruce ACT, Australia; Canberra Health Services & ACT Health, SYNERGY Nursing & Midwifery Research Centre, Canberra Hospital, Australia; and Robert Gordon University, Aberdeen, Scotland, UK*

** Address correspondence to: Catherine Paterson, School of Nursing, Midwifery and Public Health, University of Canberra, 1 Broula Street Corner Broula and, Allawoona St, Bruce, ACT 2617.*
E-mail address: catherine.paterson@canberra.edu.au (C. Paterson).

A B S T R A C T

Objective: The aim of this qualitative study was to understand the clinical decision-making process among the genitourinary oncology (GU) multidisciplinary team (MDT) and how patients are engaged in the process. *Data Sources:* A qualitative descriptive study design was conducted and has been reported according to the Consolidated Criteria for Reporting Qualitative Studies (COREQ). Members of the GU MDT were recruited from a metropolitan tertiary hospital and cancer regional center in Australia serving a population of 550,000. Semistructured interviews were conducted, and the audiorecordings were transcribed; an inductive the- matic analysis was used to provide insight from multiple perspectives.
Conclusion: Three themes emerged: (1) the role and scope of the uro-oncology MDT, (2) lack of person-cen- tered clinical decision-making, and (3) the barriers and facilitators. Amid the COVID-19 pandemic, the MDT discussions transitioned to virtual application, which was found to be convenient and efficient and improved attendance. The GU cancer MDT had a prominent biomedical focus that lacked person-centered considera- tions. Additional research is needed to explore how person-centered outcomes can be incorporated into the clinical decision-making process.
Implication for Nursing Practice: The GU MDT is increasingly important in the care of uro-oncology patients. There appears to be barriers to the implementation of person-centered discussions in the MDT. The effective delivery of multidisciplinary care is contingent on an appropriate mechanism for collaborative communica- tion between all MDT members and patients given the limited involvement of the patient in the MDT itself.

Key Words:
Board meeting; Cancer care genitourinary; Multidisciplinary; Person-centered care; Patient referral virtual discussion

Introduction

Multidisciplinary team (MDT) meetings are a mandatory and central part of cancer services globally. Cancer MDT meetings are generally held on a weekly basis and are considered the gold standard for cancer care.[1] Although not always obligatory, MDTs are widely implemented internationally but with varying uptake of patient referrals from clinicians.[2] The fundamental aim of cancer MDT meetings are to improve individual patient treatment outcomes through discussions held by cancer health care professionals representative of nurses, radiation oncologists, medical oncologists, surgeons, pathologists, and radiologists.[3] Timely discussions between MDT clinical experts serves the purpose to deliberate on all clinical treatment options and to develop personalized evidence-informed care recommendations that consider each individual patient's preferences and needs.[2]

Internationally, cancer MDT meetings are held with all common tumor streams as a health care professional alliance guided by their willingness to agree on evidence-based clinical decisions and to coordinate the delivery of care throughout the cancer trajectory and support patients to take an active role.[4] Research studies have shown that given the specialties of cancer MTDs,[5-7] each tumor-specific MDT will have their own barriers and facilitators that affect patient outcomes.[2] There is also disparity globally as to whether patients are viewed as part of the MDT or even invited to attend the MDT meeting.

The uro-oncology MDT aims to optimize the clinical management of penile, bladder, prostate, testicular, and kidney cancer.[8] However, evidence has underscored that within the specialty of uro-oncology,[2] not all patients are reviewed by an MDT, with a distinct lack of patient engagement in the process. Research has shown that when patients are discussed in the MDT meeting, it increases the opportunity for patients to consider taking part in clinical trials; often patients experience changes to management plans from those initially advised to them by their individual treating clinician.[9-11] Consequently, a significant number of patients affected by GU cancers may receive suboptimal clinical management due to not having access to a timely MDT clinical review and not receiving MDT-informed changes to clinical management.[2] This is a very important area for future research to understand the complexities (such as public and private hospital settings) and the decision-making process of clinicians who do not refer their patients for an MDT meeting discussion and, importantly, why other patients are referred.

Decision-making is a fundamental process of choosing between alternatives[12] to information that is gathered, interpreted, and evaluated in order to select an evidence-based choice of action in health care.[13] The cognitive continuum theory[14,15] is a decision-making theory that has be widely applied in different health care professional groups,[16] including cancer.[17] The importance of clinical decision- making processes among the uro-oncology MDT members is central; cancer care and treatments are constantly being challenged due to complex and multimodality therapy,[18] and newer, broader emergent considerations, such as geriatric oncology,[19] genetic counseling, and addressing unmet survivorship care issues in uro-oncology,[20-24] are currently not being addressed within existing MDT GU cancer services. There is a lack of understanding on how patients are engaged in the MDT discussion to address their individual care needs and preferences for treatment,[2] taking into consideration quality of life considerations (urinary, bowel, sexual function, social situation) and the psychosocial impact of cancer. Therefore, the aim of this qualitative study was to understand the clinical decision-making process among the uro-oncology MDT and how patients are engaged in the process.

Methods

Study Design

A qualitative descriptive study design[25] was chosen to gain insight into GU MDT health care professionals' clinical decision-making experiences. Qualitative descriptive design was considered appropriate for an in-depth examination, through semistructured individual interviews.[26] The study has been reported according to the consolidated criteria for reporting qualitative studies (COREQ) 32-item checklist (see Supplementary Table 1 for a completed checklist).[27]

Setting

The setting was a metropolitan tertiary acute hospital with 600 beds complemented by a 140-bed rehabilitation hospital and a regional cancer hospital serving a population of about 550,000. Purposive sampling was used for this project, and targeted recruiting occurred by emailing all of the cancer regional center uro-oncology MDT members. The uro-oncology MDT included a total of 65 staff from private and public health serv- ices, representative of nurses, radiation oncologists, medical oncologists, surgeons, pathologists, and radiologists.

Eligibility Criteria

Participants were included in this study if they were members of the uro-oncology MDT irrespective of health care discipline, qualifications, length of experience, and whether they were employed across private or public hospitals. All participants were required to provide their written and verbal informed consent.

Recruitment

Following the university's Human Research Ethics Committee (HREC) Ethical Approval (Project ID 11535), a letter of invitation and a participant information and consent form were emailed to all of the clinicians involved in the uro-oncology MDT. The MDT chair also invited one of the authors to join the uro-oncology MDT meeting virtually to talk about the research project to assist with recruitment. Written informed consent was received from all participants prior to each interview, and verbal consent was confirmed at the beginning of each interview prior to start of the recording. Participants could withdraw from the study at any time without stating a reason.

Sample Size

The study sought to recruit representation from all health disciplines involved in the uro-oncology MDT discussion to ensure that all experiences of clinical decision-making could be captured across private and public care decisions.

Data Collection

Semistructured interviews were used to gain insight into the perspectives and experiences of clinicians involved in uro-oncology MDT board meetings. To cater to the ongoing real-world time constraints and clinicians' schedules all interviewing occurred virtually using Microsoft Teams due to the ongoing COVID-19 pandemic[28] at the time of conducting this study. The participants were interviewed by a male registered nurse who asked open-ended questions following an interview topic guide, which enabled the researcher to explore the participants' thoughts, beliefs, and experiences (Table 1). Each interview with a participant was audio/video recorded and transcribed using Microsoft Teams and quality checked for accuracy. The audio/video recordings of the interviews were approximately 20 to 30 minutes in length. Field notes were taken during and after each interview. The interviewer conducted several preparatory interviews and received mentoring and feedback from other members of the research team who had previous training and experience in conducting qualitative research. Discussions were fluid, and participants were encouraged to share their experiences beyond the established questions and probes. The interview topic guide was developed using the findings from a systematic review in the topic area.[2]

Theoretical Model

This research project used the cognitive continuum theoretical model of clinical decision-making (Fig. 1). Cognitive continuum theory (CCT) is a model of decision-making and judgment used to align the clinical decision-making processes of health care teams and to improve interprofessional practices.[16] CCT combines analytical and intuitive theories and focuses on clinical decision-making and judgment. CCT incorporates two continuums, cognition (intuition and analysis) and judgment (task structure), and incorporates six dimensions identified as "modes of inquiry." CCT implies that when a task is poorly structured, the decision making is based in intuition, whereas when the task is well structured, the decision-making is based in analysis. The application of CCT in health care practice has shown potential to strengthen interprofessional clinical decision-making in individuals and teams and therefore was a suitable model for this current study.

Analysis

Each interview with participants was transcribed in real time with use of the Microsoft Teams software; all transcriptions and audio recordings were reviewed multiple times, and all transcription errors were adjusted manually by the interviewer. After review and adjustments, each transcript was returned to each participant via email for their comment and participant review. Braun and Clark's six-step thematic analytic approach[29] was used (Table 2). Each transcript was read and then re-read multiple times, to ensure familiarity with the data.

TABLE 1
Overview of Interview Topic Guide.

Semistructured interview topic guide
• Can you please start by telling me about your title? How long have you worked in this role? How long have you been involved in uro-oncology? What is you highest qualification?
General
How often do you contribute to uro-oncology MDT reviews?
How frequently does the MDT meet?
Which clinician chairs the MDT meeting? Are other clinicians given opportunities to chair the GU MDT meetings?
Are you able to tell me how many clinicians are generally involved in the GU MDT?
Are you able to tell me their roles?
Do you contribute to GU MDT meetings across various settings? ie, public and / or private settings?
Probe (if works across private)
Are you able to explain any differences between the functioning of public and private uro-oncology MDT reviews? Can you give an example?
Can you explain the differences in support that the MDT receives in public and private settings? Can you give an example?
MDT functioning
How much time does the MDT usually have to review cases?
On average, how long does the MDT have to discuss each patient? Can you tell me more?
Is the time allocated for the MDT discussions protected? Can you share your experiences?
What do you think about the time allocated for patients to be discussed within the MDTs? Do you think the time allocated to discuss patients is adequate?
When do patients not receive MDT discussions? What is the reasoning?
What do you think are the key issues that impact the functioning of the GU MDT?
What are the challenges within the GU MDT? Can you give an example?
What are the facilitators of the GU MDT? Can you give an example?
How has the GU MDT been impacted by COVID-19?
MDT participation
Can you explain if patients are given the opportunity to attend MDT reviews? Please share your thoughts about the clinical impact?
Are patients able to ask to be reviewed the GU MDT?
How are patients notified of the MDT discussion?
Regarding the GU MDT, do you think patients have opportunities to contribute and be active members in their care? What are the benefits and drawbacks?
How are each patients' views, preferences and person-centered needs incorporated in MDT reviews?
Are all members of the MDT given the opportunity to contribute their input to the MDT? If not, why not?
MDT guidelines
Are you aware of any guidelines that the GU MDT applies for patient referrals and treatment? If so, which guideline(s)?
Can you tell me whether the MDT applies a particular set of guidelines for each type of GU cancer? If so, can you tell me which guidelines and explain why they are used?
Does the MDT consider all the available clinical guidelines to determine treatment or management?
MDT referral
Can you explain how and why patients are referred or, not, to an MDT review? Can you provide examples in prostate? Bladder? Kidney? Penile? Testicular cancers?
Are any resources/tools used to determine whether a patient receives and MDT review or not?
What is the minimum amount of information required to perform an MDT review?
Can you explain how a patient's clinical complexity and psychosocial issues are determined amongst consumers? If not, why not? Please expand?
How are consumers provided with opportunities to be involved in their care?
How are consumers with "clinical complexity" or "psychosocial issues" provided with the opportunities to be involved in their care? Please provide clinical examples?
Do you think the consumers with clinical complexity or if they have psychosocial issues are subject to more case reviews? Or less? Can you expand and provide clinical examples?
MDT clinical decision-making
Is any of the clinical decision-making shared? How is the final decision for the patient's clinical outcome of the MDT achieved? Can you tell me who has the overall responsibility?
Are any tools (such as flow charts, risk calculators or resources) other than the clinical guidelines used to inform clinical decision-making?
Are you able to tell me about the challenges or issues that impact your clinical decision-making?
Are you able to tell me about the facilitators that impact your clinical decision-making?
Lastly, are you able to share your experiences regarding the auditing of the MDT? Has any auditing occurred?
Thank you for your time today, before finishing up is there anything you wanted to add or comment further on?

Initial ideas and coding were undertaken by the interviewer and then reviewed and explored among all members of the research team. Each theme was identified during the project, derived from data analysis and field notes taken, and stored on a computer file on the university's secure online database to capture initial impressions, thoughts, and early interpretations of the data.

To ensure rigor, the research team considered the concepts of credibility, transferability, dependability, and confirmability as identified by Lincoln and Guba.[30] The interviewer ensured credibility by the audio recordings, noting thoughts, and taking notes on reflective impressions immediately during and after each data collection. Findings were also presented back to the health service with opportunity for discussion. Transferability was addressed by providing a clear description of the setting and sample. Dependability in the project findings was addressed from the audit trail through the research notes used in the decision-making process. Confirmability was ensured through clarification with open questions and repetitive questioning throughout the data collection, the reflective process after each data collection, to aid data interpretation and verification. Trustworthiness is further supported using direct quotations, to show the connection between the data and results for the reader to interpret themselves. All quotations are provided verbatim with no identifiable information to protect confidentiality.

Data Protection and Confidentiality

All paper or electronic files were kept secure on a password-protected university secure server. Data were anonymized for privacy and confidentiality reasons and stored for a maximum of 10 years.

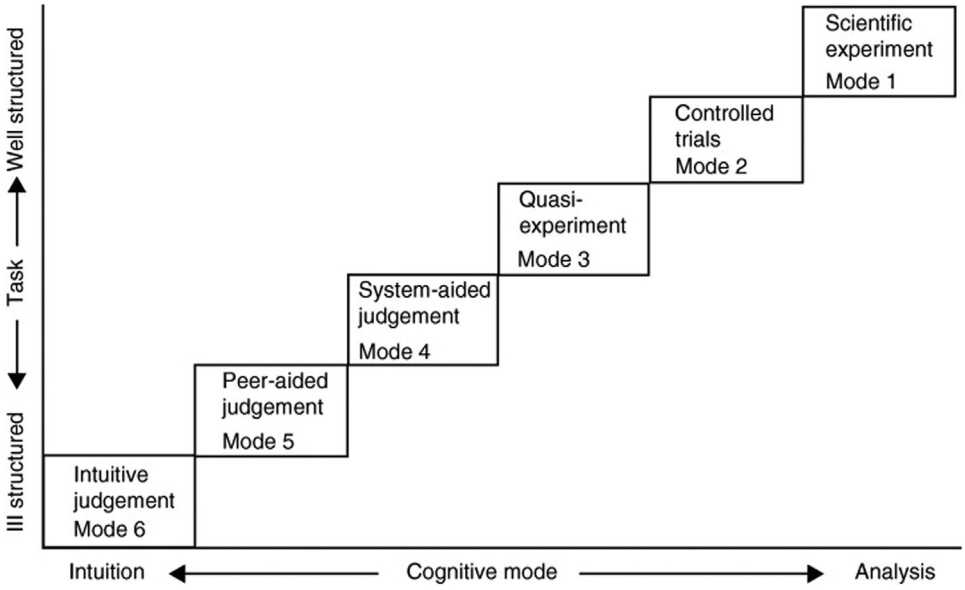

FIG. 1. Theoretical model.[14,15]

Findings

A total of five participants consented to the study representative of radiation oncology, medical oncology, and specialist nurses; see Table 3 for participant characteristics. Participant response for the project was lower than expected despite optimization of all recruitment strategies. The ongoing COVID-19 pandemic and subsequent challenges of staffing were problematic for cancer services and likely affected recruitment. No participants withdrew consent, and there were no direct refusals to participate in the project. More than 225 minutes of audio recording were collected, for approximately 70 pages of transcription.

Based on the perspectives of clinicians working within uro-onco ogy MDTs, three themes emerged: (1) the role and scope of the MDT, (2) lack of person-centered clinical decision-making, and (3) barriers and facilitators of the MDT.

Theme 1: The Role and Scope of the MDT

The uro-oncology MDT discussions were carried out weekly at 7 a.m. each Thursday morning. The discussions were generally 1 hour in length and were capped to discuss a total of only 10 uro-oncology patients at each session. Participants reported that occasionally the MDT may increase the length of the discussion time to facilitate another case review or to come to consensus in challenging or difficult cases. The weekly uro-oncology MDT had on average 20 to 25 health care professionals from various health disciplines (eg, urology, radiation oncology, medical oncology, radiology, pathology, cancer specialist nurses, surgeons, and cancer care coordinators). Nurses reported that, when necessary, the MDT expanded to include representation from other specialties, such as high-risk anesthesia, to inform clinical recommendations. Noteworthy, the uro-oncology MDT did not include social worker, psychologist, sexual therapist, or physiotherapy, or exercise physiology representation within the discussion itself, but nurses reported that they would trigger these referrals.

"We don't have social worker, physio or any of that kind of stuff that they meetings, that would be for us to refer." (Urology specialist nurse)

"So, we got a cancer care coordinator, but we don't have a sexual therapist or psychologist in the MDT." (Medical oncologist consultant)

The uro-oncology MDT was led by a chair who was responsible to keep the discussion on track, scribe, and ensure the participation and input from all health disciplines, specialties, and clinicians present to reach consensus when making treatment or surveillance recommendations. Participants reported that the MDT chair rotated every 6 months between medical oncology, radiation oncology, and urology. Specialist nurses did not have the opportunity to chair the MDT meeting.

The uro-oncology MDT discussed both public and private patients and had representation from both public and private consultants. Privacy concerns were raised by the participants who reported that having the private patients discussed with public patients from different hospitals was problematic. Confidentially concerns were mitigated by having the private consultant exit the meeting discussion following presentation and review of their private patient.

TABLE 2
Overview of Qualitative Analysis.

Thematic analysis phase	Description of the process
1. Familiarization phase	Transcribing data, reading and re-reading the data and noting initial ideas
2. Coding phase	Codes are generated across the entire dataset with relevant data collated
3. Generating initial themes	Initial codes will be examined for correlations and collated into potential themes. This includes gathering all data relevant to each potential theme
4. Reviewing themes	Themes are checked against the data set to ensure they are relevant to coded extracts and the dataset in order to determine if the data answers the research question
5. Defining and naming themes	Analysis continues to refine the details of each theme, and the overall story of the analysis, generating clear definitions and names for each theme and sub-theme
6. Producing the report	Themes are fully established, and a final analysis of the themes is undertaken. Compelling examples are identified and related back to the research question and literature

TABLE 3
Overview of the Study Participants.

Discipline: Medical oncology Role: Uro-oncology consultant Time in role: 13 years
Setting: Public Discipline: Radiology
Role: Radiology consultant Time in role: 20 years Setting: Public
Discipline: Nursing
Role: Prostate cancer specialist nurse Time in role: 7 years
Setting: Public Discipline: Nursing
Role: Urology specialist nurse
Time in role: Did not want to provide Setting: Public
Discipline: Nursing
Role: Urology advanced practice nurse Time in role: 6 years
Setting: Public

"Surgeons will actually have their patients go first and then they're required to exit the interview. So that they're not listening to the commercial in confidence stuff." (Radiation oncologist consultant)

Patient Inclusion and Care Preferences

Patients did not attend the MDT discussion, nor do they have the option to attend the MDT discussion. The reasons for patient exclusion within the uro-oncology MDT discussions were reported to be because of logistics, time constraints, use of medical jargon, and privacy reasons.

"There is a lot of very high level and wordy discussion which I think they would find they would get very confused with and there's a lot of jargon that there are not aware of and unless they were sitting with a person who was able to navigate them through that, it would actually hold the meeting up. I don't know that they understand a lot of the stuff that's on that form. They wouldn't that you know, you'd have to explain what an ECOG status is. You would have to explain tumor, a lot of them don't under- stand how we stage tumors. They understand they go and have regular imaging. They do not understand why." (Urology advanced practice nurse)

Instead, patients were notified by the treating consultant, specialist, or team that their case will be reviewed and discussed by the uro-oncology MDT to inform them of recommendations. Participants reported that the discussion the MDT would generally take a patient's treatment preferences into consideration, for example, radiation or surgery but not quality of life or social considerations. Interestingly, most participants did not support patient engagement within the MDT discussion.

"It's more the clinical priority I mean in an ideal world it would be great to do it all, but it's mainly the clinical priority." (Prostate cancer specialist nurse)

"So, in other words, we consider the patient preference when you decide about radiation versus surgery or not. So, we discuss but not in length." (Uro-oncology consultant)

"I don't believe they are. I've never seen a patient there in my 6 years that I've been going to them. I know that they're. They're obviously informed that it's going to an MDT and then they're informed post MDT of what the decision is and a lot of them sort of hang on the phone waiting for that. But I've never seen them attend, no. (Urology advanced practice nurse)

Noteworthy, participants thought patient engagement within the uro-oncology MDT was especially important and that including patients may improve the amount of detailed information put forward about the patient and assist the MDT in fully understanding the patient's treatment and care preferences.

"I think one is patient participation that's not there, which I don't think there's a way to improve that. In the ideal situation, that really, is very important and sometimes, if the information given by the clinician who referred the patient is not adequate, then it's going to affect the decision making as well. So, you need to have your detailed information about the patient, patient preference and the medical history as well." (Uro-oncology consultant)

"Yes, you could include a patient, maybe a post MDT discussion clinic. So that the patient is, but we do that in our clinics anyway. I don't know that they understand a lot of the stuff that's on that form. They wouldn't that you know, you'd have to explain what an ECOG status is. You'd have to explain tumor, a lot of them don't understand how we staged tumors. They understand they go and have regular imaging. They don't understand why." (Urology advanced practice nurse)

Application of virtual model

Before COVID-19, the uro-oncology MDT discussion occurred face-to-face; with the ongoing impacts of COVID-19 pandemic, the MDT adopted a virtual discussion using Microsoft Teams. There was consensus among all the participants that the virtual discussion was found to be more convenient and improved the attendance among all health care disciplines. However, one participant thought that robust and in-depth discussions occurred face-to-face rather than virtual with less input from cancer specialist nurses.

"Not now with the virtual model, because virtual model is better. So compared to the previous face-to-face model, the current model of discussion is better because everyone can present them- selves from home or from wherever they are at time." (Uro-oncology consultant)

"You don't get people arriving on time. We end up starting at 7:15 or so. I think the attendance is better now. You see more people attending now and we also start on time." (Uro-oncology consultant)

"No, I think we used to have a lot more robust discussion in a face- to-face environment and COVID I think has very has impacted it a tremendously one because a lot of people have very difficult time and it's very easy to sit here with your mic on mute and your cam- era on mute and not actually be present in the meeting, whereas when we're in the meeting face to face, we had a lot more conversation and actually people like the cancer nurses and myself were sometimes included a lot more in that conversation. Now we have to really be asked a question in order to sort of put our hand up and say something in the online version." (Urology advanced practice nurse)

Use of Clinical Guidelines

Participants reported that the uro-oncology MDT did not any favor particular guidelines and applied a range of the available European and American clinical guidelines for the treatment of patients diagnosed with a GU cancer. Participants made reference to the National Comprehensive Cancer Network, the European Society for Medical Oncology, the American Society of Clinical Oncology, and the European Association of Urology, as well as the Australian and New Zealand Urogenital and Prostate Cancer Trials Group.

"Then it's good to ask those, but yes, it's usually European guidelines. It is very specific for certain surgeons; some surgeons like to follow because we don't have USANZ guidelines. We don't have Australian guidelines. We, some are geared more towards a UA; some are geared towards European." (Urology advanced practice nurse)

"American, a lot of American guidelines I guess traditionally have been very. Uhm, proactive. Prosurgical. A lot of the British and European guidelines have been a lot more balanced in terms of surgery, radiation choices for certain tumors. Umm. And I think that our practice here tends to probably mirror the British practice a little bit more." (Radiology consultant)

"It depends on if it's early, European, usually EUA, also association and metastatic Disease is usually cancer guidelines, so it's either ASCO or ESMO guidelines." (Medical oncologist consultant)

Auditing

Most of the participants were unsure if the uro-oncology MDT had been subject to any form of audit. All participants express that they would value either a retrospective and prospective audit of the urooncology MDT to evaluate clinical decision-making on patient out- comes, psychosocial and sexual health implications, and a comparison of virtual discussions to face-to-face discussions.

"We haven't done auditing. My preference would be to audit, do an audit in the urology MDT here pre COVID and post COVID in other words before virtual and face to face that I think that would be very useful. I think if someone could come forward for a retrospective and prospective one will be very useful one." (Medical oncologist consultant)

"You know, that's the kind of auditing we should be doing are we are we getting things right, are we are we improving our lives of our patients and you know sending people off just to have surveillance and they are just doing well on surveillance or within you know three months they've you know failed. Yeah, that's right. So, I don't know that anybody's doing that." (Urology advanced practice nurse)

Theme 2: Lack of Person-Centered Clinical Decision-Making

The decision to refer a patient to the uro-oncology MDT for a case discussion was the sole responsibility of the treating consultant, specialist, or team. In the private hospital setting, the referral was primarily driven by the consultant, whereas in the public hospital settings, referrals are driven by the treating team, consultant, or specialist. For a patient to be referred to the uro-oncology MDT, a referral form was required to be completed and submitted at least 2 days before the uro-oncology MDT discussion date. The MDT referral form aimed to capture patient demographics, clinical history, patient con- sent, Eastern Cooperative Oncology Group (ECOG) performance status, details of imaging, and

pathology results as the minimum amount of information required for the MDT discussion to occur. There was no consideration of quality of life, considerations of geriatric oncology, or psychosocial patient considerations. Noteworthy, participants reported that incomplete or untimely referrals primarily affect both radiology and pathology as clinicians in these disciplines did not have the time to review the diagnostic results before the MDT discussion.

> "I think it's mainly with the clinician's choice, so it should be ide- ally everyone. Everyone got a cancer diagnosis; a new cancer diagnosis needs to be discussed." (Medical oncologist consultant)

> "You know, I mean, people have banded around that you should discuss every single patient at a multidisciplinary meeting. Personally, I think that that's ridiculous and I think that it's certainly untenable without increasing patient load. Some urologists are very. Yeah. Want to present everyone just for the sake of it. Mean I think there's a lot of people who don't come through who are fairly straightforward." (Radiology consultant)

> "Frankly, if they don't put the information on, then there's no scrounging for that information that day. So, it's encouraging everybody to make sure all of the appropriate information's there so that, you know, pathology and radiology can get their stuff together and that in time for the meeting." (Prostate cancer specialist nurse)

Interestingly, the uro-oncology MDT does not include a sexual therapist or psychologist within the MDT discussion and does not psychosocial support within the MDT discussion. However, the MDT will recognize these needs of the patient and make referrals for the patient to receive psychosocial support, which is generally under- taken by the cancer nurse specialist.

> "There's no psychosocial, um people available at the meeting. Otherwise, it's all done out in the clinic. So, they certainly receive their psychosocial support normally from the nurses are referrals, but it's I guess it's more the clinical priority that I mean in an ideal world it would be great to do it all, but it's mainly the clinical priority." (Prostate cancer specialist nurse)

Clinical Decision-Making

The uro-oncology MDT's clinical decision-making was found to incorporate multiple modes of practice in keeping with the cognitive continuum theory. Generally, each patient's case was somewhat structured due the minimum amount of information required for the MDT discussion referral; however, the clinical decision-making was predominantly based on the spectrum of intuition applying analysis (mode 3) for clinical trials. Participants reported that the MDT considered input from all the health disciplines, clinicians, and specialists involved in the patient's case before achieving consensus and coming to a unanimous decision when recommending treatment or surveillance options.

Nonattendance by a specialist, consultant, or a health discipline prevented consensus decision-making within the uro-oncology MDT, which resulted in a patient's case being postponed for the next weekly MDT discussion. Noteworthy, challenging cases where consensus is not reached or complex cases requiring large and complex surgeries were often referred to another state MDT.

> "The really tricky ones are the ones that either need to be referred off to an external service, say to Sydney for a very large surgery or for whatever or if there is a discrepancy about what should be done that might just be a discussion between two members of the one service." (Urology advanced practice nurse)

> "That can make it very difficult, and I know again actually yester- day that with no radiologists, either private or public present, because doctors can access images and what not, they can bring it up for there to be some discussion, but they actually make it very clear that it's merely discussion because they're not the expert. Either if there's not a great urgency, they may put the patient off to next week or they will then leave the meeting and actually contact you know, the radiologist or whoever's to get that opinion." (Prostate cancer specialist nurse)

Noteworthy, a single participant thought patient participation within the uro-oncology MDT may improve clinical decision-making; however, patient participation within MDT discussions poses considerable challenges with no available solutions.

> "I think one is patient participation, that is not there, which I don't think there's a way to improve that. I don't think you can make a decision within the MDT session when the patient doesn't participate because that's really important and sometimes, if the information given by the particular clinician who referred the patient not adequate, then it's going to affect the decision making as well." (Uro-oncology consultant)

Interestingly, nurse participants felt they rarely contributed to the MDT discussion and that their input was sought in relation to a patient's ECOG status, details of any situation that may affect treatment, and details relating to trial and voids.

> "So, I rarely contribute to the discussion. If anything, I contribute to maybe their ECOG status or if they're discussing trial of voids or anything like that." (Urology advanced practice nurse)

> "Certainly, if their psychosocial sort of situation will potentially impact on their treatment. Then again, the CSNs who have already met these people may well bring that up." (Prostate cancer specialist nurse)

Theme 3: Barriers and Facilitators of the MDT

Barriers

Several barriers to the uro-oncology MDT were expressed by the participants: (1) attendance issues, (2) late or incomplete referrals, (3) the virtual discussion itself, and (4) personality conflicts. Atten- dance issues were reported by the participants to be infrequent and generally did not affect patients; however, nonattendance was perceived to be problematic when a health discipline or specialist perspective and input were required in the decision-making processes for consensus outcomes.

> "This week, there were no radiologists in the meeting, which was certainly problematic and therefore there will be follow up by the presenting doctor with them individually. And also, for some rea- son it doesn't normally happen, but no one from medical oncology attended this week, which didn't tend to impact the patients we discussed greatly. One of them was already under a medical oncologist, but there are other weeks that it can be problematic because you really need that specialty's opinion." (Prostate cancer specialist nurse)

When patient referrals were submitted at the last minute, participants reported that it negatively affected disciplines such as radiology and pathology. Regarding the application and use of Microsoft Teams to carry out MDT discussions, participants reported difficulties at times logging into the virtual meeting or experienced connectivity issues.

> "I really don't see anything which could impact the function I think the main thing is the referral process, so from private especially so. A patient, they should refer at least two days before the meeting, so that doesn't sometimes happen. Sometimes the last-minute referral; that poses a challenge to the radiologist and the pathologist. If not, if all the information is not put in on the form so. The consultant may not have actually seen the patient. He may be making a decision; going on what his registrars are telling." (Radiation oncologist consultant)

> "Not everybody is technologically as me, and so trying to log in has been difficult in the public setting." (Medical oncologist consultant)

Participants had different experiences relating to the uro-oncology MDT. Personality conflicts were found to have been a challenge for the uro-oncology MDT in previous years particularly within surgeons, which posed challenges to the MDT dynamics and affected teamwork and functioning. It was also found that the uro-oncology MDT was a supportive environment that worked well together with shared responsibility.

> "Depending on the interpersonal I think at times the um the GU meeting for example was very adversarial initially, and it was very. It was difficult to try to pull everyone together to be a bit more cohesive and as time has gone on, I think the MDT has contributed to improving that. But I think that there are also situations where if that was to continue, for example, if there were, there are a couple of people that don't get on with other people and in there and I think that it really it means that people don't have a voice or they get put down all the time and I think that that then has the problem that firstly it doesn't represent the range of opinion and secondly it can be used as a weapon." (Radiology consultant)

Facilitators

Only one facilitator was reported by the participants was the implementation of the virtual MDT during the COVID-19 pandemic. Participants found the virtual discussion to be more convenient and resulted in better attendance from health disciplines when compared to the previous model of face-to-face discussions.

> "The current model of discussion is better because everyone can present themselves from home or from wherever they are at time. Sometimes we don't get to finish in one hour's times it goes a bit beyond more than one hour. So, if someone has to start theatre at 8:00 o'clock or something might be hard. My experience is the way other way around COVID has made it a bit easier because it became virtual so, I think we are dis- cussing more patients. You know, urology is doing a pretty good job, So I really don't see anything which could impact the functioning I the main thing is the referral process." (Uro- oncology consultant)

Discussion

This qualitative study set out to understand the clinical decision- making processes among the uro-oncology MDT members and how patients are engaged in the process. There were several clinically valuable new insights and multiple factors within the uro-oncology MDT that affect patient engagement in the process. The MDT has a biomedical focus that overshadows person-centered principles of holistic care.[20,21,24,28] There is no psychosocial representation from allied health disciplines with infrequent input from the perspective of a cancer specialist nurse within the uro-oncology participants in this study. This finding is consistent with previous published research about specialist nurses who reported a lack of participation in the cancer MDT, despite their significant advocacy role in patient care.[31] It is important to acknowledge that in some countries/regions, nurses working in cancer care will have different role titles such as nurse specialists and nurse practitioners and have different career pathways with markedly different perspectives on their role within the MDT. Therefore, it is a worthy acknowledgment when interpreting the transferability of these findings within other contexts.

Patients were not included in the discussion, nor did patients have the option the attend the discussion. While this observation is in keeping with other published research that has explored uro-oncology MDT meetings,[8,9,32] it is in contrast to cancer care principles of "multidisciplinary

care."[33] Important considerations were identified that limit the patients' opportunity to be engaged in the meeting related to timely coordination, time constraints, use of medical jargon, and confidentially issues. While these issues have be identified in previously published literature,[3,5,32] further research is needed to explore innovative approaches to moving away from a solely bio- medical model given the wide spread in shortcomings and unmet supportive care issues well documented in existing cancer services.[34] There was a lack of clinical governance principles to identify the impact of this uro-oncology MDT on patient outcomes due to the absence of any form of clinical audit. A previously published audit[35] of urological MDTs across multiple sites in the southwest of England found that the clinical decision-making of urological MDTs was inconsistent, clinical cues were underused, some MDTs recommended surgery where there would be little to no benefit for the patient, and some treatment recommendations went against clinical guidelines. In the Australian context, two previous studies[36,37] reported on patient outcomes reviewed by uro-oncology MDTs. Across both studies, they reported that only 34% to 67% of all newly diagnosed GU cancer patients were discussed, meaning in the Australian context that many patients will never be discussed or have access to MDT-informed care and treatment. These reports appeared to be consistent and likely to reflect the volume of patients reviewed in this uro-oncology MDT study given the relative low number of patients (10) discussed weekly inclusive of prostate, kidney, testicular, bladder, and penile cancers. Further research is needed to leverage health care system strategies, and funding is needed to increase the number of patients who are subject to uro-oncology MDT board meetings and to evidence an impact on patient outcomes.

The findings in this qualitative study supported the cognitive continuum theory of clinical decision-making among uro-oncology health care professionals. Specifically, clinical-decision making within the findings identified that clinical decision-making was in keeping with intuitive thought (mode 6), decisions based on expert judgment (mode 5), thought experiments mode (mode 4), and quasi-experiments (mode 3).[14,15] The clinical decision-making among the participants in this study was predominantly based on the spectrum of intuition (modes 6, 5, and 4) and applying analysis (mode 3) for cases that required careful review and discussion of clinical information presented in the cancer MDT.

Limitations

There are several limitations of this research to point out. First, the small sample size was reflective of recruitment challenges during the peak of the COVID-19 pandemic. This study was conducted with a single-site uro-oncology MDT but was representative of servicing a total population of 550,000 patients in Australia. It is acknowledged that recruitment bias is possible because we were unable to capture reasons for non-participation due to ethical approval restrictions. Patients who agreed to participate in the interview might have been more attentive and eager to talk about their experience. Finally, all study participants were located in Australia, which limits the transferability of the findings to other international health care systems and contexts. However, to the best of our knowledge, this is the first qualitative study to date seeking to understand the clinical decision- making process within the uro-oncology MDT.

Conclusion

This study provides further evidence to support the fact that uro-oncology MDTs continue to have a solely biomedical focus and do not consider the holistic care needs of patients. Specialist nurses reported a lack of participation despite their significant role in patient advocacy for people living with cancer. The clinical focus of the uro-oncology MDT dominates care perspectives and evidently the whole person is not being treated by the cancer MDT, resulting in reduced quality of life and may compound unmet supportive care needs.

Declarations

Ethics approval was given by HREC University of Canberra (Project ID 11535). Consent to participate and for publication was given by written informed consent.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this report.

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Author Contributions

BA provided methodology, validation, formal analysis, and writing review and editing. AH provided methodology, validation, formal analysis, and writing review and editing. CP provided conceptualization, methodology, validation, formal analysis, writing review and editing, and supervision.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.soncn.2023.151447.

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Supplementary Table 1. Consolidated Criteria for Reporting Qualitative Studies (COREQ) Checklist

No. Item	Description	Reported on page
Personal Characteristics		
1. Interview/facilitator	The author who conducted the interviews.	Page 5
2. Credentials	The researcher's credentials.	Page 5
3. Occupation	The interview's occupation at the time of the study.	Page 5
4. Gender	Male, female or non-binary.	Page 5
5. Experience and training	Experience and training of the researcher.	Page 5
Relationship with participants		
6. Relationship established	Relationship prior to study commencement.	Page 5
7. Participant knowledge of the interviewer	Knowledge about researcher.	Page 5
8. Interviewer characteristics	Characteristics reported about the interviewer.	Page 5
Theoretical framework		
9. Methodological orientation and theory	The methodological orientation underpinning the study.	Page 6
Participant selection		
10. Sampling	Method of participant selection.	Page 5
11. Method of approach	How participants were approached.	Page 6
12. Sample size	Number of participants in the study.	Page 7
13. Non-participation	Number of participants who refused to participate or dropped out.	Page 7
Setting		
14. Setting of data collection	Location of data collection.	Page 5, Table 1
15. Presence of non-participants	Presence of other individuals at the time of data collection.	Page 5
16. Description of sample	Important characteristics of the sample.	Page 7, Table 2
Data collection		
17. Interview guide	Interview guide and prompts used.	Table 1
18. Repeat interviews	Statement of whether repeat interviews were conducted.	Page 6
19. Audio/visual recording	Type of interview recording.	Page 6
20. Field notes	Description of field notes made during or after the interview.	Page 6
21. Duration	Duration of the interviews.	Page 6
22. Data saturation	Discussion around data saturation.	Page 6
23. Transcripts returned	Return of transcripts to participants.	Page 6
Data analysis		
24. Number of data coders	The number of data coders who coded the data.	Page 7, Table 2
25. Description of the coding tree	Description of coding tree.	Page 8
26. Derivation of themes	Identified in advance or derived from the data.	Page 9,
27. Software	Software used to manage the data.	Page 7
28. Participant checking	Feedback from participants.	Page 6
Reporting		
29. Quotations presented	Participant quotations presented to illustrate the themes.	Page 7-16
30. Data and findings consistent	Consistency between data presented and the findings.	Page 7-16
31. Clarity of major themes	Major themes clearly presented.	Page 7-16
32. Clarity of minor themes	Description of minor themes or categories.	Page 7-16