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***Letter to the Editor on “Bilateral Simultaneous Total Knee Arthroplasty May Not Be Safe Even in the Healthiest Patients”***

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To the Editor:

We congratulate the authors on the article published, which discusses the safety of Bilateral Simultaneous (BS) Total Knee Arthroplasty (TKA) by comparing the 30- day mortality and complication rates with those undergoing unilateral TKA.

We would, however, like to raise some concerns about this study:

1. The authors have not defined BSTKA. All those undergoing 2nd TKA within 30 days of the index surgery have been included in the Bilateral TKA group. Though this has been mentioned as a limitation, the results of a simultaneous, sequential simultaneous and staged Unilateral TKA may be different. The results of each sub-group need to be analyzed separately and compared with unilateral TKA. Selection bias may have been introduced by clubbing all these sub-groups under the heading “BSTKA.”
2. Though major complications were higher in the BSTKA group, mortality rates were not different in any subgroup of patients. This highlights that major complications, if managed appropriately may not result in increased mortality.
3. In their title, the authors have generalized that BSTKA may not be safe even in the healthiest group, without stressing that mortality rates are not significantly higher and the selection bias. BSTKA is known to have significant economic, surgical, and rehabilitation advantages, as highlighted by Agarwala et al. (1)

and Vaishya et al. (2), in addition to the studies referenced by the authors.

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## References

1. Agarwala S, Menon A. Safety and efficacy of sequential simultaneous bilateral total knee arthroplasty: A single centre retrospective cohort study. *J Clin Orthop Trauma*. 2020 Jul 1;11:S636–44.
2. Vaishya R, Vijay V, Mani K.C. K, Agarwal AK. Is simultaneous bilateral total knee arthroplasty safe in the geriatric population? A retrospective cohort study with up to 9 years follow up. *J Clin Orthop Trauma*. 2018;(9):107–11.

Conflict of Interest: None Declared

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## Article Author Response

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### *Article Author(s) to Letter Writer(s)*

We thank the authors for their letter and their comments regarding our article (1). We agree that the definition of Bilateral Simultaneous (BS) Total Knee Arthroplasty (TKA) could have been better defined in relation to our patient population. Importantly, all BSTKAs in the study were performed on the same day under a single anesthetic. BSTKA patients in our study were defined as any patient with a “concurrent” or “other procedure” with the Current Procedural Terminology Code for primary TKA. A concurrent procedure is defined by the American College of Surgeons National Quality Improvement Project as: “an additional operative procedure performed by a different surgical team or surgeon (e.g., under direction of a different surgical attending) and under the same anesthetic which have CPT codes different\* from that of the Principal Operative Procedure \*Certain CPT codes can be billed for a patient more than one time reflecting repeated performance of a particular procedure. In such cases the codes could be considered different.” An “other procedure” is similarly defined as “an additional operative procedure performed by the same surgical team (i.e., the same specialty/service) under the same anesthetic which has a CPT code different from that of the Principal Operative Procedure.” all additional procedures/CPT codes for the OR visit are reported. While this does ensure that the BSTKA were performed on the same day, it does not allow us to accurately separate procedures into concurrently and staged procedures during the same anesthetic.

While our article did not find a difference in mortality between BSTKA and unilateral TKA patient

cohorts, we would caution any reader to draw the conclusion that BSTKA does not lead to increased mortality rates despite the increase in major complications as the study is not adequately powered to answer such a question. We agree that BSTKA does present potential economic, surgical, and rehabilitation advantages. However, our findings demonstrate, similar to the current literature, that overall complications are still higher in BSTKA, even in the healthiest patient cohorts. Further development of care pathways and patient selection are required to improve safety if performing these procedures.

## References

1. Warren JA, Siddiqi A, Krebs VE, Molloy R, Higuera C, Piuze NS. Bilateral Simultaneous Total Knee Arthroplasty May Not Be Safe Even in the Healthiest Patients. *J Bone Joint Surg Am*. 2020 Dec 24; Publish Ahead of Print. doi: 10.2106/JBJS.20.01046.