Canadian Medical Education Journal
Revue canadienne de l'éducation médicale

How to be a good clerk on the clinical teaching team: A scoping review

Comment être un bon externe dans l'équipe d'enseignement clinique : une revue exploratoire

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Volume 15, Number 2, 2024

URI: https://id.erudit.org/iderudit/1111562ar
DOI: https://doi.org/10.36834/cmej.77264

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Publisher(s)

Canadian Medical Education Journal

ISSN

1923-1202 (digital)

Explore this journal

Cite this document

Lively, J., Gasim, M., Liu, Q. & Lingard, L. (2024). How to be a good clerk on the clinical teaching team: A scoping review. *Canadian Medical Education Journal / Revue canadienne de l'éducation médicale*, *15*(2), 54–64. https://doi.org/10.36834/cmej.77264

Article abstract

Background: As medical institutions shift towards Competency Based Education, more effort is being directed towards understanding how healthcare teams' function competently. While many have studied the competencies required to be a successful clerk, few have examined this question within the context of team function and integration. Our primary objective is to identify how medical clerks successfully integrate and contribute to clinical teaching teams.

Methods: We performed a scoping review of the literature using the Ovid MEDLINE database. Data was extracted and thematically analysed in accordance with Arksey and O'Malley's (2005) approach to descriptive analysis.

Results: Out of 1368 papers returned by our search, 12 studies were included in this review. Seven main themes were identified amongst the included studies: (1) Communication (2) Taking Responsibility and Appropriate Autonomy (3) Humility and Knowing When to Ask for Help (4) Identity as a Team Member, (5) Self-Efficacy (6) Rapport and Relationship Building (7) Patient Advocacy

Conclusion: Analysis of these themes revealed four major findings: (i) The importance of documentation skills and communication towards team contribution (ii) The important connection between professional identity development and self-efficacy (iii) The impact of rapport on the reciprocity of trust between team members (iv) The role of clerks as patient advocates is poorly understood. This review also illustrates that there is a relative dearth of literature in this area. Future studies are needed to develop clear guidance on how clerks should perform these competencies in the context of team function and integration.

Canadian Medical Education Journal

Reviews, Theoretical Papers, and Meta Analyses

How to be a good clerk on the clinical teaching team: a scoping review

Comment être un bon externe dans l'équipe d'enseignement clinique : une revue exploratoire

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Published ahead of issue: Apr 2, 2024; published: May 1, 2024. CMEJ 2024, 15(2) Available at https://doi.org/10.36834/cmej.77264

Abstract

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Résumé

Background : Alors que la formation médicale s'oriente vers un enseignement fondé sur les compétences, des efforts accrus sont déployés pour comprendre comment les équipes de soins de santé fonctionnent de manière compétente. Si de nombreux travaux ont porté sur les compétences requises pour être un bon externe, peu d'entre eux ont abordé cette question dans le contexte du fonctionnement et de l'intégration de l'équipe. Notre objectif principal est d'identifier comment les externes s'intègrent et contribuent avec succès aux équipes d'enseignement clinique.

Méthodes : Nous avons effectué une revue exploratoire de la littérature en utilisant la base de données Ovid MEDLINE. Les données ont été extraites et analysées thématiquement conformément à l'approche de l'analyse descriptive d'Arksey et O'Malley (2005).

Résultats : Sur les 1 368 articles issus de notre recherche, 12 études ont été incluses dans cette analyse. Sept thèmes principaux ont été identifiés parmi les études incluses : (1) communication (2) prise de responsabilité et autonomie appropriée (3) humilité et savoir quand demander de l'aide (4) identité en tant que membre de l'équipe, (5) efficacité personnelle (6) établissement de liens et de relations (7) défense des intérêts des patients.

Conclusion : L'analyse de ces thèmes a permis de dégager quatre grandes conclusions : (i) l'importance des compétences en matière de documentation et de communication pour la contribution à l'équipe (ii) le lien important entre le développement de l'identité professionnelle et l'efficacité personnelle (iii) l'importance d'établir un rapport entre les membres de l'équipe pour bâtir une confiance réciproque (iv) le rôle des externes en tant que défenseurs des intérêts des patients est mal compris. Cette analyse montre également qu'il y a une relative pénurie de littérature dans ce domaine. Plus de travaux sont nécessaires pour élaborer des orientations claires sur la manière dont les externes devraient exercer ces compétences dans le contexte du fonctionnement et de l'intégration de l'équipe.

Introduction

Clinical clerkship in Canadian medical schools begins in the second half of a medical student's education and requires the medical student to serve as a clerk within various medical teams. A clerk, in the Canadian medical education context, serves as the most junior member of a clinical teaching team, and while responsibilities vary depending on the clinical context, a clerk's role generally includes introductory clinical tasks such as taking patient histories, performing physicals, and documentation with oversight from residents and attending physicians. Clerkship entails the student rotating through various medical services such as internal medicine, surgery, obstetrics/gynaecology, paediatrics, family medicine, psychiatry, and community/rural medicine under the supervision of a practicing physician in the field. Clerkship is a rapid clinical learning experience, a source of both clinical and hidden curricula.[1,2] and an important building block of a medical student's professional identity.[1,3–5] Successful clerkship experiences require the student to join multiple teams as they move across rotations; but our understanding of effective clerk behaviour and function within a clinical teaching team setting is limited, and the existing knowledge lacks synthesis. Without a synthesized knowledge base regarding the role of clerks on clinical teaching teams, both students and institutions lack clear, shared expectations for what constitutes a 'good clerk.'

A rich literature considers the supervisory relationship between medical clerks and their attending physician supervisors.[6–13] Physicians act as mentors, providing guidance and support as medical students navigate the complexities of patient care.[6,8] They also act as role models, aiding in the socialization and professional development of medical students.[7,9] However, multiple healthcare team members play an important role in a student's clinical clerkship in addition to the supervising physician. Such team members include residents at various levels of training, medical fellows, nurses, dieticians, pharmacists, and other allied health professionals. The literature on interprofessional education recognises that it is integral for medical clerks to effectively work in these teams as their future success in interprofessional teamwork has been associated with improvements in patient care as well as a reduction in medical errors.[14,15] Developing the competency of interprofessional teamwork has also been emphasized in Canadian medical faculties through Competency Based Medical Education as well as within the CanMEDS roles of Collaborator and Professional.[16–18]

While teamwork is a foundational premise in competency-education frameworks, with their emphasis on patient outcomes and collaboration, there is limited literature regarding how the specific personal and professional behaviours of clerks allow them to integrate into and contribute to the clinical team. Competency-based frameworks suggest the competencies expected of a successful clerk, such as professionalism and collaboration, but they do not articulate concretely how clerks should perform within the context of effective team function.[16,19,20] This results in clinical clerks being presented with vague, multiple, and perhaps competing recommendations of how to perform in clerkship, which may lead to contradictory expectations and ultimately inhibit their ability to effectively integrate into the team. Therefore, **our primary objective was to identify how medical clerks successfully integrate and contribute to clinical teaching teams.**

Methods

Study design and populations

We conducted a scoping review following Arksey and O'Malley's methodology.[21] We included studies meeting the following eligibility criteria:

1. Peer reviewed publication
2. Published in English
3. Discussed medical clerk competencies
4. Elaborated on medical clerk qualities and behaviours
5. Discussed the role of a clerk in patient care

We selected these broad inclusion criteria to capture a wide range of literature published on the topic of interest. Exclusion criteria used for this study directed our search toward studies evaluating clerkship team performance. We excluded studies that:

1. Focused solely on medical residents without discussing medical clerks
2. Discussed competencies as individual with no attention to the team aspect
3. Lacked a connection between competencies and clerkship performance
4. Evaluated team learning strategies instead of team function.

Search strategy

We developed our search strategy in consultation with an information specialist (MG) as well as an expert in medical education research (LL). We utilized the Ovid MEDLINE database to identify our dataset and the most recent search was completed on May 27th, 2021, with search dates from 1946 to May 2021. We selected this date range to include the entire range available to us in the Ovid MEDLINE database, as we were uncertain on when the earliest study relevant to our analysis would have been published and decided to keep our search broad. A full copy of our electronic search strategy is available as Appendix A. In summary, our search strategy crossmatched synonyms for medical clerkship, patient care teams, and clinical competence.

Study selection

In pairs, three independent reviewers screened the titles and abstracts of studies using Covidence to determine if inclusion and exclusion criteria were met as outlined above[22]. Each title and abstract received two independent reviews to determine inclusion or exclusion. Full text review of included articles by two independent reviewers determined eligibility for inclusion for analysis. We resolved any discrepancies between reviewers by discussion and input by a third independent reviewer.

Data extraction

Following Arksey and O'Malley's "descriptive analysis" approach, we summarized information from the articles and entered this into an extraction table in Microsoft Excel[21]. We implemented Levac and colleagues' suggestions for the data organizing process. This process involved collectively developing the extraction table to include pertinent demographic data from the studies (e.g., publication year, populations, publication location) as well as relevant thematic categories. We iterated on the data extraction process given our exploratory research question, and we added new themes to the table as data extraction progressed.

Data analysis

The researchers (MM, JL, QL), in consultation with the principal investigator (LL), synthesized and collated recurring patterns in the data extraction table. We used the data extraction table as a platform to aid in the identification of recurrent themes through the included studies, and therefore guide thematic analysis. This allowed synthesis of the relationships and recurrence of different themes on teamwork in clerkship. We then used qualitative thematic analysis to generate seven main themes and one knowledge gap in the literature. These are outlined in our results section below.

Results

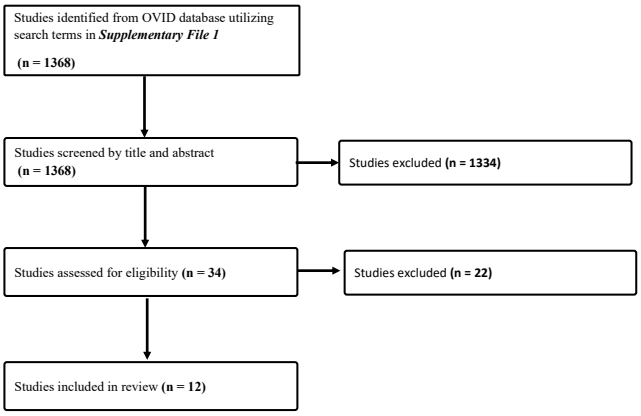

Figure 1. Prisma chart

Descriptive summary

The initial search generated 1368 papers, of which we selected 34 publications for full-text review, and we included 12 in this study, see Figure 1. Through applying inclusion and exclusion criteria, we excluded a large proportion of studies due to publications focusing exclusively on residents, nursing students, medical students that were not in clerkship, simulation, or evaluation of knowledge base. All researchers participated in full text review. Summary of the included publications is shown in Table 1. Of the 12 publications selected, three were from studies set in the Canadian medical context of clerkship training[11,23,24] and the remaining publications were from the medical training contexts of Australia,[25] USA,[26–29] United Kingdom,[30–32] and New Zealand.[33] Seven studies were primary qualitative research, of which two utilized individual interviews,[25,27] one utilized group interviews,[30] and four utilized both observation and interview modalities.[11,23,24,33] One study was cross-sectional, including both qualitative and quantitative research through linking survey responses, clerkship skill simulation evaluation and institutional interviews.[28] Two studies involved surveys of healthcare professionals to illustrate the competencies and characteristics of a successful clerk.[26,32] One included publication was from a thematic analysis of workshop discussions and written responses during a consortium to explore value-added medical education.[29] One included publication was a commentary on personal tips for medical student success evidenced with prior literature.[31] Earliest study included was published in 2005.[32] Latest study included was published in 2019.[26]

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Table 1. Included articles and identified themes

Title	Authors	Year Published	Country	Study Type	Population	Themes
Preserving professional credibility: grounded theory study of medical trainees' requests for clinical support.	Kennedy et. al.	2009	Canada	Primary qualitative research study, grounded theory approach	Third and fourth year medical students. 1st, 2nd, and 3rd year residents	Taking Responsibility and Appropriate Autonomy, Humility and Knowing When to Ask for Help
Point-of-care assessment of medical trainee competence for independent clinical work.	Kennedy et. al.	2008	Canada	Primary qualitative research study, grounded theory approach	Attending physicians, junior and senior residents, and medical students	Communication, Taking Responsibility and Appropriate Autonomy
It's not just what you know: junior trainees' approach to follow-up and documentation.	Cadieux & Goldszmidt	2017	Canada	Primary qualitative research study, grounded theory approach	First year residents and third year clerks	Communication, Taking Responsibility and Appropriate Autonomy, Rapport and Relationship Building
Effectiveness of a rural longitudinal integrated clerkship in preparing medical students for internship.	Birden, Barker, & Wilson	2016	Australia	Primary qualititaive descriptive study	First year residents	Taking Responsibility and Appropriate Autonomy, Rapport and Relationship Building, Interprofessional Collaboration, Self-Efficacy
Which Student Characteristics Are Most Important in Determining Clinical Honors in Clerkships? A Teaching Ward Attending Perspective.	Herrera et. al.	2019	USA	Primary research - survey data	3rd year medical students	Communication, Taking Responsibility and Appropriate Autonomy, Humility and Knowing When to Ask for Help, Self-Efficacy
Developing Entrustable Professional Activities for Entry Into Clerkship.	Chen et. al.	2016	USA	Primary research, qualitative approach	Preceptors that could incorporate students into workplace activities of varied clinic settings & preclerkship and clerkship students	Communication, Taking Responsibility and Appropriate Autonomy
Assessing 3rd year medical students' interprofessional collaborative practice behaviors during a standardized patient encounter: A multi-institutional, cross-sectional study.	Oza et. al	2015	USA	Primary research, observational/ survey	Medical students following completion of core clerkship rotations	Communication, Self-Efficacy
How Can Medical Students Add Value? Identifying Roles, Barriers, and Strategies to Advance the Value of Undergraduate Medical Education to Patient Care and the Health System.	Gonzalo et. al	2017	USA	Primary research, thematic qualitative analysis	Educators, systems leaders, clinical mentors, AMA staff leadership, and medical students	Knowledge Gap: Clerks as Patient Advocates
Experience-based learning: a model linking the processes and outcomes of medical students' workplace learning	Dornan et. al	2007	United Kingdom	Primary qualititative research, grounded theory approach	Year 3 and year 5 medical students	Rapport and Relationship Building, Interprofessional Collaboration, Self-Efficacy , Identity as a Team Member
Twelve tips for medical students to make the best use of ward-based learning	Bharamgoudar & Sonsale	2017	United Kingdom	Secondary research, personal experience of authors and current literature	N/A	Communication, Humility and Knowing When to Ask for Help, Rapport and Relationship Building, Interprofessional Collaboration
The Acute Care Undergraduate TEaching (ACUTE) Initiative: consensus development of core competencies in acute care for undergraduates in the United Kingdom.	Perkins et. al	2005	United Kingdom	Primary research, survey	Various healthcare practitioners in acute care	Communication, Humility and Knowing When to Ask for Help, Rapport and Relationship Building, Interprofessional Collaboration
Teaching and learning in the hospital ward	Jaye et. al	2009	New Zealand	Primary research, "editing analytical style" qualitative - observational and interview	4th year medical students on surgery rotation	Communication, Taking Responsibility and Appropriate Autonomy, Humility and Knowing When to Ask for Help, Identity as a Team Member

All studies either focused on medical students that had recently undergone a clerkship experience or healthcare providers that had directly overseen such students. Three of the included studies within this review also included impressions of successful medical clerks by senior staff such as educators, attending physicians, clinical mentors, systems leaders, and other healthcare leaders.[26,27,29]

This analysis identified seven themes that were a component of medical clerk success as part of the medical team, which were illustrated across multiple studies. We described these themes below in order of most to least prominent, including relevant excerpts from these studies. Additionally, we identified one knowledge gap that is also described.

Communication

Communication is a necessary component of team function, and this has also been reflected in eight publications as a part of a medical clerk's success.[23,24,26–28,31–33] Behaviours described within this theme include documentation,[24,26,31] patient presentation to supervisors,[23,24,26,27,31,33] and communication with patients and their family.[26,27,31,32] Cadiuex & Goldszmidt delineated a clerk's ability for successful documentation and follow up through describing three characteristics; *"diligence"*, *"relationship to the team"* and *"level of performance"*. Herrera et.al noted documentation, presentation skills, and patient/family communication as factors of a medical clerk's likelihood to receive clinical honours, however they were not the most important factors. Jaye et al. noted the importance of patient presentation; *"one inescapable duty that team membership confers on students during formal team ward rounds is patient presentation."* Patient presentation can both engage the medical clerk's learning as well as be a source of anxiety that serves as a barrier from engaging with the team.[33] Kennedy et al. further expanded by suggesting *"a trainee's ability to present relevant information spontaneously, before it was solicited by the supervisor, was considered to be a marker of independent clinical judgment"* and that the structure and delivery of patient presentation can be used as proxy measures of clinical competence.[23]

Taking responsibility and appropriate autonomy

In seven publications, we identified behaviours and characteristics important to a medical clerk's success linked to the theme of taking responsibility for patient care as being.[11,23–27,33] A key part of taking responsibility and appropriate autonomy was the necessity for students to report back to their team to ensure that what they were doing was approved by and integrated into the work of the teaching team.[11,24] Across the seven publications, we saw various behaviours described that fit within this theme. This included seeing patients independently,[11,24–27] integrating patient information to construct a differential diagnosis and plan,[11,23,27] identifying personal learning objectives and communicating them appropriately to preceptors.[25,33] Birden et al. stated that *"[medical clerks] described how together with their preceptors they identified their learning needs and that over time, through being encouraged to take increasing responsibility for patient care while feeling fully supported by their supervising clinicians, they built on their clinical skills."*[25] Cadiuex & Goldszmidt also illustrated the pitfall of inappropriate autonomy and warned against clerks being *"excessively independent"* resulting in minimal review or discussion with other team members. Stated motivations for this behaviour are clerks desiring to *"get the work done with the least amount of effort"* and misconstruing the lack of question-asking as being beneficial to their assessment due to the *"appearance of competence."*[24] This behaviour as a clerk is related to the next theme: humility.

Humility and knowing when to ask for help

Five publications identified humility as an important aspect of a medical clerk's success.[11,26,31–33] Of these five, two papers identified this theme as either a competency important to medical student success by saying that it *"describes/demonstrates how to recognize one's own limitations and when to call for help"*[32] or as a factor important to receiving clinical honours since it facilitates *"seeking feedback"*.[26] Three papers expanded on the impact of a clerk's humility and identified behaviours such as seeking feedback on new skills and asking for teaching on new topics.[31] Barriers when the medical clerk lacked humility included difficulty in knowing one's limitations,[11] as well as *"expressed reluctance to ask for help if the clinical situation was one that they perceived they should have mastered at their level."*[11] Additionally, being *"overly assertive"* was perceived to result in poor judgement in patient care.[33] These papers emphasized that, because a clerk's primary role in a medical team is that of a learner, their humility and acknowledgement of their own shortcomings was a component of their success in their role on the team.[11,26,31–33]

Rapport and relationship building

A critical component of successful team function is rapport and relationship building. Five publications emphasized the role of building relationships with other team members as

a component of a clerk's success in the team.[24,25,30–32] Suggestions for clerks under this theme ranged from more basic issues such as introducing one's-self when meeting a new team member *"It is extremely worthwhile to introduce yourself to all the team members on the ward and not just the doctors."*[31] to more complex issues such as drawing on pre-existing relationships with preceptors to increase confidence and ease team integration; *"Close relationship with preceptors, registrars, built confidence and enabled easier integration in teams during internship."*[25] Other components of rapport and relationship building highlighted the reciprocal nature of physician-student and nurse-student relationships and how that can impact the dynamic within the health team: *"doctors who see a strongly, intrinsically motivated student are also perhaps more likely to reciprocate the enthusiasm and provide better quality teaching."*[23] Due to the nature of a clerk's role, building relationships with patients is a potential avenue for students to have a more participatory role in patient care *"Building social relationships with patients increased inexperienced respondents' sense of participation and success gave them more confidence to participate on another occasion."*[30] It could be inferred that this would allow clerks to be more engaged with patient care and therefore contribute to team goals. Along with these components of relationship building, student-student interactions in clerkship were also seen to have an impact on success through the development of stronger support networks*. "[Peer group relationships] became important for social support and for group learning. They felt this supported them to learn to work in a team as they needed to as interns."*[25]

Interprofessional collaboration

Four studies emphasized that the shift toward multidisciplinary provision of care necessitates an increased ability to work with individuals across various professions. [25,30–32] Birden et al. emphasized that clerks who felt they had a deep understanding of the boundaries and responsibilities of allied health professionals were able to contribute to the continuity of care for patients. Clerks developed a deeper understanding of what services are available to patients in the hospital as well as following discharge. *"During their clerkship, they also experienced how the hospital functioned and where to seek support and who to refer to."*[25] Clerks who functioned well within the health team were able to interact and collaborate with other professionals within the hospital. Similarly, Bharamgoudar & Sonsale mention interprofessional collaboration as one of the most important aspects of learning on the wards. They suggest that clerks introduce themselves to all the team members on the ward in addition to physicians. By doing so, clerks provide themselves the best opportunity to practice holistic and effective care that aligns with a multidisciplinary model.[31]

Self-efficacy

Four publications highlighted the importance of self-efficacy and appropriate self-confidence as conducive to the medical clerk's role in the team.[25,26,28,30] Two studies showed clerkship performance and strong interprofessional collaboration being associated with clerks' confidence in their ability to perform the roles assigned to them.[25,28] *"Students' self-efficacy for interprofessional teamwork and patient-centered communication skills were associated with interprofessional collaborative practice."*[28] Dornan et al. saw the impact of confidence in a clerk's ability to communicate with senior doctors and in their overall task performance.[30] As well, overcoming a lack of confidence allowed for increased clerk participation, furthering the goals of the clerk as a learner. *"Lack of confidence made it hard for junior students to communicate with doctors, although doing so made their learning more participative."*[30] Birden et al. identified that assignment of tasks, supervisor support, and confidence from their preceptors helped raise clerks' confidence in their ability to perform assigned roles.[25]

Identity as a team member

In two studies, identity as a team member was robustly described.[30,33] Team identity is directly implicated in professional role identity, and from a clerk's perspective, this gave them confidence in the hospital and the ability to contribute to patient care. *"Students could, however, develop an identity as a member of the team when they interacted on a one-to-one basis with doctors and nurses continuously over a period of time and contributed to patient care all of which became easier as they became more senior."*[30] This viewpoint was supported by the perspective of preceptors and attending physicians who expressed that identifying as a team member confers legitimacy on a clerk's presence in the hospital. *"Consultants commented on how important it was that students consider themselves team members... team membership confers legitimacy, albeit peripheral, on student's presence in the ward."*[33] To develop this sense of identity, clerks felt that they needed to be more involved with patient care.[33] Conversely, clerks that lacked a sense

of team identity reported feeling like their actions were insignificant and did not contribute to team goals.[33]

Knowledge gap: clerks as patient advocates

It was suggested by Gonzalo et al. via their survey of members of medical education, that the amount of time medical students spend with patients allows for greater patient understanding, enhancing their role as advocates.[29] This suggests that patient advocacy might be a dimension of good clerk performance, but our database contained no other references to this behavior. We describe this as a salient gap in the literature. Six papers did discuss the clerk's role in documenting and reporting patient status back to the care team,[23,24,26,27,31,33] which may be viewed as related to advocacy, however this is a skill more closely related to communication as previously described rather than advocacy. As well, patient advocacy is a role described in the CanMEDS framework as Health Advocate[16] and thus may be a feasible role for medical clerks following consideration of their junior status within the healthcare team.

Discussion

The goal of this scoping review was to understand behaviors that aid in medical clerks' contribution to and successful integration within clinical teaching teams. Seven themes were identified across the twelve included articles within this scoping review. These themes were identified as relevant to a clinical clerk's role in team functioning and to a clerk's self-perception of their role within the team. These themes, while presented separately in this review, are closely related. Below we discuss four conclusions that can be drawn when we consider them together:

i) Communication through documentation and case presentation are central to a clerk's performance on the healthcare team.

ii) ii) The development of a professional identity within the healthcare team is an important goal of clerkship and is closely tied with a medical clerk's self-efficacy, which can be understood as finding a balance between seeking autonomy and knowing when to ask for help.

iii) iii) Rapport and relationship building between clerks and the entire interprofessional healthcare team helps facilitate cohesive team function by creating reciprocated trust - subsequently improving patient care.

iv) Acting as patient advocates may be a significant role for clinical clerks; however, the nature of this role within the context of the health team is still poorly understood.

Communication through documentation and case presentation

Communication has a critical role in team integration of a clinical clerk. Specifically, the communication tasks of data collection, documentation and patient case presentation are directly tied to the goals of the care team and involve effective interaction with other team members. They are articulated as Entrustable Professional Activities (EPA) from The Association of Faculties of Medicine of Canada (AFMC) for all medical graduates to possess,[34] and some medical schools explicitly direct clerks' attention to them. For instance, The Harvard Medical School Core Clerkship guide emphasizes *"oral case presentation"* as one of the key components of physician-physician communication and recognizes it as an essential skill regardless of specialty.[35] Our review suggests that these communication tasks influence clerks' performance evaluation because these tasks are used by preceptors as a proxy for clinical competence.[23] Proficiency in these tasks also influences clerks' ability to contribute to team function; when tasks like documentation are done poorly it has a detrimental effect on team performance.[36] Clerks who perform competently in these communication tasks also enjoy greater trust from other team members, and a trustworthy clerk may be given increased learning opportunities through added patient care load.[37,38] Therefore, a suggestion of this scoping review is for medical clerks to appreciate the importance of documentation and patient presentation skills to their ability to contribute to the team, and for clerkship programs to be explicit in highlighting these skills and providing feedback on them.

Development of a professional identity within the healthcare team

Clerkship is the site of important identity work. As Jarvis-Selinger note, competency and identity are complementary[39] meaning that how a clerk views their role on the team is fundamental to their ability to carry out clinical tasks effectively. Our review suggests that the clerk's role, as the most junior member of a working clinical team, requires a balance between *Autonomy* and *Knowing When to Ask for Help*. In terms of autonomy, the goal of all clinical training is progressive independence,[37,38] that is, the gradual attainment of increasing independence as skills develop. *Autonomy* is central to the idea of *Self-Efficacy*,

which Schatte et al. defined as feeling *"empowered to make a difference"* and recognized as an essential component of professional identity development.[40] At the same time, the good clerk recognizes situations when autonomy is inappropriate, and shift to asking for clinical help to safeguard patient care and even patient safety. For example, in a study evaluating malpractice claims, Singh et al. found medical errors involving trainees were predominantly due to teamwork and handoff problems and lack of supervision.[41] The question remains, though, how can clerks judge when they should ask for help? The training environment is intensely competitive and learners are socialized to hide their uncertainty[13] such that asking for help can pose a threat to the clerk's professional credibility.[11] Based on our review, we suggest explicit discussion in preparation for clerkship regarding how to identify situations where autonomy or asking for help are more appropriate.

Rapport, relationship building, and interprofessional trust

Trust between all members of the healthcare team is critical for both patient care and development of a supportive learning environment. In the initial stages of the collaborative process, the development of rapport between interprofessional team members is critical to developing trust as a team, allowing for better patient care through utilizing the strengths of each other's services.[42] Karp et al. explored medical clerks' perspectives on supervisor trust and saw that *"appropriate trust usually involved coaching and close guidance, often with more junior supervisors (Interns or residents). These situations fostered students' motivation to learn, sense of value on the team, and perceived benefits to patients."*[43] These trusted relationships can be further strengthened when senior medical professionals support rather than shame medical clerks.[35] A good clerk combines *Rapport and Relationship Building* with *Interprofessional Collaboration* to develop reciprocal trust between themselves, their supervisors, and their allied health colleagues. In this review, we've emphasized that to integrate well within a team, a clerk should strive to be collegial with all members of the healthcare team. Furthermore, our review further supports the recommendations made by the Association of Faculties of Medicine of Canada to incorporate teaching on the roles and responsibilities of different health professionals within medical curricula.

Patient advocacy

Although being a health advocate is a principal component of the CanMEDS framework, this scoping review found no discussion of the role of *Clerks as Patient Advocates*. This gap seems salient, as Gonzalo et al. have suggested that clerks have the potential to function as patient advocates due to the increased amount of time they spend with patients compared to other team members.[29] We can perhaps infer patient advocacy within the themes identified in our review, such as Communication. When a clerk is given responsibility over a patient, they are expected, at the very least, to be thorough "Data Gatherers."[24] Teams rely on their clerks to know as much information about their patients as they can collect. Clerks often spend more time with their patients than any other team member: they must believe in their own capacity to act as clinical investigators (Self efficacy) and find a way to communicate the gathered information both correctly and in a timely manner (Communication). This gap in the literature reflects the relative lack of training in patient advocacy, as noted by the Canadian Federation of Medical Students, who then developed a training series to address this education gap.[44] We suggest that explicit attention to patient advocacy in the clerk's role could help medical students to maximize meaning and identity in the tasks delegated to them.

Limitations

Limitations of this scoping review include the small sample of 12 included publications and the exclusion criteria implemented. It is possible that valuable publications were excluded during the preliminary stages of the study selection process. The scoping review may have missed supporting information related to the role and contributions of junior medical professionals to patient care, the interplay and coordination of individual competencies within a team setting, and how medical teams can be developed and improved to better serve patient care needs. However, our inclusion and exclusion criteria were designed to better capture the experience of medical clerks, as being the most junior members of the healthcare team. This may limit the overall depth of the scoping review, however, appropriately gauges the current scope of literature on clerks in teams.

Conclusion

This review synthesizes the current knowledge on how medical clerks may successfully contribute to and integrate with the clinical teaching team. We established four major findings relevant to the many team contexts a clerk is exposed to during their clerkship. First, communication via documentation and case presentation stresses the

importance of documentation skills in a clinical environment and is a crucial component of the clinical curriculum. Second, the establishment of a professional identity and the development of rapport with the interprofessional healthcare team are components of the hidden curriculum that help medical clerks grasp the social and professional norms of the healthcare setting. The third finding, establishing rapport and connections with the whole interprofessional healthcare team, illustrates the importance of interprofessional education and collaboration, as it enables cohesive team performance and improves patient care. Interaction with different team members is also essential for the clerks' education as it helps them understand the roles and responsibilities of diverse healthcare professionals. Most current competency frameworks do not explicitly highlight the fourth conclusion, advocating for patients. This highlights the need for further guidance and education in this area of patient care. While existing models cover different competencies, this analysis also demonstrates the relative dearth of studies on the influence of a clerk on a team. Furthermore, current frameworks don't clearly articulate how clerks should be performing these competencies, especially with regards to team function and integration. We hope that this synthesis will provide information to help guide future research into this area.

Conflicts of Interest: The authors have no conflicts of interest to declare.
Funding: No funding was received for this study.
Acknowledgments: The search strategy was developed in consultation with Maren Goodman (MG), Teaching & Learning Librarian at Western Libraries, Western University.
Edited by: Doug Archibald (section editor); Marco Zaccagnini (senior section editor); Marcel D'Eon (editor-in-chief)

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Appendix A. Search strategy files.

Search terms utilizing OVID database as below. Table following to simplify search categories with synonyms for medical clerkship, patient care teams, and clinical competence. **Bolded** numbers are search results for each term.

Ovid MEDLINE(R) ALL <1946 to May 27, 2021>

1 Education, Medical, Undergraduate/ or Clinical Clerkship/ or Students, Medical/ **54009**

2 Patient Care Team/ **67016**

3 Cooperative Behavior/ or Interprofessional Relations/ **90713**

4 "clinical teaching unit".tw,kw. **62**

5 "patient care team".tw,kw. **584**

6 2 or 3 or 4 or 5 **147834**

7 Communication/ **87676**

8 Clinical Competence/ **96934**

9 "clinical competenc*".tw,kw. **3686**

10 "strengths".tw,kw. **60934**

11 7 or 8 or 9 or 10 **241526**

12 "medical clerk*".tw,kw. **125**

13 "medical undergraduate".tw,kw. **414**

14 "elective*".tw,kw. **87086**

15 "rotation*".tw,kw. **143873**

16 "clinical learning".tw,kw. **1626**

17 "medical trainee*".tw,kw. **1224**

18 1 or 12 or 13 or 14 or 15 or 16 or 17 **283534**

19 "teamwork".tw,kw. **10912**

20 "team integration".tw,kw. **63**

21 19 or 20 or 6 **154448**

22 "team*".tw,kw. or 21 **298611**

23 11 and 18 and 22 **1368**

1 Education, Medical, Undergraduate/ or Clinical Clerkship/ or Students, Medical/	2 Patient Care Team/	7 Communication/
12 "medical clerk*".tw,kw.	3 Cooperative Behavior/ or Interprofessional Relations/	8 Clinical Competence/
13 "medical undergraduate".tw,kw.	4 "clinical teaching unit".tw,kw.	9 "clinical competenc*".tw,kw.
14 "elective*".tw,kw.	5 "patient care team".tw,kw.	10 "strengths".tw,kw.
15 "rotation*".tw,kw.	19 "teamwork".tw,kw	
16 "clinical learning".tw,kw.	20 "team integration".tw,kw.	
17 "medical trainee*".tw,kw.	22 "team*".tw,kw.	