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Reviewers' views on the editorial review processes of the Canadian Medical Education Journal
Points de vue des évaluateurs sur les processus de révision éditoriale de la Revue canadienne d'éducation médicale

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Résumé de l'article

Contexte : L'évaluation par les pairs fait partie intégrante du processus scientifique. Des efforts continus sont nécessaires pour améliorer ce processus, tant pour l'évaluateur que pour la revue scientifique qui procède à l'évaluation par les pairs. Ce travail décrit les expériences des réviseurs de la Revue canadienne d'éducation médicale (CMEJ) qui acceptent ou refusent les invitations à évaluer.

Méthodes : Nous avons déployé des questionnaires entre décembre 2020 et mai 2022. Nous avons calculé des statistiques descriptives pour chaque groupe de réponse (invitations acceptées ou refusées). Nous avons analysé les commentaires à l'aide d'une analyse de contenu conventionnelle.

Résultats : Les évaluateurs de la CMEJ ont décrit leurs expériences dans trois grandes catégories de facteurs : individuels, contextuels et journaliers. Les participants étaient tout à fait d'accord ou d'accord pour réviser un article (n = 95) parce que l'article était : dans leur domaine d'expertise (84/95 = 88,4 %); dans un sujet d'intérêt (n = 83, 87,4 %); d'une longueur appropriée (n = 79, 83,2 %); pertinent pour leur travail et/ou leurs intérêts (n = 77, 81,1 %); de qualité suffisante (n = 75, 78,9 %); éducatif (n = 72, 75,8 %) et offrait l'occasion de rester à jour sur la recherche actuelle (n = 69, 72,6 %). La raison la plus souvent invoquée par les participants (n = 17) pour décliner leur invitation à procéder à une évaluation pour la CMEJ était une charge de travail concurrente (n = 14, 82,4 %). Les évaluateurs ont apprécié les instructions des évaluateurs, le fait de connaître le résultat de l'article et de voir ce que les autres évaluateurs avaient à dire.

Conclusion : Ce travail décrit les facilitateurs et les obstacles rencontrés par les évaluateurs de la CMEJ et souligne la nécessité de reconnaître le travail des évaluateurs, tout en incitant les institutions et les revues à soutenir les activités d'évaluation par les pairs.

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Abstract

Background: Peer review is an integral part of the scientific process, ongoing efforts are needed to improve this process for both the reviewer and the scientific journal conducting peer review. This work describes the Canadian Medical Education Journal (CMEJ) peer reviewers' experiences in accepting or declining invitations to review.

Methods: We deployed questionnaires between December 2020 and May 2022. We calculated descriptive statistics for each response group (accepted or declined invitations). We analyzed open-ended comments using conventional content analysis.

Results: CMEJ Reviewers described their experiences within three broad categories of factors: individual, contextual, and journal. Participants strongly agreed or agreed to review an article (n = 95) because the article was: within their area of expertise (84/95 = 88.4%); within a topic of interest (n = 83, 87.4%); an appropriate length (n = 79, 83.2%); relevant to their work and/or interests (n = 77, 81.1%); of sufficient quality (n = 75, 78.9%); educational (n = 72, 75.8%); and provided the opportunity to remain up-to-date on current research (n = 69, 72.6%). Participants' (n = 17) most cited reason for declining their invitation to review for CMEJ was competing workloads (n = 14, 82.4%). Reviewers appreciated reviewer instructions, knowing the article's outcome, and seeing what other reviewers had to say.

Conclusion: This work describes the enablers and barriers of CMEJ reviewers and highlights the need to acknowledge peer reviewers' work, while challenging institutions and journals to support peer review activities.

Résumé

Contexte : L'évaluation par les pairs fait partie intégrante du processus scientifique. Des efforts continus sont nécessaires pour améliorer ce processus, tant pour l'évaluateur que pour la revue scientifique qui procède à l'évaluation par les pairs. Ce travail décrit les expériences des réviseurs de la Revue canadienne d'éducation médicale (CMEJ) qui acceptent ou refusent les invitations à évaluer.

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Conclusion : Ce travail décrit les facilitateurs et les obstacles rencontrés par les évaluateurs de la CMEJ et souligne la nécessité de reconnaître le travail des évaluateurs, tout en incitant les institutions et les revues à soutenir les activités d'évaluation par les pairs.

Introduction

The scholarly peer review process is essential to publishing good evidence. With peer reviewers spending about three hours on each review,[1–3] the peer review process is a substantial investment of time and intellectual capital. There is evidence and support for a motivational approach that includes both intrinsic and extrinsic rewards.[4] Given the importance and cost of peer review, the Canadian Medical Education Journal (CMEJ) launched initiatives to improve their peer review process for authors, reviewers, and editors. These initiatives include the encouragement of team reviews[5] and recognition of prior high-quality peer reviews as part of an expedited review process.[6]

Peer review is an integral part of the scientific process, and ongoing effort is needed to improve this process for both the peer reviewer and the scientific journal[7]. By describing CMEJ peer reviewers' experiences in populations who accepted or declined their invitation to review, we sought to expand on the work performed by Tite and Schroter (2007).[7] The present study addressed two research questions: (1) What were the reasons invited reviewers accepted or declined their invitation? and (2) based on their decision to review, what were their experiences and perspectives with the CMEJ review process?

Methods

Study design

The University of Saskatchewan's Behavioural Research Ethics Board (BEH-2055, August 6, 2020) approved this cross-sectional survey study. Implied consent was received from all participants using the SurveyMonkey Audience (www.surveymonkey.com/mp/audience) online survey platform.

Context

First published in 2010, the CMEJ is an online open-access peer-reviewed journal exploring new developments and critical commentary that may influence institutional, regional, and national policy and/or practices in medical education.

The CMEJ uses a single-blind review process. Peer reviewers remain anonymous to authors unless they choose to sign their review.

The CMEJ website is hosted by the University of Calgary's Journal Hosting service (https://journalhosting.ucalgary.ca/).

Prospective reviewers are asked to respond within one week and complete their review within two weeks of receiving the invitation. Automated email reminders are sent on the day following each deadline. All invitation and reminder emails are designed to allow for one-click acceptance to minimize user burden.

Population of reference, study population, and participant eligibility

The population of reference consisted of all the reviewers listed in the CMEJ reviewer database. The study population comprised individuals who accepted or declined an invitation to review for CMEJ between December 2020 and May 2022. We only invited reviewers to participate once over the course of the study period. Over this period, 848 peer review invitations were accepted, declined, or ignored by 357 prospective reviewers eligible to participate in this study. (Appendix A; Suppl Figure 1).

Recruitment

We invited CMEJ reviewers to respond to the online survey using the SurveyMonkey Audience (www.surveymonkey.com/mp/audience) using the in-application email invitation system.

Reviewer's experiences and perspectives questionnaire

This study used a 26-item questionnaire titled, "The experiences and perspectives of individuals providing peer review for the Canadian Medical Education Journal," with 5-point Likert scale responses. We adapted items exploring reasons for accepting or declining invitations to review and overall experience from work by Tite and Schroder 2007[7] and Gibson et al. 2008,[8] respectively. The authors of this study developed the remaining items. We tested and further adapted all questionnaire items using open-ended feedback collected in a pre-test (Sept 2020, *n* = 8) and pilot study (Oct 2020, *n* = 66) cohort of CMEJ reviewers from 2018-2019. The questionnaire contained six main domains tailored to two audiences: potential reviewers who declined or accepted invitations to review for the CMEJ. We describe domains, items, and adaptation sources in detail in Appendix A; Suppl Table 1.

We developed open-ended questions *de novo* to gain insight into reviewer experiences in their own words that might influence their decision to accept or decline an invitation to review (items 7-9, 11, 16a-16e, 20, 25, Appendix A; Suppl Table 1).

Data analysis

The response group calculated descriptive statistics (accepted or declined invitations to review). We performed all statistical analyses using R Core Team (2018). R: A language and environment for statistical computing (R Foundation for Statistical Computing, Vienna, Austria, URL https://www.R-project.org/). Packages critical for analysis included dplyr,[9] ggplot2,[10] lubridate,[11] readxl,[12] stringr,[13] tidyverse,[14] tidy.[15]

We analyzed open-ended comments using conventional content analysis, a systematic and inductive process of coding to identify patterns and meaning within the data.[16] JO read through the qualitative data to inductively develop an initial set of codes, which were discussed and approved by the other two authors. We iteratively collapsed and combined codes into categories and grouped them into clusters until all textual responses could be categorized into the coding framework using NVivo 12 (QSR International). We developed the final coding tree with code descriptions and exemplars (Appendix A; Suppl Table 2).

Results

Participant Characteristics.

The final study sample included 112 (31.4%) CMEJ reviewers (95 accepted invitation to review (26.6%); 17 declined an invitation to review (4.8%)) of the 357 eligible CMEJ reviewers who accepted or declined an invitation to review within the study time frame. The study population subsets (accepted or declined an invitation to review) did not differ significantly by occupation, country of residence, peer review experience, or CMEJ membership length (Appendix A; Table 1 and Suppl Figure 1).

What were the reasons invited reviewers accepted or declined their invitation?

Almost all of the 95 participants who accepted their invitation to review and responded to our survey cited the assigned article as being within their area of expertise (strongly agreed plus agreed $n = 84$, 88.4%) or a topic of interest ($n = 82$, 86.3%) (Figure 1). Survey respondents' most cited reason for declining their invitation to review for CMEJ was a conflict with competing workloads ($n = 14$, 82.4%). Respondents described a lack of interest in the submission's topic ($n = 4$, 23.5%), receiving too many invitations to review from all journals ($n = 5$, 29.4%), a lack of qualification ($n = 3$, 17.6%), and a lack of submission quality ($n = 2$, 11.8%) as other reasons for declining their invitation to review (Figure 2, Appendix A; Suppl Table 2).

What were the experiences and perspectives of reviewers who accepted or declined?

Respondents who accepted the invitation to review rated the given article as an appropriate length ($n = 79$, 83.2%), relevant to their work and/or interests ($n = 77$, 81.1%), of sufficient quality ($n = 75$, 78.9%), educational ($n = 72$, 75.8%) and providing the opportunity to remain up-to-date on current research ($n = 69$, 72.6%). Sixty-one percent ($n = 54$, 56.8%) of respondents agreed that the article presented could make a significant contribution to existing research (Figure 1).
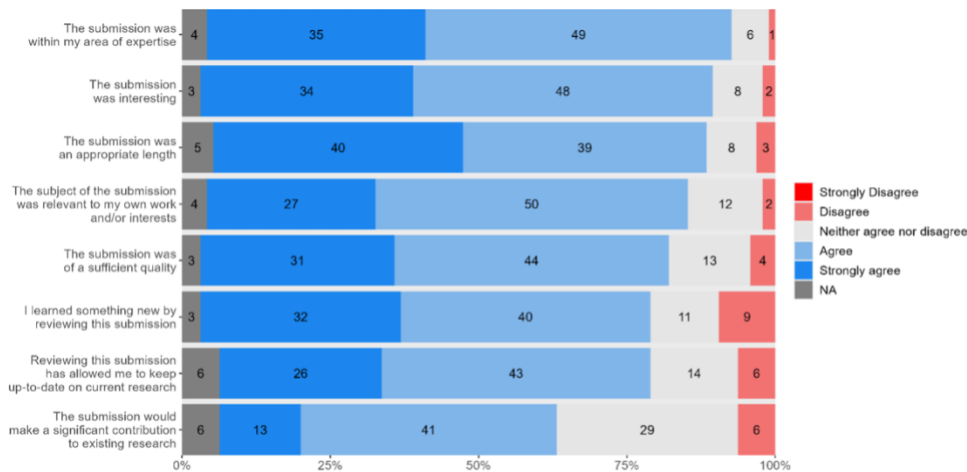

Figure 1. Reasons for accepting a CMEJ peer review invitation (n=95). NA – Not applicable includes 'choose not to answer' and 'not applicable' responses and missing data.
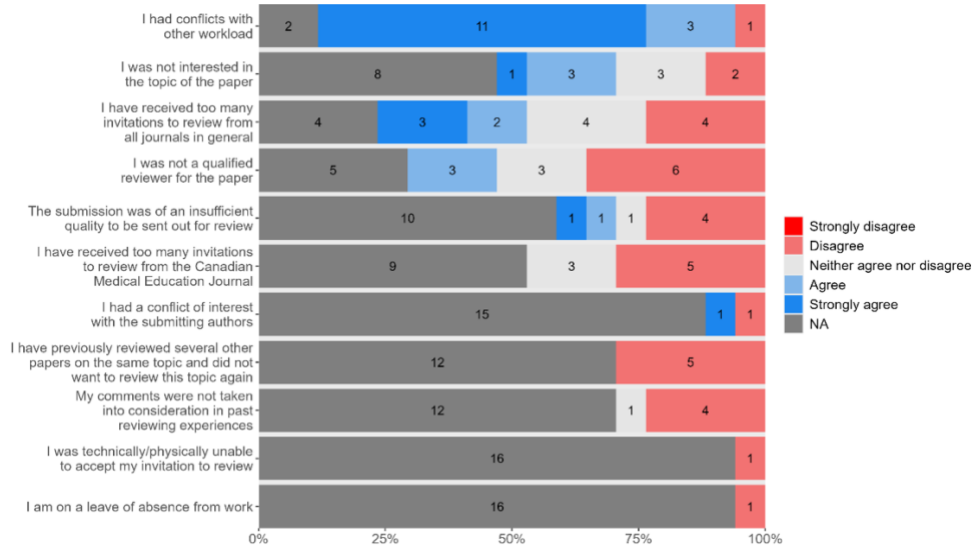
Figure 2. Reasons for declining a CMEJ peer review invitation (n = 17). NA – Not applicable includes 'choose not to answer' and 'not applicable' responses and missing data.

Those accepting their invitation to review agreed that they were provided with sufficient time to accept and complete their invitation to review (seven days to accept an invitation to review, $n = 88$, 92.6%; 14 days to complete a review, $n = 80$, 84.2%). Individuals declining their invitation to review similarly agreed they were provided with sufficient time ($n = 16$, 94.1%) and an appropriate number of reminders ($n = 13$, 76.5%) to decline to review.

Reviewers described their experiences with the CMEJ review process within three broad categories: individual, contextual, and journal factors (Figure 3).
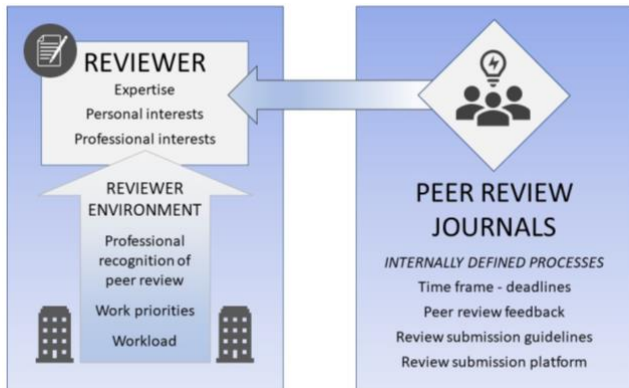

Figure 3. A theoretical framework describing facilitators and barriers to participating in scientific peer review.

Individual factors. We noticed through our content analysis that individual reviewers were motivated by manuscript content that aligned with their interests and expertise. When reviewers did not receive feedback about the final decision and comments from other reviewers, it contributed to a negative experience (Figures 1 and 2).

Contextual/environmental factors. Respondents described workload, conflicting work demands and reviewing for other journals as the most common reasons for declining an invitation to review. Conversely, a reasonable workload at the time was twice mentioned as a reason for accepting an invitation to review (Figure 1, Suppl Table 2).

Journal factors. Technical aspects of the review process, such as instructions to reviewers, the invitation and review form, additional support/instructions offered by the editor or journal staff, and deadlines, influenced reviewers' satisfaction. Most comments were positive toward the instructions (clear expectations, helpful, accessible), guidelines, and resources provided. However, some respondents felt the instructions should specify the journal section, and be more clear and concise. In contrast to questionnaire responses, most respondents commented that the deadlines to complete a review were too short. However, they appreciated the editors' flexibility with deadlines when they requested extensions. Respondents identified interactions with the journal team/staff as a contributing factor to their positive experiences. When further information was required from the journal, the timeliness of the response was very important (Figure 1, Suppl Table 2).

Discussion

This work aimed to define the reasons invited reviewers accepted or declined their invitation to review. Reviewers accepting an invitation for peer review did so when the submission matched their area of expertise and was

relevant to the reviewer's interest and work. These findings align with those of Tite and Schroter 2007.[7] When reviewers declined their invitation to review, it was for reasons beyond the control of the journal–competing work interests, lack of appropriate expertise and the absence of professional and institutional recognition of review contributions, all of which align with previous work.[7,17,18] Specific resources (reviewer guidelines and instructions), system designs (deadline requirements, automated reminders, exposure to other reviewers' comments, etc.), and editorial board communication style (e.g. editorial decision notifications, etc.) may enhance reviewers' experiences.

Our work highlights the need to support reviewers using automated invitation and submission reminders and provide clear and concise section-specific guidelines. The importance of reviewer guidelines has not been empirically measured but is likely critical in producing high-quality reviews. Almost 40% of Publons Global State of Peer Review respondents reported never receiving any formal peer review training, and the majority agreed that training is both necessary (88%) and would have positive impacts on the peer review process (80%).[19] Clear and concise reviewer guidelines would likely support reviewers.

We used both quantitative and qualitative data in this work, providing strength to our findings. Our study population was limited to a sample of reviewers from a single journal. This study included fewer individuals declining their invitation to review than those who accepted their invitation.

Reviewers accepted or declined their invitations to review based on individual-, contextual-, and journal-level factors. Only one-third of these reasons were under the journal's control. Journals can work with academic and funding organizations to increase reviewers' willingness to review.

Conclusion

This work describes the motivators and barriers of those invited to the peer review process at the CMEJ, highlights the need to acknowledge peer reviewers' work, and challenges institutions and journals to support reviewers in this labourious endeavour. Future research should investigate reviewer experiences at multiple journals to allow comparative effectiveness of journal resources, policies, and systems.

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Appendix A. Supplemental Tables and Figures.

Supplemental Table 1. Reviewers' views on the editorial review processes of the Canadian Medical Education Journal questionnaire

Item Number	Item	Response Options	Survey Group	Source the item was adapted from
	STUDY IDENTIFICATION			
1	Please enter your study ID number. This nine-digit number is listed in the e-mail inviting you to this survey.	#########	All Respondents	NA
2	Please indicate if you chose to accept or decline your last invitation to review for the Canadian Medical Education Journal.	Accepted Invitation, Declined Invitation	All Respondents	NA
	DECLINED INVITATION: OVERALL REVIEWER EXPERIENCE			
3	How would you rate your most recent reviewing experience with the Canadian Medical Education Journal?	Excellent, Very good, Neutral, Poor, Very Poor, Choose not to answer	Declined Invitation to Review	Gibson et al. 2008
4	Please indicate your level of agreement or disagreement with the following statement: declining my invitation to review was easy.	Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly Disagree, Choose not to answer	Declined Invitation to Review	NA
5	Please fill in the blank: I was provided with a/an_____ amount of time to decline my invitation to review.	Far too long, Too long, Appropriate, Too short, Far too short, Choose not to answer	Declined Invitation to Review	NA
6	Please fill in the blank: I received _____ reminders to respond to my invitation to review.	No, Far too few, Too few, An appropriate number of, Too many, Far too many, Choose not to answer	Declined Invitation to Review	NA
7	Please tell us more about why you chose the following response to the statement, "declining my invitation to review was easy."	Open ended. Text box.	Declined Invitation to Review	NA
8	Please tell us more about your response to, "I was provided with a _____ amount of time to decline my invitation to review."	Open ended. Text box.	Declined Invitation to Review	NA
9	Please tell us more about your response to, "I received _____ reminders to respond to my invitation to review."	Open ended. Text box.	Declined Invitation to Review	NA
	DECLINED INVITATION: REASONS FOR DECLINING THE INVITATION TO REVIEW			
	Please think about the reason you declined your most recent invitation to review for the Canadian Medical Education Journal. Indicate your level of agreement or disagreement with the following statements:			
10a	I was not interested in the topic of the paper.	Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly Disagree, Choose not to answer	Declined Invitation to Review	Tite, L. and Schroter, S. 2007.
10b	I have received too many invitations to review from the Canadian Medical Education Journal.	Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly Disagree, Choose not to answer	Declined Invitation to Review	Tite, L. and Schroter, S. 2007.
10c	I have received too many invitations to review from all journals in general.	Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly Disagree, Choose not to answer	Declined Invitation to Review	Tite, L. and Schroter, S. 2007.
10d	The submission was of an insufficient quality to be sent out for review (e.g. technical errors such as a lack of research ethics board approval, an abundance of grammatical errors, etc.).	Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly Disagree, Choose not to answer	Declined Invitation to Review	Tite, L. and Schroter, S. 2007.
10e	I had conflicts with other workload.	Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly Disagree, Choose not to answer	Declined Invitation to Review	Tite, L. and Schroter, S. 2007.
10f	I was not a qualified reviewer for the paper.	Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly Disagree, Choose not to answer	Declined Invitation to Review	Tite, L. and Schroter, S. 2007.
10g	I have previously reviewed several other papers on the same topic and did not want to review another one like the others.	Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly Disagree, Choose not to answer	Declined Invitation to Review	Tite, L. and Schroter, S. 2007.
10h	My comments were not taken into consideration in past reviewing experiences.	Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly Disagree, Choose not to answer	Declined Invitation to Review	Tite, L. and Schroter, S. 2007.
10i	I am on a leave of absence from work (e.g. personal or medical leave, sabbatical, etc.).	Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly Disagree, Choose not to answer	Declined Invitation to Review	Tite, L. and Schroter, S. 2007.

Item Number	Item	Response Options	Survey Group	Source the item was adapted from
10j	I was technically/physically unable to accept my invitation to review (e.g. technical difficultly logging into my account, downloading the submission, navigating the website, etc.)	Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly Disagree, Choose not to answer	Declined Invitation to Review	NA
10k	I had a conflict of interest with the submitting authors.	Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly Disagree, Choose not to answer	Declined Invitation to Review	Tite, L. and Schroter, S. 2007.
11	Are there any other reasons why you did not accept your invitation to review?	*Open ended. Text box.*	Declined Invitation to Review	NA
ACCEPTED INVITATION: OVERALL REVIEWER EXPERIENCE				
12	How would you rate your most recent reviewing experience with the Canadian Medical Education Journal?	Excellent, Very good, Neutral, Poor, Very Poor, Choose not to answer	Accepted Invitation to Review	Gibson et al. 2008
13	Were you able to complete your review of the article presented?	Yes, No, Choose not to answer	Accepted Invitation to Review	NA
	Please indicate your level of agreement or disagreement with the following statements:			
14a	Accepting my invitation to review was easy	Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly Disagree, Choose not to answer	Accepted Invitation to Review	NA
14b	I was provided with a sufficient period of time to accept my invitation to review	Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly Disagree, Choose not to answer	Accepted Invitation to Review	NA
14c	I was provided with a sufficient period of time to complete my review	Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly Disagree, Choose not to answer	Accepted Invitation to Review	NA
14d	I was provided with an appropriate number of reminders to accept my invitation and/or complete my review	Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly Disagree, Choose not to answer	Accepted Invitation to Review	NA
14e	Overall, the review process met my expectations.	Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly Disagree, Choose not to answer	Accepted Invitation to Review	NA
15	Please fill in the blank.I received _____ reminders to accept my invitation and/or complete my review.	No, Far too few, Too few, An appropriate number of, Too many, Far too many, Choose not to answer	Accepted Invitation to Review	NA
	Please tell us more about why you chose "{{ Q14.R5 }}" when presented with the following statement:			
16a	Accepting my invitation to review was easy	*Open ended. Text box.*	Accepted Invitation to Review	NA
16b	I was provided with a sufficient period of time to accept my invitation to review	*Open ended. Text box.*	Accepted Invitation to Review	NA
16c	I was provided with a sufficient period of time to complete my review	*Open ended. Text box.*	Accepted Invitation to Review	NA
16d	I was provided with an appropriate number of reminders to accept my invitation and/or complete my review	*Open ended. Text box.*	Accepted Invitation to Review	NA
16e	Overall, the review process met my expectations.	*Open ended. Text box.*	Accepted Invitation to Review	NA
ACCEPTED INVITATION: REVIEW SUBMISSION PROCESS				
	Please indicate your level of agreement or disagreement with the following statement:			
17a	Accessing the article I was invited to review was straightforward.	Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly Disagree, Choose not to answer	Accepted Invitation to Review	NA
17b	The reviewer guidelines were easy to follow. The reviewer guidelines are a set of guidelines and resources presented during the review submission process.	Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly Disagree, Choose not to answer	Accepted Invitation to Review	NA
17d	The reviewer form was easy to use. When available, the reviewer form is presented during the review submission process. It provides a series of structured questions to guide the reviewer through the peer review process.	Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly Disagree, Choose not to answer	Accepted Invitation to Review	NA

Item Number	Item	Response Options	Survey Group	Source the item was adapted from
17e	Submitting my review was easy.	Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly Disagree, Choose not to answer	Accepted Invitation to Review	NA
ACCEPTED INVITATION: REASONS FOR ACCEPTING THE INVITATION TO REVIEW				
	Please think about the reasons you chose to review the article submitted to the Canadian Medical Education Journal. Indicate your level of agreement or disagreement with the following statements. I chose to review this article because…		Accepted Invitation to Review	
18a	The submission was within my area of expertise.	Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly Disagree, Choose not to answer	Accepted Invitation to Review	Tite, L. and Schroter, S. 2007.
18b	The submission was of a sufficient quality to be sent out for review (e.g. void of technical errors such as a lack of research ethics board approval, an abundance of grammatical errors, etc.).	Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly Disagree, Choose not to answer	Accepted Invitation to Review	Tite, L. and Schroter, S. 2007.
18c	The submission was an appropriate length.	Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly Disagree, Choose not to answer	Accepted Invitation to Review	NA
18d	I learned something new by reviewing this submission.	Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly Disagree, Choose not to answer	Accepted Invitation to Review	Tite, L. and Schroter, S. 2007.
18e	The submission was interesting.	Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly Disagree, Choose not to answer	Accepted Invitation to Review	Tite, L. and Schroter, S. 2007.
18f	The submission would make a significant contribution to existing research.	Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly Disagree, Choose not to answer	Accepted Invitation to Review	Tite, L. and Schroter, S. 2007.
18g	The subject of the submission was relevant to my own work and/or interests.	Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly Disagree, Choose not to answer	Accepted Invitation to Review	Tite, L. and Schroter, S. 2007.
18f	Reviewing this submission has allowed me to keep up-to-date on current research.	Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly Disagree, Choose not to answer	Accepted Invitation to Review	Tite, L. and Schroter, S. 2007.
WORKING WITH EDITORS AND STAFF AT THE CANADIAN MEDICAL EDUCATION JOURNAL				
	To what extent do you agree or disagree with the following statements regarding communication with the Journal's editorial team?			
19a	The editors were polite and professional in their communication with me/us.	Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly Disagree, Choose not to answer	All Respondents	NA
19b	I was satisfied with the depth of information provided in answers to my inquiries.	Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly Disagree, Choose not to answer	All Respondents	NA
19c	My inquiries were answered in a timely manner.	Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly Disagree, Choose not to answer	All Respondents	NA
20	Please leave any comments you have about your experience submitting a review in the box below.	*Open ended. Text box.*	All Respondents	NA
DEMOGRAPHIC CHARACTERISTICS				
21	What continent do you live in?	Africa, Asia, Australia, Europe, North American, South America, Choose not to answer	All Respondents	NA
22	Which one of the following job titles best applies to you?	Assistant Professor (Clinical), Assistant Professor (PhD), Associate Professor (Clinical), Associate Professor (PhD), Fellow, Lecturer/Instructor, MD/PhD, Physician, Professor (Clinical), Professor (PhD), Resident, Other (Please specify)	All Respondents	NA
23	Please estimate the number of reviews you have provided for this and all other peer reviewed journals in the past five years.	Less than or equal to 3, 4 to 9, Greater than or equal to 10, Choose not to answer	All Respondents	NA

Item Number	Item	Response Options	Survey Group	Source the item was adapted from
24	To which gender identity do you most identify?	Female, Male, Non- binary, Prefer not to answer	All Respondents	NA
25	Please think of your most recent invitation to review from the Canadian Medical Education Journal. Is there anything else you'd like us to know about your experience with the Canadian Medical Education Journal?	Open ended. Text box.	All Respondents	NA
26	OPTIONAL: If you would like this study's final results sent to you please enter your e-mail address in the text box below. Your e-mail address will not be used for any other purpose other than communicating the results of this study.	Open ended. Text box.	All Respondents	NA

NA – not applicable. Items and response options were developed by the research team and were not adapted from an existing source.

Supplemental Table 2. Open ended questionnaire item responses

Name	Description	Exemplar	References
1. Content	Reviewers were motivated by content that was well-matched to their interests and expertise and was of high quality. This was often a reason for accepting an invitation to review; less often, unfamiliarity with the methodology was cited as a reason for declining the review.	...the manuscript's topic was one I felt qualified to review and the authors had submitted a fine document (in other words, they did their homework to make sure they met the CMEJ standards).	17
1.1 Interest & Expertise	Reviewers who accepted an invitation to review often cited the manuscript topic as one the reviewer felt qualified to review, the paper as well-matched to the reviewer's interests and expertise, and the topic as relevant to experience and in the reviewer's field. Less often, unfamiliarity with the methodology was cited as a reason for declining the review.	The match of article content to my interests was done well ...the methodology was not familiar enough to me to feel comfortable reviewing	13
1.2 Quality	Comments on the quality of the manuscript – sometimes when it was good quality, but most often when the reviewer felt the editor should be more selective or the submission should not have moved forward for review.	Editors could be a bit more selective about reviews at the point of submission. ...the only issue is the quality of papers forwarded.	7
2. Deadline	Pertains to the length of time a reviewer has to accept an invitation to review or to complete the review. This was the second most-commented category.		37
2.1 Flexible	Reviewers appreciated the editors/Journal's flexibility with deadlines.	I needed extra time to complete my review - the team was very accommodating.	8
2.2 Reasonable	Reviewers commented that deadlines were reasonable.	One week period to review the abstract and two-week period to review the article was reasonable.	5
2.3 Short	Reviewers commented the deadlines to complete a review were too short. This was accompanied by comments pertaining to wanting to complete a quality, in-depth review, including looking up references cited, or reviewing potentially controversial topics. Reviewers noted the time to review doesn't start from when the review is accepted, but from when the invitation was sent.	I wanted to look up references for reviewing the paper in depth, but due to the lack of sufficient time, I could only overview the paper. And even then, I was late in submitting the review. So, I think reviewers should be given more time. 2 weeks was a short time ... Three weeks would have been better.	12
3. Feedback, learning	Reviewers appreciate knowing the outcome and seeing what other reviewers had to say and find reviewing for the CMEJ to be a positive learning experience. When they do not receive this feedback, it contributes to a negative experience.	I always learn a lot from it [reviewing for CMEJ] and I have important insights as a researcher. I have asked for constructive feedback and not really gotten any. it would be nice to remain in the loop about papers I review, in terms of what aspects were incorporated or whatever became of the studies. As of now, neither of these things occur, ...which creates a bit of a gap that leaves me wanting more as a reviewer.	15
4. Journal team, staff	Relating to interactions with the editorial team, editor, or administrative staff.	You have an excellent team - smart, personable, effective, efficient, understanding. I recommend CMEJ to everyone I work with	11
5. Policy issues			7

Name	Description	Exemplar	References
5.1 Future research	One respondent suggested future research.	...would be interesting to know if the COVID-19pandemic has made any difference in the CMEJ's ability to have peer reviews done on time.	1
5.2 Indexing	One respondent noted the CMEJ is not well-indexed.	... it's not well indexed...	1
5.3 Learners	Comments pertaining to the student reviewing experience, engaging new reviewers, and creation of a section for learners to encourage submissions from medical students and residents.	I felt more competent to provide a comprehensive review as an intern reviewer and was provided reassurance that I can complete more reviewing tasks independently. I commend the editors [*sic*] courage to engage reviewers that are not normally considered reviewers.	3
5.4 Mandatory review	Comments pertaining to a Special Issue policy to contribute to peer review of other submissions prior to an author's own manuscript moving forward.	Looked like it was mandatory to review a particular number of articles before getting review on my own submission.	1
5.5 Publishing policies	Comments pertaining to journal publishing policies (e.g. open-access, publishing charges, and publishing online).	I appreciate that the journal is online and open access without publication charges.	1
6. Technical	Comments pertaining to the technical aspects of the review process such as instructions to reviewers, the Open Journal Systems platform, and the workflow process.		118
6.1 Instructions	Comments pertaining to the instructions provided to reviewers, including in the invitation to review, the review form, and additional support/instructions offered by the editor or journal staff. Most comments were positive towards the instructions (clear expectations, helpful, accessible), guidelines, and resources provided. However, some respondents felt the instructions should specify the journal section, and be more direct, less convoluted, shorter, and clearer about whether the review should be done in Word with Tracked Changes or in the review form. One reviewer wondered why the author names were contained within the manuscript file.	It was a straightforward process. Clearly outlined. Information that I required was available to me. Timelines were reasonable. ...editors should recommend critical appraisal checklists for the reviewers to use. make it clearer that the review is for a commentary versus regular article.	35
6.1.1 Review form	Respondents made suggestions for improving the review form(s). It highlights that some reviewers are receiving the review request in different formats – some are receiving a structured review form and others are not.	...make more explicit what is communicated to the authors and what is not consider developing a review framework applicable to specific article types The form on this last submission was greatly improved. It provided a much-improved way of framing the review structure the reviews, so that people with less experience providing constructive reviews can still contribute meaningful feedback. ...providing separate boxes for comments for the author and editor that refer to different facets of the paper and	6

Name	Description	Exemplar	References
		are cued by questions, e.g., "Was the analysis appropriate?", "Do the results support the conclusion?", "Are the Tables and Figures appropriate?", etc.	
6.1.2 Support	Reviewers described situations where further information was required. Timeliness of the response matters.	I requested clarification for one of the review components, but I received the answer more than one week after that The invitation to review referred to a section that the manuscript was aligned with, but I could not decipher what section that was. ...Luckily, [the section editor] was able to clarify for me right away.	6
6.2 Platform	Comments about the user-friendliness of the online platform used for the review process. These were clearly/evenly divided between positive and negative perspectives. Negative comments included too many clicks and examples of trouble with access, uploading files, and failed submissions.	The platform was easy to use user friendliness of the online dashboard The platform for reviews is confusing and cumbersome... The manuscript review web portal system is a bit awkward to use	18
6.3 Process	Comments about the overall process of completing a review for the CMEJ. Most comments were positive (43/60), some were negative (11/60) and a few were neutral (6/60). Most comments were about the Process of completing a review (probably due to the wording of 2/4 open-ended questions: "Non-agreement with: 'Overall, the review process met my expectations'" and "Comments you have about your experience submitting a review in the box below." Positive comments were largely "easy," "seamless," "efficient," and "straightforward." One reviewer noted the process has improved over the past couple of years. Negative experiences were due to difficulties receiving or accepting the invitation to review (due to different email/log in details), challenges accessing the article text file, bad timing of the request (shortly after having a paper declined), multiple reminder emails (although other respondents appreciated these), and clearer communication from other journals re: reminders and acknowledgement of receipt. One respondent wondered if there was an appeal process for reviews that are too dogmatic or incorrect. One respondent noted CMEJ emails consistently end up in their junk mail.	Downloading of the article and uploading of the review were simple, straight forward processes. I also review manuscripts for Academic Medicine and their communications are a little clearer--for example reminders and acknowledgement of receipt of review	65
6.3.1 Familiar	Reviewers who have prior experience reviewing for the CMEJ reported a familiar process/no surprises. One respondent noted consistently bad experiences.	Have reviewed many articles before, no surprises here I was unable to upload a PDF or Word file of my review on the review website.	4

Name	Description	Exemplar	References
		...This is the 2nd time I have had the same problem.	
7. Workload	The most common reason for declining an invitation to review was Workload, described as conflicting work demands and sometimes as prioritizing reviewing for other journals. A reasonable Workload was twice mentioned as a reason for accepting an invitation to review.	Pandemic exhaustion and overwork. I am being careful of my health and limiting my commitments. My employers no longer support this activity as it is not part of my job description. Given the first point I choose (hopefully temporarily) no longer to devote my weekends and evenings to reviews.	10
7.1 Conflicting work demands	Comments pertaining to balancing the request to review with other commitments.	I think the most challenging aspects of deciding to review or not concern 1) timing with other personal/professional commitments	7
7.2 Reviews for other journals	Comments pertaining to prioritizing work for other journals.	Again, too busy - stretched too thin. I am on a board of editors for another journal. Those reviews take priority and I am not really able to review for any other journals because I review so much for them.	1
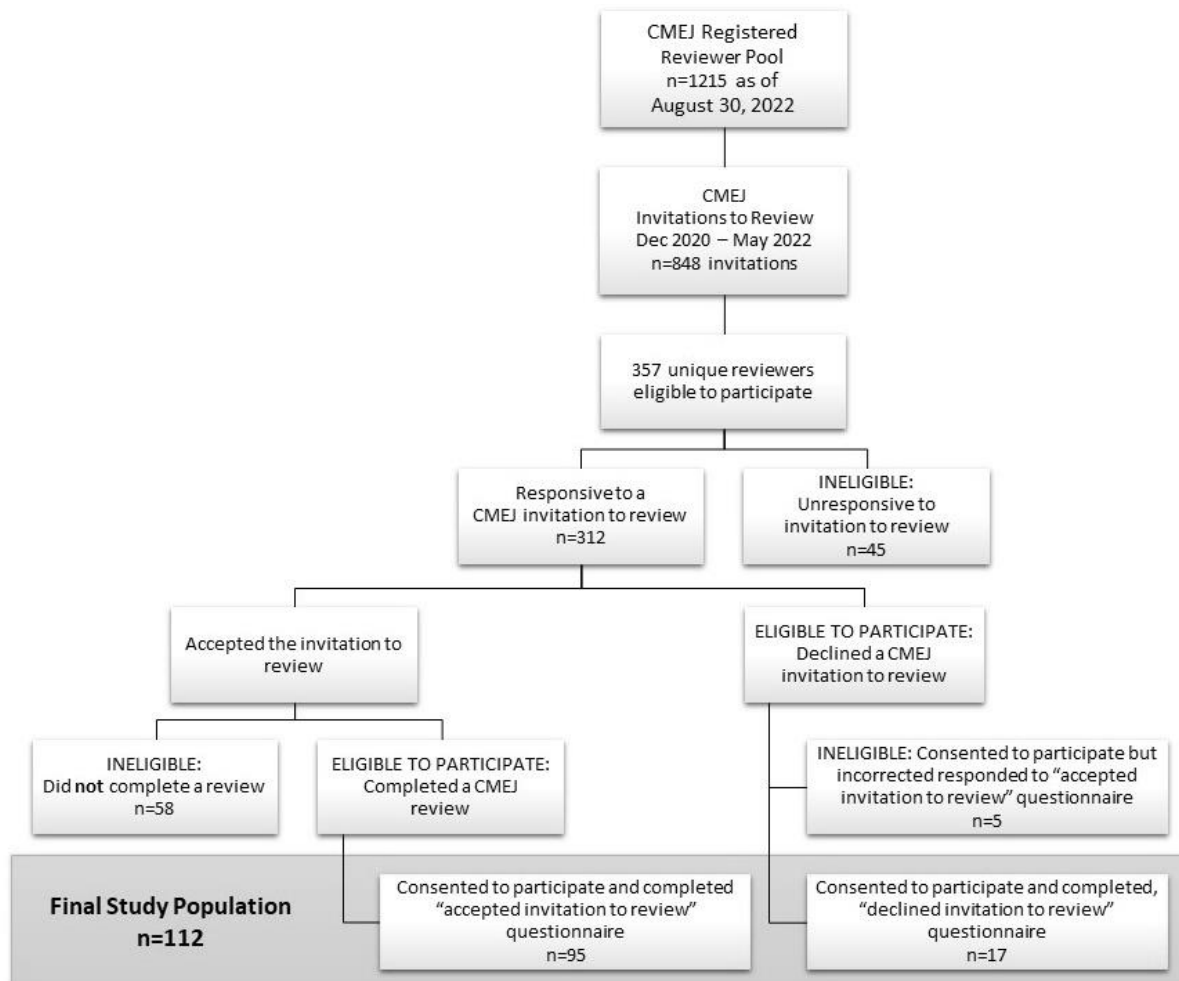
Supplemental Figure 1. Study eligibility, consent and participation