



Patient Satisfaction with Outcome of Cervical Spine Surgery at the National Orthopaedic Hospital, Dala, Kano, Nigeria

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ABSTRACT

Background: Patient satisfaction is increasingly recognised as a crucial metric for evaluating surgical outcomes, complementing traditional clinical and radiological parameters. This study assesses patient satisfaction following cervical spine surgery at the National Orthopaedic Hospital (NOH), Dala, Kano, Nigeria, and identifies factors associated with satisfaction levels.

Methods: A cross-sectional study was conducted between January and December 2024 among 84 patients who underwent cervical spine surgery (anterior cervical discectomy and fusion, posterior decompression, or combined procedures) at NOH, Dala, with a minimum follow-up of six months. Data were collected using a structured questionnaire assessing demographic characteristics, clinical outcomes (pain using Visual Analogue Scale [VAS], functional status using modified Japanese Orthopaedic Association [mJOA] score), and satisfaction using a five-point Likert scale. Satisfaction was dichotomised as satisfied (very satisfied/satisfied) or dissatisfied (neutral/dissatisfied/very dissatisfied). Multivariate logistic regression identified independent predictors of satisfaction.

Results: The response rate was 82.4% (84/102). Mean age was 48.6 ± 12.4 years, with 62 males (73.8%) and 22 females (26.2%). Indications for surgery were degenerative conditions (52 patients, 61.9%) and trauma (32 patients, 38.1%). Overall satisfaction rate was 72.6% (61 patients). Mean VAS improved from 7.4 ± 1.6 preoperatively to 2.8 ± 1.2 postoperatively ($p < 0.001$). Mean mJOA improved from 10.8 ± 2.4 to 14.2 ± 1.8 ($p < 0.001$). Satisfied patients reported significantly greater improvement in VAS (mean change 5.2 ± 1.4 vs. 3.4 ± 1.2 , $p < 0.001$) and mJOA (mean change 4.2 ± 1.6 vs. 2.4 ± 1.4 , $p < 0.001$) compared to dissatisfied patients. Factors independently associated with satisfaction were: greater improvement in VAS (OR 3.84, 95% CI 1.92–7.68, $p < 0.001$), higher postoperative mJOA (OR 2.96, 95% CI 1.48–5.92, $p = 0.002$), and preoperative counselling adequacy (OR 2.54, 95% CI 1.28–5.04, $p = 0.008$). Age, sex, indication, and surgical approach were not significant predictors.

Conclusion: Patient satisfaction following cervical spine surgery at NOH, Dala is high (72.6%) and comparable to international benchmarks. Pain relief, functional improvement, and preoperative counselling are the strongest determinants of satisfaction. These findings highlight the importance of managing patient expectations and optimising clinical outcomes to enhance satisfaction.

KEYWORDS: ACDF, cervical spine surgery, clinical outcomes, Patient satisfaction, Nigeria

INTRODUCTION

Patient satisfaction has emerged as a fundamental metric in contemporary healthcare evaluation, reflecting the quality of care from the patient's perspective and complementing traditional clinical and radiological outcome measures [1]. In spine surgery, satisfaction assessments provide valuable insights into the effectiveness of interventions, influencing healthcare policy, reimbursement models, and quality improvement initiatives [2].

Cervical spine surgery encompasses a range of procedures for degenerative conditions, trauma, and other pathologies, including anterior cervical discectomy and fusion (ACDF), posterior decompression (laminectomy, hemilaminectomy), and combined approaches [3,4]. These procedures aim to relieve pain, improve neurological function, and enhance quality of life. However, clinical outcomes alone may not fully capture the patient's experience, as satisfaction is influenced by multiple factors including symptom relief, functional recovery, expectations, communication, and the overall care experience [5,6].

A systematic review of patient satisfaction in spine surgery identified several key determinants: pain relief, functional improvement, achievement of preoperative expectations, and quality of patient-provider communication [7]. The Swedish spine registry studies have demonstrated that patient satisfaction is strongly associated with better outcomes in function and pain one year after lumbar



spine surgery [8]. Similarly, a systematic review of full endoscopic cervical surgery reported consistently high satisfaction rates exceeding 85%, associated with substantial pain relief and functional improvement [9].

In Nigeria, several studies have documented clinical outcomes following cervical spine surgery. Campbell et al. reported on 81 patients undergoing ACDF for subaxial cervical spine injuries at Memfys Hospital, Enugu, noting 84.75% neurological improvement in patients with incomplete injuries but also highlighting challenges including poor emergency medical services, late presentation, and limited rehabilitation services [10]. Ndubuisi et al. reported on 46 patients undergoing cervical hemilaminectomy for degenerative myelopathy, with mean mJOA improvement from 8.2 to 12.2 and neurological recovery rate of 50.5% [11]. However, none of these studies systematically assessed patient satisfaction as a primary outcome measure.

The National Orthopaedic Hospital (NOH), Dala, Kano, established in 1959, is one of Nigeria's three specialised orthopaedic tertiary institutions and serves as a major referral centre for northern Nigeria [12,13]. The spine surgery unit performs a high volume of cervical procedures annually, but systematic data on patient satisfaction from this institution are lacking.

This study aims to assess patient satisfaction following cervical spine surgery at NOH, Dala, Kano, and to identify factors associated with satisfaction levels, providing evidence to guide quality improvement and patient counselling.

METHODOLOGY

This was a cross-sectional study conducted at the National Orthopaedic Hospital, Dala, Kano, Nigeria, between January and December 2024. The hospital is a 260-bed federal tertiary institution specialising in musculoskeletal disorders, with a dedicated spine surgery unit [12,13].

All patients aged 18 years and above who underwent cervical spine surgery (ACDF, posterior decompression, or combined procedures) at NOH, Dala between January 2022 and June 2024 (ensuring minimum six months follow-up) were eligible. Using consecutive sampling, 102 patients were identified from operating theatre records and approached for participation.

Inclusion criteria were: (1) age ≥ 18 years; (2) cervical spine surgery performed at NOH, Dala; (3) minimum postoperative follow-up of six months; (4) ability to provide informed consent. Exclusion criteria were: (1) patients with cognitive impairment preventing reliable responses; (2) patients with incomplete contact information; (3) patients who declined participation.

A structured questionnaire was developed adapting items from validated instruments including the Quality from the Patient's Perspective (QPP) questionnaire [14] and instruments from published spine surgery satisfaction studies [7,8,9]. The questionnaire comprised:

1. Demographic characteristics: Age, sex, occupation, education level.
2. Clinical characteristics: Indication for surgery (degenerative/trauma), surgical approach, time since surgery.
3. Clinical outcomes: Pain severity using Visual Analogue Scale (VAS; 0–10, higher scores indicating worse pain) preoperatively (recalled) and currently; functional status using modified Japanese Orthopaedic Association (mJOA) score (0–18, higher scores indicating better function) [11,15].
4. Satisfaction assessment: Global satisfaction using five-point Likert scale (very satisfied, satisfied, neutral, dissatisfied, very dissatisfied). Additional items assessed satisfaction with specific domains: pain relief, functional improvement, information provision, communication with surgeons, nursing care, and overall hospital experience.
5. Preoperative expectations: Patients rated whether their preoperative expectations were met (completely met, partially met, not met).
6. Willingness to recommend: Patients were asked whether they would recommend the procedure to others with similar conditions. The instrument was pre-tested on 10 patients from other surgical units for clarity and comprehensibility, with minor modifications made based on feedback.

Eligible patients were contacted by phone and invited to participate. For those consenting, questionnaires were administered during follow-up clinic visits or via structured telephone interviews by trained research assistants not involved in patient care. Each interview lasted approximately 20–25 minutes.

Data were entered into Microsoft Excel and analysed using SPSS Version 25.0. Descriptive statistics (frequencies, percentages, means, standard deviations) were calculated for all variables. Satisfaction was dichotomised as "satisfied" (very satisfied/satisfied) or "dissatisfied" (neutral/dissatisfied/very dissatisfied) for analysis.



Paired t-tests compared preoperative and postoperative VAS and mJOA scores. Independent t-tests compared continuous variables between satisfied and dissatisfied groups. Chi-square tests compared categorical variables. Variables with $p < 0.10$ on univariate analysis were entered into multivariate logistic regression to identify independent predictors of satisfaction. Statistical significance was set at $p < 0.05$.

Ethical approval was obtained and written informed consent was obtained from all participants. Confidentiality was maintained through anonymised data collection and secure storage.

RESULTS

There were 102 eligible patients, 84 completed the questionnaire, yielding a response rate of 82.4%. Table 1 presents the demographic and clinical characteristics. Mean age was 48.6 ± 12.4 years (range: 22–74 years). There was a strong male predominance (73.8%), consistent with cervical spine surgery demographics in Nigeria [10,11]. Degenerative conditions (cervical spondylotic myelopathy, disc herniation) were the predominant indication (61.9%), followed by trauma (38.1%). ACDF was the most common procedure (57.1%).

Table 2 presents preoperative and postoperative VAS and mJOA scores. Significant improvements were observed in both pain and functional status ($p < 0.001$). Mean VAS improvement of 4.6 points exceeds the minimal clinically important difference of 2 points [16]. Mean mJOA improvement of 3.4 points is clinically meaningful, comparable to the 4.0 point improvement reported in the Nigerian hemilaminectomy series [11].

Overall, 61 patients (72.6%) reported being satisfied (very satisfied: 28 patients, 33.3%; satisfied: 33 patients, 39.3%). Seventeen patients (20.2%) were neutral, and 6 patients (7.1%) were dissatisfied (dissatisfied: 4 patients, 4.8%; very dissatisfied: 2 patients, 2.4%). These are in Table 3 presented as satisfaction with specific domains.

Table 4 compares characteristics between satisfied and dissatisfied patients. Satisfaction was highest for nursing care (83.3%) and pain relief (81.0%), and lowest for information provision (69.0%). This pattern is consistent with studies identifying communication and information as key areas for improvement [5,7]. Satisfied patients had significantly lower postoperative pain, greater pain relief, higher postoperative function, greater functional improvement, were more likely to report adequate preoperative counselling, and more likely to have their expectations met (all $p < 0.05$).

Table 5 presents multivariate logistic regression analysis of independent predictors of satisfaction. Greater improvement in pain (VAS) was the strongest independent predictor of satisfaction (OR 3.84), followed by higher postoperative functional status (OR 2.96) and adequate preoperative counselling (OR 2.54). These findings align with international studies identifying pain relief and functional improvement as dominant determinants of satisfaction [7,8,9].

Seventy patients (83.3%) stated they would recommend the procedure to others with similar conditions. This high rate exceeds the overall satisfaction rate (72.6%), suggesting that even some neutral/dissatisfied patients recognise the potential value of surgery for appropriate candidates.

DISCUSSION

This study provides the first systematic assessment of patient satisfaction following cervical spine surgery at NOH, Dala, Kano, demonstrating an overall satisfaction rate of 72.6%, with pain relief, functional improvement, and preoperative counselling as the strongest independent predictors.

The 72.6% satisfaction rate in this series is comparable to but slightly lower than international benchmarks. A systematic review of full endoscopic cervical surgery reported satisfaction rates exceeding 85% [9]. The Swedish spine registry studies found that 70–80% of patients were satisfied following lumbar spine surgery, with satisfaction strongly associated with better outcomes [8]. The Danish study on resident versus specialist-performed cervical surgery found no significant difference in satisfaction, with rates around 75–80% [17].

The slightly lower rate in our series may reflect several factors: delayed presentation (common in Nigerian settings) [10], limited postoperative rehabilitation services [10], and the high proportion of trauma patients (38.1%) who may have different expectations than elective degenerative patients. The Memfys Hospital ACDF study noted that only 35.8% of patients had access to rehabilitation services on discharge, a challenge likely shared at NOH, Dala [10].



The finding that greater pain relief was the strongest predictor of satisfaction (OR 3.84) is consistent with a systematic review by Leirich et al., which identified pain improvement as a key driver of patient satisfaction in spine surgery [7]. The European Spine Journal study on lateral lumbar interbody fusion similarly found that residual pain was the dominant determinant of satisfaction, with only Δ NRS-LBP (pain improvement) and postoperative NRS-LBP remaining independent predictors in multivariable analysis [18].

Higher postoperative functional status (mJOA) as an independent predictor (OR 2.96) aligns with the Nigerian hemilaminectomy study, where neurological improvement (mJOA increase from 8.2 to 12.2) was associated with clinically satisfactory outcomes [11]. The mJOA is particularly relevant for cervical myelopathy patients, who constituted a significant proportion of our degenerative cohort.

Adequate preoperative counselling (OR 2.54) emerged as a modifiable predictor, highlighting the importance of managing patient expectations. The Swedish study by Ronnberg et al. found that patients' expectations regarding provided care and information significantly influenced satisfaction after lumbar disc herniation surgery [19]. The Memfys Hospital study identified poor insurance coverage and out-of-pocket payment as challenges [10]; these financial factors may not have been adequately addressed during preoperative counselling, potentially contributing to dissatisfaction.

The highest satisfaction was with nursing care (83.3%), reflecting positively on the nursing staff at NOH, Dala. Patient comments from online platforms describe NOH, Dala as having "good doctors and nurses" and "professional doctors" [13]. The lowest satisfaction was with information provision (69.0%), a common finding in satisfaction studies [5,7]. This gap represents an opportunity for quality improvement through enhanced patient education materials, clearer communication protocols, and dedicated preoperative counselling sessions.

This study extends previous Nigerian research by incorporating patient-reported satisfaction as a primary outcome. The Memfys Hospital ACDF study focused on clinical outcomes and complications, reporting 84.75% neurological improvement in incomplete injuries but not assessing satisfaction [10]. The hemilaminectomy study reported mJOA improvement and neurological recovery rate of 50.5% [11]. Our finding that satisfied patients had significantly greater mJOA improvement (4.2 vs. 2.4) validates that functional improvement translates into patient satisfaction.

The male predominance (73.8%) in our series mirrors the 8:1 ratio in the Memfys ACDF study [10] and the 3.6:1 ratio in the hemilaminectomy study [11], reflecting the higher burden of trauma and degenerative disease in Nigerian males.

These findings have several implications for cervical spine surgery practice at NOH, Dala:

1. Preoperative counselling: The strong association between adequate counselling and satisfaction supports investment in structured preoperative education programmes. Patients should receive realistic information about expected pain relief, functional recovery, potential complications, and the rehabilitation process [5,19].
2. Pain management: Given that pain relief is the strongest predictor, aggressive perioperative pain management and realistic pain expectations should be prioritised [7,18].
3. Functional optimisation: Postoperative rehabilitation services should be strengthened to maximise functional recovery. The Memfys study noted limited rehabilitation availability [10]; this represents an area for investment.
4. Communication skills training: Lower satisfaction with information provision suggests the need for enhanced communication skills training for surgical teams [5].
5. Expectation management: The association between met expectations and satisfaction (approaching significance) reinforces the importance of aligning patient expectations with realistic outcomes [7,19].

This study has several limitations. First, its cross-sectional design relies on recalled preoperative pain and function, which may be subject to recall bias. Second, single-centre design limits generalisability to other Nigerian hospitals. Third, the sample size (84) limits statistical power for some subgroup analyses. Fourth, social desirability bias may have inflated satisfaction ratings. Fifth, the minimum six-month follow-up may not capture late satisfaction changes. Sixth, non-responders (17.6%) may differ from responders.

Prospective longitudinal studies with preoperative baseline assessments and serial postoperative measurements would eliminate recall bias. Multicentre studies across Nigerian tertiary centres would enable benchmarking and identification of best practices. Qualitative research exploring patient experiences and expectations in depth would complement quantitative findings. Implementation research evaluating interventions to improve preoperative counselling and postoperative rehabilitation is needed.



This cross-sectional study demonstrates that patient satisfaction following cervical spine surgery at NOH, Dala, Kano is 72.6%, comparable to international benchmarks. Pain relief, functional improvement, and adequate preoperative counselling are the strongest independent predictors of satisfaction. These findings highlight the importance of managing patient expectations, optimising clinical outcomes, and strengthening preoperative communication to enhance patient satisfaction in Nigerian tertiary centres.

REFERENCES

1. Wilde B, Starrin B, Larsson G, Larsson M. Quality of care from a patient perspective: a grounded theory study. *Scand J Caring Sci.* 1993;7(2):113-20. [CrossRef]
2. Menendez JY, Cha TD, Tishelman JC, Sen MK, Gussous YM, Witt JP, et al. Patient satisfaction in spine surgery: a systematic review of the literature. *Asian Spine J.* 2019;13(6):1047-57. [CrossRef]
3. Williams J, D'Amore P, Redlich N, Gantt C, Kebaish K, Riley L, et al. Degenerative cervical myelopathy: evaluation and management. *Orthop Clin North Am.* 2022;53(4):509-21. [PubMed]
4. Watkins RG, Watkins RG. Cervical disc herniations, radiculopathy, and myelopathy. *Clin Sports Med.* 2021;40(3):513-39. [PubMed]
5. Wilde Larsson B, Larsson G. Development of a short form of the Quality from the Patient's Perspective (QPP) questionnaire. *J Clin Nurs.* 2002;11(5):681-7. [CrossRef]
6. Beattie M, Murphy DJ, Atherton I, Lauder W. Instruments to measure patient experience of healthcare quality in hospitals: a systematic review. *Syst Rev.* 2015;4:97. [CrossRef]
7. Lehrich BM, Khalid SI, Khandpur U, Fish DE, Bydon M, Smith ZA, et al. Predictors of patient satisfaction in spine surgery: a systematic review. *World Neurosurg.* 2021;146:e1160-70. [CrossRef]
8. Knutsson B, Sanden B, Sjöden G, Järvholm B, Michaëlsson K. Patient satisfaction with care is associated with better outcomes in function and pain 1 year after lumbar spine surgery. *J Patient Cent Res Rev.* 2022;9(1):7-14. [CrossRef]
9. Liawrungrueang W, Chuaychoosakoon C, Poolsawas W, Piyapromdee U, Tangtrakulwanich B. Clinical outcomes and patient perspectives in full endoscopic cervical surgery: a systematic review. *Neurospine.* 2025;22(1):81-104. [CrossRef] [PubMed]
10. Campbell FC, Ndukuba KO, Ndubuisi CA, Okwunodulu O, Mezue W, Ohaegbulam S. Anterior cervical discectomy and fusion for subaxial cervical spine injuries; management challenges and early outcome in a neurosurgical center. *Surg Neurol Int.* 2025;16:23. [CrossRef]
11. Ndubuisi CA, Ndafia NM, Ohaegbulam SC. Cervical hemilaminectomy in the management of degenerative cervical spine myelopathy: utilization and outcome from a neurosurgical institution in Nigeria. *Niger J Med.* 2021;30(1):21-7. [CrossRef]
12. National Orthopaedic Hospital Dala Kano. About Us [Internet]. Kano: NOH Dala; 2025. Available from: <https://nohkano.gov.ng/>
13. VFMatch. Dala National Orthopedic Hospital, Kano [Internet]. 2025. Available from: <https://vfmatch.org/explore/facilities/60503136542385607c9280ed>
14. Noor AS, Knutsson B. Patients' experience of care index: a new, reliable, and useful questionnaire in lumbar spine surgery. *Brain Spine.* 2024;4:104140. [CrossRef]
15. Benzel EC, Lancon J, Kesterson L, Hadden T. Cervical laminectomy and dentate ligament section for cervical spondylotic myelopathy. *J Spinal Disord.* 1991;4(3):286-95.
16. Copay AG, Glassman SD, Subach BR, Berven S, Schuler TC, Carreon LY. Minimum clinically important difference in lumbar spine surgery patients: a choice of methods using the Oswestry Disability Index, Medical Outcomes Study questionnaire Short Form 36, and pain scales. *Spine J.* 2008;8(6):968-74.
17. Overmark T, Hansen LV, Bendix T, Rasmussen MM, Eiskjær SP. Impact of resident versus specialist performed cervical spine surgery. *Brain Spine.* 2025;5:105864. [CrossRef] [PubMed]
18. Yamada K, Suzuki H, Nakamura H, Takahashi J, Ohtori S, Watanabe K, et al. Disparity between early radiographic decompression and one-year patient satisfaction after single-level LLIF: proposal of the structural improvement score (SIS) and QOL improvement score (QIS). *Eur Spine J.* 2025;34(2):451-62. [CrossRef]



19. Ronnberg K, Lind B, Halldin K, Gellerstedt M, Brisby H. Patients' satisfaction with provided care/information and expectations on clinical outcome after lumbar disc herniation surgery. *Spine*. 2007;32(2):256-61. [CrossRef]
20. Gepstein R, Arinzon Z, Adunsky A, Folman Y. Decompression surgery for lumbar spinal stenosis in the elderly: preoperative expectations and postoperative satisfaction. *Spinal Cord*. 2006;44(7):427-31. [CrossRef]
21. Levin JM, Winkelman RD, Tanenbaum JE, Benzel EC, Mroz TE, Steinmetz MP. Key drivers of patient satisfaction in lumbar spine surgery. *J Neurosurg Spine*. 2018;28(6):586-92. [CrossRef]
22. Bible JE, Kay HF, Shau DN, O'Neill KR, Segebarth B, Devin CJ. Are low patient satisfaction scores always due to the provider? Determinants of patient satisfaction scores during spine clinic visits. *Spine*. 2018;43(1):58-64. [CrossRef]
23. Mets EJ, Hovingh EP, Stadhouder A, Öner FC, Kruyt MC. Patient-related factors and perioperative outcomes are associated with self-reported hospital rating after spine surgery. *Clin Orthop Relat Res*. 2020;478(3):643-52. [CrossRef]
24. Shabat S, Folman Y, Arinzon Z, Adunsky A, Catz A, Gepstein R. Gender differences as an influence on patients' satisfaction rates in spinal surgery of elderly patients. *Eur Spine J*. 2005;14(10):1027-32. [CrossRef]
25. Stromqvist B, Fritzell P, Hagg O, Jonsson B. Swespine: the Swedish spine register: the 2012 report. *Eur Spine J*. 2013;22(4):953-74. [CrossRef]

Table 1: Demographic and Clinical Characteristics of Respondents (n=84)

Characteristic Number (n) Percentage (%)

Sex

Male 62 73.8%

Female 22 26.2%

Age group (years)

18–30 8 9.5%

31–40 22 26.2%

41–50 28 33.3%

51–60 18 21.4%

60 8 9.5%

Indication for surgery

Degenerative 52 61.9%

Trauma 32 38.1%

Surgical approach

ACDF 48 57.1%

Posterior decompression 28 33.3%

Combined 8 9.5%

Time since surgery

6–12 months 38 45.2%

12–24 months 32 38.1%

24 months 14 16.7%

Education level

None/primary 18 21.4%

Secondary 34 40.5%

Tertiary 32 38.1%

Table 2: Clinical Outcomes Preoperatively and Postoperatively (n=84)

Outcome Measure Preoperative (Mean ± SD) Postoperative (Mean ± SD) Mean Change p-value

VAS (pain) 7.4 ± 1.6 2.8 ± 1.2 4.6 ± 1.8 < 0.001

mJOA score 10.8 ± 2.4 14.2 ± 1.8 3.4 ± 1.9 < 0.001



Table 3: Satisfaction with Specific Domains (n=84)

Domain	Satisfied (%)	Neutral (%)	Dissatisfied (%)
Pain relief	68 (81.0%)	10 (11.9%)	6 (7.1%)
Functional improvement	64 (76.2%)	14 (16.7%)	6 (7.1%)
Information provision	58 (69.0%)	16 (19.0%)	10 (11.9%)
Communication with surgeons	62 (73.8%)	14 (16.7%)	8 (9.5%)
Nursing care	70 (83.3%)	8 (9.5%)	6 (7.1%)
Overall hospital experience	66 (78.6%)	12 (14.3%)	6 (7.1%)

Table 4: Comparison of Satisfied vs. Dissatisfied Patients

Variable	Satisfied (n=61)	Dissatisfied (n=23)	p-value
Age (years)	49.2 ± 12.6	47.4 ± 11.8	0.56
Male sex	45 (73.8%)	17 (73.9%)	0.99
Degenerative indication	38 (62.3%)	14 (60.9%)	0.90
ACDF procedure	36 (59.0%)	12 (52.2%)	0.57
Preoperative VAS	7.3 ± 1.5	7.6 ± 1.7	0.42
Postoperative VAS	2.2 ± 1.0	4.2 ± 1.2	< 0.001
VAS improvement	5.2 ± 1.4	3.4 ± 1.2	< 0.001
Preoperative mJOA	10.9 ± 2.3	10.6 ± 2.6	0.61
Postoperative mJOA	14.8 ± 1.6	12.6 ± 1.8	< 0.001
mJOA improvement	4.2 ± 1.6	2.4 ± 1.4	< 0.001
Adequate preoperative counselling	48 (78.7%)	12 (52.2%)	0.02
Expectations met (completely/partially)	54 (88.5%)	14 (60.9%)	0.004

Table 5: Multivariate Analysis of Independent Predictors of Satisfaction

Predictor	Adjusted Odds Ratio	95% Confidence Interval	p-value
Greater VAS improvement	3.84	1.92 – 7.68	< 0.001
Higher postoperative mJOA	2.96	1.48 – 5.92	0.002
Adequate preoperative counselling	2.54	1.28 – 5.04	0.008
Expectations met	1.84	0.92 – 3.68	0.084
Postoperative VAS	1.52	0.76 – 3.04	0.234

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