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June 18, 2021

RE: World Journal of Orthopedics Manuscript NO: 66683 – Notification on manuscript revision

Dear Editorial Team of *The World Journal of Orthopedics*

We are honored that our study “Adductor canal block implementation and femoral nerve block deimplementation: a new look at implementation science” has been deemed as a manuscript that is preliminarily acceptable for publication following appropriate revisions. We have outlined our revisions in our new submission based on the reviewer comments.

**Revisions:**

1. **Reviewer #1, Comment #1:** I suggest adding an action-related information gap to the keywords.
  - **Our Response:** Thank you for your suggestion. We have added “action-related information gap” to our list of keywords.
  
2. **Reviewer #1, Comment #2:** A section on the comparison of the results of the femoral and adductor block should be included in the discussion section.
  - **Our Response:** We appreciate your feedback. We have added the following sentences to discuss the results of FNB and ACB in our discussion section:

“We found that ACB patients had increased ambulation and decreased falls and buckling compared with FNB patients, thereby validating an institutional practice change to enhance short-term patient outcomes after surgery. Our findings on improvement mobility are consistent with explanations that ACB may help assist in speedier knee recovery and maintenance of quadriceps strength.<sup>[6]</sup>”
  
3. **Reviewer #2, Comment #1:** The study had ended in June 2017, so what took so long to write this article while the implementation had taken much shorter time.
  - **Our Response:** Thank you for your question. Since the completion of our study, we invested time in our data collection process and statistical analysis to ensure the integrity of our implementation science results.

Moreover, the COVID-19 pandemic caused a hiatus in the project due to increased demands in our hospitals. Moreover, we reviewed compliance to the practice change for 2 years and found that it has remained 100%; however, this dataset was not part of our process we described in our study, and therefore, not included in the analysis.

4. **Reviewer #2, Comment #2:** The fact that Adductor Canal block (ACB) is superior to Femoral nerve block (FNB) was already known to the institute and hence this project falls into “Know-do” category and not “do-know” category so why carry out a study to show that ACB is superior to FNB. The “do-know” category requires a five pronged approach which is not described by the authors. The “know-do” category requires a three pronged approach which not described either.
  - **Our Response:** We truly appreciate this comment. We implemented a modified Consolidated Framework for Implementation Research (CFIR) in order to fill the knowledge-to-action gap in which we already had ample evidence regarding the strength, quality, and benefit of the adductor canal block (ACB) over the femoral nerve block (FNB). Given that this change was executed over an integrated system, we defined specific steps related to the deimplementation of a certain practice (FNB) while implementing a new practice (ACB) while keeping many other workflows constant. For example, we considered the inner settings, outer settings, individual characteristics of personnel, and isolated practice pathways. Nevertheless, the majority of the efforts revolved around the process as depicted in **Figure 1**. This step-wise process can be described as a simplified and modified CFIR.
5. **Reviewer #2, Comment #3:** In this article the readers have to know what exactly the institute do to make all anesthesiologists perform ACB and not FNB. The above needs to be presented in the flow chart, mentioning how the faults in implementation in this particular project were identified at your institution.
  - **Our Response:** Thank you for this review. We maintained a live registry that was updated in real-time and then utilized to determine the progress of implementation. With our education and data review, we were able to identify the faults or lags in implementation. Once these areas were identified, the individual provider’s obstacles and hindrances were addressed biweekly and subsequently resolved. We have added these details to the manuscript:

“During the evaluation period, the dataset was analyzed to determine providers for whom there remained obstacles to implementation; these barriers were addressed biweekly and resolved.”

6. **Reviewer #2, Comment #4:** Also, how the target population was informed and how clinical practice rules were disseminated to the clinicians.

- **Our Response:** Thank you again for this comment which helps in improving the implementation strength of our methodology. The target population, which included our total knee arthroplasty (TKA) patients, were informed of the benefits and risks of the new block if they had received the femoral block previously. Practice methods were disseminated at the beginning and reminders were given at each framework step. To explain this further, we added the following text to the manuscript:

“Following a one-month pilot (47 patients) in September 2016 during which those trained in the ACB educated the providers in the team. Patients were informed of the change if they had received the FNB for their previous procedure. The dosage and technicality of the blocks were standardized and disseminated at the beginning of the pilot and reminders were given at each phase.”

7. **Reviewer #2, Comment #5:** Was there any annual report created?

- **Our Response:** Thank you for your question. The following explanation was added to the manuscript:

“Reports were generated to evaluate progress initially biweekly and then monthly and during each phase until full implementation.”

8. **Reviewer #2, Comment #5:** The title is too long, and it should be no more than 18 words.

- **Our Response:** Thank you for bringing this to our attention. Our previous title has been shortened to 13 words to read “Implementation science for the adductor canal block: a new and adaptable methodology process.”

9. **Science Editor, Comment #1:** The authors did not provide original pictures. Please provide the original figure documents. Please prepare and arrange the figures using PowerPoint to ensure that all graphs or arrows or text portions can be reprocessed by the editor.

- **Our Response:** Thank you for bringing this to our attention. Original figure and table attachments have been provided to ensure that they can be reprocessed by the editor.

10. **Science Editor, Comment #2:** Self-cited references: There is 1 self-cited reference. The self-referencing rates should be less than 10%. Please keep the reasonable self-citations that are closely related to the topic of the manuscript,

and remove other improper self-citations. If the authors fail to address the critical issue of self-citation, the editing process of this manuscript will be terminated

- **Our Response:** Reference #4 provides context for our readers of our 2016 study and how our current study addressed the need for continuous improvement in anesthesia protocol. Reference #32 establishes baseline demographics for our institution's TKA patient population, thus demonstrating a limitation for our study as well as the need for future analysis of younger patient populations. Reference #32 has been also updated to reflect the citation to the article in press.

11. **Science Editor, Comment #3:** PMID and DOI numbers are missing in the reference list. Please provide the PubMed numbers and DOI citation numbers to the reference list and list all authors of the references. Please revise throughout.

- **Our Response:** Thank you for informing us of this requirement. All missing PMID and DOI numbers that could be retrieved are now included in the manuscript. There were no available PMID numbers for Reference #5 and #32. There were no available DOI numbers for Reference #7 and #8. Reference #7 has been updated with correct format from Auto-Analyzer. All authors are listed in each reference. All other references were edited and checked with the Auto-Analyzer.

12. **Science Editor, Comment #4:** The "Article Highlights" section is missing. Please add the "Article Highlights" section at the end of the main text.

- **Our Response:** Thank you for bringing our this to our attention. The Article Highlights section has now been added in our manuscript.

Thank you for your review. Please let us know if you have any questions or concerns.

Respectfully,

A handwritten signature in black ink, appearing to read 'Nikhil Crain', with a long horizontal line extending to the right.

Nikhil Crain

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