

## Review Form 1.6

Journal Name:	<a href="#">Asian Journal of Orthopaedic Research</a>
Manuscript Number:	Ms_AJORR_81809
Title of the Manuscript:	RATE AND CAUSES OF TOTAL HIP ARTHROPLASTY REVISION AT A REFERENCE HOSPITAL IN TANZANIA 2008-2018
Type of the Article	Original Research Article

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This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound. To know the complete guideline for Peer Review process, reviewers are requested to visit this link:

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### PART 1: Review Comments

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
<b>Compulsory</b> REVISION comments	<p>One of the most important issues in a retrospective study is the patient's selection, where the inclusion and exclusion criteria must be adequately detailed, avoiding possible selection biases. The major weakness of this report is based on the randomization method for patient selection:</p> <p>This is a study covering a period of 11 years, where 950 arthroplasties were performed, but of which only 206 (21.7%) were assessed.</p> <p>The questions that arise as a reviewer are:</p> <p>Is there a database where they collected the information?</p>	<p>Information were extracted from arthroplasty record books and patient's case notes by using data extraction forms.</p> <p>21% Is representative of the population since every participant had an equal</p>
	Is only 21% of the total population-representative?	chance of being selected into the study.
	<p>How were the included patients selected? What do you mean by systematic random sampling? Is it software?</p> <p>Why was such a low percentage of patients selected? Economic factors do not justify the impossibility of retrospective analysis of the medical records of each patient.</p> <p>All this affects the reproducibility of the study.</p>	<p>A systematic random sampling technique was used.</p> <p>All patients who had total hip arthroplasty replacement at MOI from 2008-2018 formed the study population and were represented by 'N'. The sample size for this study was 206 as calculated below in the sample size estimation section and were represented by 'n'. From MOI arthroplasty record books, N=950, thus the sampling frame K was calculated as follows;</p> <p><math>K=N/n</math></p> <p><math>K=950/206=4.61</math></p> <p><math>K=4</math></p> <p>Therefore, starting from any number between 1- 4 the study sample was selected every after Kth until a sample size of 206 was obtained. The sample size was calculated using Kish and Lisle formula (1965) below. Inorder to calculate the sample size for this study, a pilot study among patients who underwent total hip arthroplasty at MOI from 2008-2018 was first conducted, in which 3 years were chosen and from each year one month was randomly selected to study the rate of total hip arthroplasty revision. From the pilot study it was found that in January 2015 a total of 7 THA procedures were performed out of which 2 were revised. In April 2016 a total of 10 THA procedures were performed and the number of revisions was zero. In January 2018 a total of 14 THA were performed out of which 3 were revised. Taking the sum of all revisions as the numerator and the sum of all THA as the denomitor, the proportion of revision "p" was calculated as here under;</p> <p><math>(2+0+3) \div (7+10+14) = 5 \div 31 = 0.16 \times 100\% = 16\%</math></p>

		<p>From the pilot study p= 16%.</p> $n = \frac{Z^2 p(1 - p)}{e^2}$ <p>n = Minimum sample size Z = point on normal standard distribution (1.96) e = Margin of tolerable error 5% p = from pilot study (proportion of hip revision 0.16)</p> <p>Substituting the proportion into the formula above. The minimum sample size for this study was 206.</p> <p>Systematic sampling is a type of probability sampling method in which sample members from a larger population are selected according to a random starting point but with a fixed, period interval.</p> <p>It's not software.</p> <p>Rephrased; The primary outcome was total hip arthroplasty revision due to any cause within 11 years (2008-2018). Rephrased; Revision performed within 11 years of follow up.</p> <p>The description provided were meant to clarify what has been presented in tables and graphs, however they may be excluded during publication. Regarding the description of the age of the series; Presenting using median would cluster information in a single graph due to low rate of revision hence limiting comparison. For comparison purpose</p> <p>The rate of THA revision was obtained by taking 206 as the denominator however a further comparison of causes of revision was made among those</p>
	What do you mean by The primary outcome was total hip arthroplasty revision due to any cause within 10 years? Revisions performed before 10 years of follow-up? Or within the first 10 years of arthroplasty experience? Rephrase.	who were revised hence no changes.
	Results: There is some repetition between what the authors develop in the manuscript and what is described in tables and graphs. Regarding the description of the age of the series, if the patients were older than 18 years, age is not a normal variable, so it should be reported as median and interquartile range or	The periprosthetic fracture were post operative for both cemented and cementless

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	simply range. The same with the time of review. Why are the revisions presented by age groups? What is the objective if this item is not developed in the discussion?	
	It is reported that there were 7 revisions due to recurrent dislocation. The percentages should be presented for the total number of patients $7/206=3.39\%$ as well as for the total number of revisions. The same for the rest of the causes of revision. In such a low number of complications, two decimal places should be used to express the percentages. In general, limited analysis of the information is observed... examples: -revisions due to mechanical loosening, probably occurred at different times than those caused by dislocation or infection.	
	-were the periprosthetic fractures intra- or post-operative? With cemented or uncemented prostheses? All this information could enrich the study. The study limitations are poorly specified.	
<b>Minor</b> REVISION comments		
<b>Optional/General</b> comments	The authors are congratulated for the work done, where they report the rates and causes of revision in the center where they work. They retrospectively analyzed a series of patients treated with total hip arthroplasty who required prosthetic revision, highlighting the time of evolution and its causes.	This is highly appreciated

## PART 2:

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
Are there ethical issues in this manuscript?	(If yes, Kindly please write down the ethical issues here in details)	No ethical issues