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REVIEWER'S REPORT

Manuscript No.: IJAR-58605

Title: Outcome of Lumbar Spine Surgery Using Spinal Anaesthesia in Nigeria: A Multi?Centre Review

Recommendation:
Accept as it is .....
Accept after minor revision.....
Accept after major revision ...YES.....
Do not accept (*Reasons below*) .....

Rating	Excel.	Good	Fair	Poor
Originality		□		
Techn. Quality			□	
Clarity		□		
Significance		□		

Reviewer's ID: JPR-094

Detailed Reviewer's Report

Reviewer's Report

Overall Assessment

This manuscript reports a retrospective multi-centre cohort study evaluating the outcomes of lumbar spine surgery performed under spinal anaesthesia in four Nigerian tertiary hospitals. The topic is clinically relevant, particularly in resource-limited settings, and the reported sample size is relatively large. However, there are important methodological, reporting, and originality concerns that should be addressed before publication.

****Recommendation:** **Major Revision****

ISSN(O): 2320-5407 | ISSN(P): 3107-4928
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REVIEWER'S REPORT

 # 1. Strengths

*** Clinically important topic with relevance to low- and middle-income countries.**
*** Multi-centre design involving four tertiary hospitals increases external validity.**
*** Relatively large sample size (232 patients).**
*** Evaluation of several clinically meaningful outcomes including:**

*** Pain (VAS)**
*** Functional disability (ODI)**
*** Hospital stay**
*** Opioid consumption**
*** Return to work**
*** Sexual satisfaction**
*** Mortality**

*** Multivariable logistic regression was performed to identify predictors of favourable outcomes.**
*** Discussion compares findings with recent systematic reviews and meta-analyses.**
*** The manuscript is generally well organized.**

 # 2. Weaknesses

Major Weaknesses

1. Limited originality

ISSN(O): 2320-5407 | ISSN(P): 3107-4928
International Journal of Advanced Research
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REVIEWER'S REPORT

Several Nigerian studies and multiple international systematic reviews on spinal versus general anaesthesia have already been published.

The manuscript provides limited novelty beyond increasing sample size and adding multiple centres.

2. No control (General Anaesthesia) group

The conclusion repeatedly states that spinal anaesthesia is superior or an effective alternative to general anaesthesia.

However,

*** only spinal anaesthesia patients were studied,**
*** there was **no comparison group**.**

Therefore these conclusions are not fully supported.

3. Retrospective study design

The retrospective design introduces

*** selection bias**
*** information bias**

ISSN(O): 2320-5407 | ISSN(P): 3107-4928
International Journal of Advanced Research
Publisher's Name: Jana Publication and Research LLP
www.journalijar.com

REVIEWER'S REPORT

*** missing data bias**

These limitations are insufficiently discussed.

4. Patient selection not clearly described

The authors do not explain

*** why SA was selected**
*** whether GA patients existed during the same period**
*** surgeon selection criteria**
*** anaesthetist preference**
*** exclusion of conversion to GA.**

5. Statistical concerns

The manuscript reports

*** logistic regression**

but does not provide

*** model calibration**
*** goodness-of-fit**

ISSN(O): 2320-5407 | ISSN(P): 3107-4928
International Journal of Advanced Research
Publisher's Name: Jana Publication and Research LLP
www.journalijar.com

REVIEWER'S REPORT

*** multicollinearity assessment**

*** missing data handling**

*** sample size justification**

*** regression assumptions.**

6. Data verification

Because this is a multi-centre retrospective study covering

2010–2024,

the manuscript should explain

*** data validation**

*** inter-centre consistency**

*** methods used to reduce recording errors.**

7. Ethics

The ethics approval numbers are not reported.

Only stating approval was obtained is insufficient.

ISSN(O): 2320-5407 | ISSN(P): 3107-4928
International Journal of Advanced Research
Publisher's Name: Jana Publication and Research LLP
www.journalijar.com

REVIEWER'S REPORT

8. Follow-up

Only six-month follow-up was analysed.

Long-term outcomes after lumbar surgery remain unknown.

9. Possible overlap with previous Nigerian publication

The manuscript cites earlier Nigerian studies involving similar hospitals and similar patient populations.

The authors should clarify that the current cohort is independent and not duplicate publication.

 # 3. Minor Weaknesses

*** Several grammatical errors.**
*** Inconsistent journal abbreviations.**
*** Reference formatting inconsistent.**
*** Tables require improved formatting.**
*** Odds ratios should consistently use two decimal places.**
*** p-values should be uniformly formatted.**
*** Some abbreviations are repeated unnecessarily.**

ISSN(O): 2320-5407 | ISSN(P): 3107-4928
International Journal of Advanced Research
Publisher's Name: Jana Publication and Research LLP
www.journalijar.com

REVIEWER'S REPORT

 # 4. Key Points

*** Important clinical question.**
*** Large Nigerian multicentre dataset.**
*** Demonstrates favourable outcomes with spinal anaesthesia.**
*** Predictors of good outcomes identified.**
*** Lack of GA comparison limits interpretation.**
*** Moderate originality.**
*** Statistical reporting requires improvement.**
*** Greater methodological transparency is needed.**

 # 5. Significance

Scientific significance

****Moderate****

The manuscript adds regional evidence but does not substantially change existing knowledge.

Clinical significance

****High****

ISSN(O): 2320-5407 | ISSN(P): 3107-4928
International Journal of Advanced Research
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www.journalijar.com

REVIEWER'S REPORT

The findings may encourage wider use of spinal anaesthesia in appropriately selected patients, especially in resource-limited settings.

Public health significance

****Moderate to High****

Potential reduction in

*** hospital stay**
*** opioid use**
*** healthcare costs**

may benefit healthcare systems in developing countries.

 # 6. Recommendation

****Decision:** **Major Revision****

Justification

Although the manuscript addresses an important clinical problem and includes a reasonably large multicentre cohort, several major issues prevent acceptance in its current form:

ISSN(O): 2320-5407 | ISSN(P): 3107-4928
International Journal of Advanced Research
Publisher's Name: Jana Publication and Research LLP
www.journalijar.com

REVIEWER'S REPORT

*** absence of a control group**

*** limited originality**

*** insufficient methodological detail**

*** inadequate statistical reporting**

*** lack of detailed ethical information**

*** need to clarify possible overlap with previous publications**

*** conclusions stronger than supported by the study design.**

After comprehensive revision and clarification of these issues, the manuscript could become suitable for publication.

****Overall Recommendation:** **Major Revision****

Reviewer's Justification for *Major Revision* ***(Line-by-Line Issues and Reasons)***

Line No.	Issue Identified	Reason for Major Revision
5–9	Background overstates the advantages of spinal anaesthesia.	The introduction highlights only the benefits of spinal anaesthesia and gives limited discussion of its disadvantages, contraindications, and conflicting evidence, creating potential bias.
10–16	Study objective is incomplete.	The objective states that predictors of favourable outcomes were identified but does not clearly define the primary and secondary outcome measures in the abstract.
11–12	Retrospective study over 15 years.	Clinical practice, surgical techniques, implants, and anaesthetic protocols likely changed substantially between 2010 and 2024. No adjustment for temporal changes was performed.
13–15	Outcome measures	Important variables such as patient satisfaction,

ISSN(O): 2320-5407 | ISSN(P): 3107-4928
International Journal of Advanced Research
Publisher's Name: Jana Publication and Research LLP
www.journalijar.com

REVIEWER'S REPORT

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	insufficiently described.	quality of life, intraoperative blood loss, and complications are not mentioned in the abstract.
17–24	Regression analysis inadequately reported.	Odds ratios are presented without information regarding variable selection strategy, model validation, goodness-of-fit, multicollinearity assessment, or handling of missing data.
25–28	Conclusions stronger than supported by the study design.	The study lacks a general anaesthesia (GA) comparison group; therefore, concluding that spinal anaesthesia is an effective alternative to GA is not fully supported by the presented data.
33–63 (Introduction)	Limited novelty.	Numerous systematic reviews, meta-analyses, and Nigerian studies have already evaluated spinal anaesthesia in lumbar spine surgery. The manuscript does not clearly explain its novel contribution beyond a larger multicentre cohort.
41–45	Previous Nigerian studies not adequately differentiated.	The manuscript cites earlier Nigerian cohorts but does not explain how the present dataset differs or whether any patients overlap, raising concerns about duplicate publication.
66–71	Ethical approval details incomplete.	Ethics committee approval numbers, dates, and committee names are not provided, reducing transparency.
73–78	Patient selection may introduce bias.	It is unclear why only patients receiving spinal anaesthesia were included and whether comparable GA patients existed during the same study period.
79–86	Anaesthetic protocol	Sedation drugs, doses, and adjunctive medications

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www.journalijar.com

REVIEWER'S REPORT

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	not fully standardized.	were administered "as needed," introducing inter-centre variability that is not analyzed.
88–92	Data collection methods insufficient.	There is no description of how data quality, completeness, or inter-centre consistency were verified in this retrospective review.
93–104	Outcome definitions require clarification.	Definitions of return to work and sexual satisfaction rely on subjective measures, but no validated assessment instruments are described.
105–112	Statistical methodology incomplete.	No sample size calculation, power analysis, missing-data strategy, or assessment of regression assumptions is reported.
113–152	Baseline data lack important clinical variables.	Important factors such as ASA score, smoking status, osteoporosis, neurological deficit, symptom duration, and blood loss are omitted, limiting interpretation.
122–152	No comparison with GA patients.	Outcomes are presented only for spinal anaesthesia, making it impossible to conclude superiority or equivalence relative to GA.
131–150	Subgroup analyses may be underpowered.	The fusion subgroup includes only 45 patients, yet multiple comparisons are performed without adjustment for multiplicity.
138–142	Complications incompletely reported.	Important perioperative complications (e.g., urinary retention, nausea, conversion to GA, deep vein thrombosis, pulmonary complications) are not reported.
143–152	Logistic regression	The dependent variable definition, event-per-

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REVIEWER'S REPORT

Line No.	Issue Identified	Reason for Major Revision
	insufficiently described.	variable ratio, model diagnostics, and internal validation are not reported.
157–202 (Discussion)	Interpretation occasionally overstates findings.	Comparisons with GA are made despite the absence of a concurrent GA control group, risking overinterpretation.
161–202	Literature discussion is selective.	The discussion emphasizes studies supporting SA while giving little attention to studies reporting equivalent or inferior outcomes.
203–209	Limitations section incomplete.	Important limitations—retrospective design, selection bias, lack of randomization, centre heterogeneity, temporal changes, and possible information bias—are not sufficiently discussed.
210–216	Final conclusion is too definitive.	The manuscript concludes that spinal anaesthesia is a safe and effective alternative to GA; however, without direct comparison, this conclusion should be more cautious.
217–271	Reference quality and formatting.	Several references are recent but inconsistently formatted. Some citations require verification for indexing status and bibliographic accuracy.

***Overall Justification for** Major Revision*

The manuscript addresses an important clinical question and includes a relatively large multicentre Nigerian cohort. However, several major scientific issues prevent acceptance in its current form:

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REVIEWER'S REPORT

Limited originality because similar Nigerian studies and multiple systematic reviews already exist.

No general anaesthesia comparison group, yet conclusions compare spinal anaesthesia with GA.

Incomplete methodological reporting, including patient selection, data validation, and standardized protocols.

Insufficient statistical reporting, particularly for logistic regression and missing data.

Potential selection and information bias inherent to the retrospective design.

Inadequate reporting of ethics, complications, and long-term outcomes.

Possible overlap with previously published Nigerian cohorts, which should be clarified.

Final Recommendation: Major Revision

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International Journal of Advanced Research
Publisher's Name: Jana Publication and Research LLP
www.journalijar.com

REVIEWER'S REPORT

The manuscript has potential clinical value but requires substantial methodological clarification, more balanced interpretation, improved statistical reporting, and strengthened discussion before it can be considered for publication.