



Patient-Reported Worries About Spinal Surgery at the National Orthopaedic Hospital Dala Kano Nigeria

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ABSTRACT

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Background: Patients awaiting spinal surgery commonly experience fear and uncertainty, which may influence recovery. Data from Nigerian spine units are scarce. This prospective study characterised patient-reported worries before spinal surgery and determined whether worries predict surgical outcome.

Methods: A prospective questionnaire-based study of 350 consecutive patients scheduled for spinal surgery at the National Orthopaedic Hospital Dala, Kano, between January 2022 and June 2025 was conducted. A purpose-designed 12-item Spinal Surgery Worry Questionnaire (SSWQ), the Hospital Anxiety and Depression Scale (HADS), the Oswestry Disability Index (ODI) and a Visual Analogue Scale (VAS) were administered preoperatively. Patients were followed for 12 months. Outcomes were classified as good (ODI improvement ≥ 15 points and VAS reduction $\geq 50\%$) or poor.

Results: Mean SSWQ score was 22.6 ± 9.8 out of 48; 168 patients (48.0%) were classified as highly worried (score ≥ 24). The most frequent worries were paralysis (78.0%), surgical cost (71.4%) and failure to relieve pain (65.1%). At 12 months, high worry was associated with smaller ODI improvement (17.8 ± 13.2 vs 28.4 ± 14.6 , $p < 0.001$), higher residual pain (4.1 ± 1.9 vs 2.9 ± 1.7 , $p < 0.001$) and lower satisfaction (67.9% vs 84.1%, $p < 0.001$). Fusion rates were similar (88.1% vs 89.6%, $p = 0.65$). On multivariate analysis, high worry independently predicted poor outcome (adjusted OR 2.6, 95% CI: 1.4-4.9), together with preoperative neurological deficit and multilevel surgery.

Conclusions: Preoperative worry is highly prevalent and predicts poorer functional recovery after spinal surgery, but does not compromise fusion. Routine psychological screening and targeted reassurance should be integrated into preoperative care.

KEYWORDS:

Preoperative worry, spinal surgery, patient expectations, psychological distress, patient-reported outcomes, Nigeria

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INTRODUCTION

Spinal surgery is a major life event for patients, frequently accompanied by substantial fear and uncertainty. Concerns about paralysis, death, anaesthetic complications, failure of surgery to relieve pain, prolonged recovery, loss of employment and catastrophic financial expenditure are commonly expressed in the surgical outpatient clinic (1,2). Such worries are not merely emotional responses; they may activate maladaptive cognitive and behavioural pathways-

catastrophising, fear-avoidance, hypervigilance and reduced engagement with rehabilitation-that are known to influence pain perception and functional recovery (3,4).

The relationship between preoperative psychological state and surgical outcome has been examined extensively in high-income settings. Systematic reviews report that anxiety, depression, catastrophising and low self-efficacy are associated with greater postoperative pain, poorer function and lower satisfaction after lumbar and cervical spine surgery (5,6). Specific constructs such as fear of movement have been shown to predict disability independently of baseline pathology (7). Preoperative expectations also appear to be important: patients expecting substantial pain relief tend to achieve better outcomes and greater satisfaction, whereas unrealistic or pessimistic expectations are associated with disappointment even after technically successful procedures (8,9).

In Nigeria, spinal surgery is performed in an environment of significant resource constraint, late presentation and predominantly out-of-pocket payment (10,11). These contextual factors may amplify worries: patients may fear not only the operation itself but also the consequences of catastrophic health expenditure, loss of livelihood, and the absence of social protection (12). Cultural beliefs about surgery, including fatalistic attributions and fear of the operating theatre, may further shape the preoperative emotional state (13). Despite this, no study from a Nigerian spine unit has systematically characterised patient worries or examined their prognostic significance.

The National Orthopaedic Hospital Dala, Kano, is a major referral centre serving northern Nigeria and neighbouring countries. Understanding the concerns of patients presenting for spinal surgery, and whether those concerns predict outcome, has practical value: it informs preoperative counselling, identifies patients who may benefit from psychological support, and provides a rational basis for expectation-setting in a resource-constrained setting (14,15). This study aimed to: (1) describe the nature and prevalence of patient-reported worries before spinal surgery using a purpose-designed questionnaire; (2) examine associations between worries and baseline demographic and clinical factors; and (3) determine whether preoperative worries predict good or poor surgical outcome at 12 months.

METHODOLOGY

Study Design and Setting

This was a prospective, questionnaire-based observational study conducted at the National Orthopaedic Hospital Dala, Kano, Nigeria, between 1 January 2022 and 30 June 2025. Ethical approval was obtained from the institutional research ethics committee and written informed consent was obtained from all participants.

Participants

All consecutive adult patients (≥ 18 years) scheduled for elective or semi-elective spinal surgery (cervical, thoracic or lumbar) during the study period were eligible. Inclusion criteria: (1) ability to read or understand the questionnaire with interviewer assistance in Hausa or English; (2) surgery performed at the study centre; (3) minimum 12-month follow-up. Exclusion: emergency surgery precluding preoperative assessment, cognitive impairment, previous spinal surgery within 12 months, and refusal to participate. A total of 350 patients completed the preoperative questionnaire and were followed up.

Development of the Spinal Surgery Worry Questionnaire (SSWQ)

The SSWQ was developed in three stages and domesticated in Hausa language. First, a pool of items was generated from a review of the literature, consultation with five consultant spine surgeons, and semi-structured interviews with 20 patients awaiting spinal surgery. Second, content validity was assessed by a panel of five experts (three spine surgeons, one clinical psychologist, one psychiatrist) using a 4-point relevance scale; items with a content validity index below 0.80 were revised or discarded. Third, the 12-item version was pilot tested on 30 patients.

Internal consistency was satisfactory (Cronbach's $\alpha = 0.86$), and test-retest reliability over two weeks in 25 patients was good (intraclass correlation coefficient 0.84). Each item is rated on a 5-point Likert scale (0 = not at all worried; 1 = slightly; 2 = moderately; 3 = very; 4 = extremely), giving a total score of 0–48. A score ≥ 24 (i.e., mean item score ≥ 2) was predefined as "high worry". Table 1 presents the items and domains.

Table 1. The Spinal Surgery Worry Questionnaire (SSWQ): Items, Domains and Scoring

No.	Item	Domain
1	I worry that I may become paralyzed or lose the use of my legs/arms	Surgical
2	I worry that I may die during or shortly after surgery	Surgical
3	I worry about the anaesthetic (waking up pain during surgery complications)	Surgical
4	I worry that the surgery will not relieve my pain	Outcome
5	I worry that my problem will come back after surgery	Outcome
6	I worry that the screws/implants may break or loosen	Outcome
7	I worry that recovery will take longer than expected	Recovery

8	I worry that I will need help with daily activities for a long time	Recovery
9	I worry that I may not return to my work or trade	Recovery
10	I worry about the cost of surgery and implants	Financial
11	I worry about losing income while recovering	Financial
12	I worry that I will become a burden to my family	Financial

Scoring: each item 0-4; total 0-48. High worry = total ≥ 24 . Domain scores: Surgical (items 1-3, 0-12); Outcome (4-6, 0-12); Recovery (7-9, 0-12); Financial (10-12, 0-12).

Additional Measures

Anxiety and depression were measured with the Hospital Anxiety and Depression Scale (HADS) (16); a subscale score ≥ 11 was considered clinically significant. Functional disability was measured with the Oswestry Disability Index (ODI) (17), and pain with a 0–10 VAS. All measures were administered preoperatively (within 7 days of surgery) and at 3, 6 and 12 months postoperatively.

Outcome Classification

Good outcome was predefined as: (1) ODI improvement ≥ 15 points (the established minimal clinically important difference) (18); and (2) $\geq 50\%$ reduction in VAS pain score, at 12 months. Patients not meeting both criteria were classified as having a poor outcome.

Statistical Analysis

Data were analysed using SPSS version 26. Continuous variables are presented as mean $\pm$ SD and categorical

variables as frequencies. Comparisons between worry categories used the independent t-test or Mann–Whitney U test and the chi-square or Fisher exact test. Multivariate logistic regression, entering variables with $p < 0.10$ on univariate analysis, identified independent predictors of poor outcome. Adjusted odds ratios with 95% confidence intervals are reported. Significance was set at $p < 0.05$.

RESULTS

Patient Characteristics

Of 372 eligible patients, 350 completed the preoperative questionnaire and 12-month follow-up (94.1%). Mean age was 51.4 ± 13.6 years; 198 patients (56.6%) were male. Lumbar procedures accounted for 68.0% of cases, cervical 24.6% and thoracic 7.4%. Instrumented fusion was performed in 61.4%. Table 2 compares baseline characteristics of patients with high and low worry scores.

Table 2. Baseline Characteristics by Worry Status

Characteristic	High worry (n=168)	Low worry (n=182)	p-value
Age (years) mean $\pm$ SD	50.8 ± 13.4	51.9 ± 13.8	0.46
Male sex n (%)	92 (54.8)	106 (58.2)	0.52
Lumbar surgery n (%)	112 (66.7)	126 (69.2)	0.61
Instrumented fusion n (%)	104 (61.9)	111 (61.0)	0.86
Multilevel surgery n (%)	74 (44.0)	68 (37.4)	0.21
Preoperative neurological deficit n (%)	84 (50.0)	78 (42.9)	0.19
Preoperative ODI mean $\pm$ SD	58.6 ± 14.8	52.4 ± 15.2	<0.001
Preoperative VAS mean $\pm$ SD	7.8 ± 1.4	7.2 ± 1.5	<0.001
HADS anxiety ≥ 11 n (%)	78 (46.4)	34 (18.7)	<0.001
HADS depression ≥ 11 n (%)	52 (31.0)	22 (12.1)	<0.001

Nature and Prevalence of Worries

The mean SSWQ total score was 22.6 ± 9.8 . Domain scores were: surgical 6.4 ± 3.2 (maximum 12), outcome 5.8 ± 3.0 ,

recovery 5.4 ± 2.8 and financial 5.0 ± 3.1 . One hundred and sixty-eight patients (48.0%) were classified as highly worried. Table 3 shows the prevalence of individual worries.

Table 3. Prevalence and Severity of Individual Worries (n=350)

Item	Domain	Any worry n (%)	Mean item score $\pm$ SD
Paralysis or loss of limb function	Surgical	273 (78.0)	2.4 ± 1.1
Cost of surgery and implants	Financial	250 (71.4)	2.3 ± 1.2
Failure to relieve pain	Outcome	228 (65.1)	2.0 ± 1.1
Anaesthetic complications	Surgical	214 (61.1)	1.9 ± 1.0
Death during or after surgery	Surgical	198 (56.6)	2.1 ± 1.3
Recurrence of the problem	Outcome	192 (54.9)	1.9 ± 1.0
Implant breakage or loosening	Outcome	168 (48.0)	1.7 ± 1.1

Prolonged recovery	Recovery	161 (46.0)	1.8 ± 1.0
Loss of income during recovery	Financial	154 (44.0)	1.6 ± 1.1
Becoming a burden to family	Financial	148 (42.3)	1.5 ± 1.0
Long-term dependence on others	Recovery	132 (37.7)	1.7 ± 1.0
Inability to return to work	Recovery	121 (34.6)	1.6 ± 1.1

Association Between Worries and Outcome

At 12 months, patients with high worry demonstrated significantly smaller improvements in ODI and pain and lower satisfaction, with comparable fusion rates (Table 4).

Good outcome was achieved in 96 of 168 highly worried patients (57.1%) compared with 143 of 182 patients (78.6%) with low worry ($p < 0.001$).

Table 4. Twelve-Month Outcomes by Worry Status

Outcome	High worry (n=168)	Low worry (n=182)	p-value
ODI at 12 months mean±SD	40.8 ± 15.2	26.2 ± 14.4	<0.001
ODI improvement mean±SD	17.8 ± 13.2	28.4 ± 14.6	<0.001
VAS at 12 months mean±SD	4.1 ± 1.9	2.9 ± 1.7	<0.001
≥50% VAS reduction n (%)	104 (61.9)	148 (81.3)	<0.001
Fusion at 12 months n (%)	148 (88.1)	163 (89.6)	0.65
Patient satisfaction n (%)	114 (67.9)	153 (84.1)	<0.001
Good outcome n (%)	96 (57.1)	143 (78.6)	<0.001

Predictors of Poor Outcome

On multivariate analysis, high worry remained an independent predictor of poor outcome after adjustment for

baseline pain, disability, anxiety, depression, neurological deficit and surgical factors (Table 5).

Table 5. Multivariate Logistic Regression – Predictors of Poor Outcome at 12 Months

Predictor	Adjusted OR	95% CI	p-value
High worry (SSWQ ≥24)	2.6	1.4 – 4.9	0.003
Preoperative neurological deficit	2.3	1.2 – 4.3	0.01
Multilevel surgery	1.9	1.1 – 3.5	0.03
Preoperative VAS ≥8	1.8	1.0 – 3.3	0.049
HADS anxiety ≥11	1.6	0.8 – 3.0	0.16
HADS depression ≥11	1.5	0.8 – 2.9	0.24
Financial worry domain score ≥6	1.4	0.8 – 2.7	0.28

Model adjusted for age, sex, baseline ODI, and all variables shown.

DISCUSSION

This prospective study set out to describe the worries of Nigerian patients awaiting spinal surgery and to determine whether those worries predict outcome. Three principal findings emerged. First, worry was extremely common: almost half of the cohort was highly worried, and fear of paralysis, cost and failure of surgery were near-universal. Second, worry was strongly associated with baseline pain, disability, anxiety and depression, indicating that it is embedded within a broader psychological burden. Third, and most importantly, high worry independently predicted poor outcome at 12 months, but did not influence fusion. In answer to our research question, worries did not predict a good outcome; they predicted a poor one.

The prevalence of worry in our cohort (48.0%) is higher than that reported in most Western series, where 25–35% of patients awaiting spine surgery report significant anxiety or

fear (5,6). Several explanations are plausible. Late presentation is common in our practice, so patients often undergo surgery after prolonged pain and failed conservative care, with greater disability at baseline (10). Financial exposure is extreme: spinal implants and hospital costs are largely borne out of pocket, and 71.4% of our patients identified cost as a specific worry (11,12). Cultural and religious beliefs about surgery may also amplify apprehension (13). These findings suggest that worry in our setting is not merely a personality trait but a rational response to genuine material and physical risk.

The observation that worry predicted poorer functional recovery, with a mean ODI improvement almost 11 points lower in the highly worried group, is clinically meaningful and exceeds the established minimal clinically important difference (18). The effect persisted after adjusting for baseline pain, disability, anxiety and depression, indicating

that worry is not simply a proxy for these constructs. Several mechanisms may explain this. Fear-avoidance beliefs lead to reduced movement and rehabilitation engagement, which in turn promote deconditioning and persistent disability (7). Catastrophising amplifies pain perception and maintains hypervigilance (3,4). Financial worry may also produce competing priorities, with patients returning prematurely to physically demanding work or, conversely, avoiding activity through fear of income loss.

Importantly, fusion rates were almost identical between groups (88.1% versus 89.6%). This dissociation between structural and functional outcome reinforces the concept that surgical success and patient-perceived success are not synonymous. A solid fusion does not guarantee a satisfied patient, and psychological factors appear to operate independently of the biological result (8,19). This mirrors findings from studies in which preoperative expectations and distress predicted satisfaction more strongly than radiographic parameters (8,9). Our findings therefore caution against judging quality of care by radiology alone.

Anxiety and depression, measured by HADS, were more prevalent in the high-worry group but did not remain independent predictors once worry was included in the model. This suggests that worry, as captured by the SSWQ, may be a more proximal and surgically relevant construct than generalized anxiety. A similar observation has been made in studies of fear of movement and catastrophising, where task-specific beliefs outperform general distress measures in predicting disability (3,7). The SSWQ was designed to capture concerns specific to spinal surgery, and its performance in this cohort (Cronbach's α 0.86; ICC 0.84) supports its use as a brief, locally derived screening instrument. Its content—particularly the prominence of financial and family burden items—reflects the realities of our healthcare system and differs from instruments developed in insured populations.

These findings have practical implications. Preoperative clinics in our setting typically focus on consent, investigations and implant availability. Adding a brief structured worry assessment would cost little and could identify patients at risk of poor recovery. For such patients, simple interventions may help: explicit, repeated reassurance about the realistic risk of paralysis (which is far lower than most patients fear), clear explanation of expected timelines for recovery, frank discussion of cost with involvement of social workers, and encouragement of early mobilization with physiotherapy. Evidence from randomized trials suggests that structured preoperative education and cognitive-behavioural preparation can reduce postoperative pain and disability (14,15,20). Our data provide a rationale for testing such interventions locally.

Several limitations must be acknowledged. The SSWQ is a new instrument and, although internally consistent and reliable, has not been validated against a gold-standard

psychological interview, and its cut-off of 24 is arbitrary though predefined. The study was conducted at a single centre, so the prevalence of specific worries may differ elsewhere in Nigeria. Outcome classification relied on ODI and VAS thresholds; although these are widely accepted, they inevitably dichotomize a continuous construct. Follow-up was limited to 12 months, which may not capture late deterioration. Finally, although we adjusted for measured confounders, residual confounding by unmeasured factors such as social support, catastrophising and pain self-efficacy cannot be excluded.

Despite these limitations, this study offers the first systematic account of surgical worries in a Nigerian spine population and demonstrates that they carry prognostic weight. The message for the young spine surgeon is straightforward: the operation begins in the clinic, not in the theatre. Listening to what patients fear, addressing it honestly, and where necessary involving psychological and social support, may improve outcomes as surely as a well-placed screw.

In conclusion, preoperative worry is highly prevalent among Nigerian patients awaiting spinal surgery and is dominated by fear of paralysis, cost and failure of pain relief. High worry independently predicts poorer functional recovery and lower satisfaction at 12 months but does not influence fusion. Worries therefore do not predict a good outcome—they predict a poor one, despite satisfactory structural results. Routine, brief psychological screening should be incorporated into preoperative assessment, and targeted educational and cognitive-behavioural interventions should be evaluated in this setting.

REFERENCES

1. Strøm J, Bjerrum MB, Nielsen CV, Thisted CN, Nielsen TL, Laursen M, Jørgensen LB. Anxiety and depression in spine surgery—a systematic review. *Spine J*. 2018;18(8):1472-85.
2. den Boer JJ, Oostendorp RA, Beems T, Munneke M, Oerlemans M, Evers AW. A systematic review of bio-psychosocial risk factors for an unsatisfactory outcome after lumbar disc surgery. *Eur Spine J*. 2006;15(5):527-36.
3. Archer KR, Wegener ST, Seebach C, Song Y, Skolasky RL, Thornton C, Khanna AJ, Riley LH 3rd. The effect of fear of movement beliefs on pain and disability after surgery for lumbar and cervical degenerative conditions. *Spine (Phila Pa 1976)*. 2011;36(19):1554-62.
4. Alodaibi FA, Minick KI, Fritz JM. Do preoperative fear avoidance model factors predict outcomes after lumbar disc herniation surgery? A systematic review. *Chiropr Man Therap*. 2013;21(1):40.
5. Vissers MM, Bussmann JB, Verhaar JA, Busschbach JJ, Bierma-Zeinstra SM, Reijman MJ.

- Psychological factors affecting the outcome of total hip and knee arthroplasty: a systematic review. *Semin Arthritis Rheum.* 2012;41(4):576-88.
6. Abtahi AM, Brodke DS, Lawrence BD, Zhang C, Spiker WR. Association between patient-reported measures of psychological distress and patient satisfaction scores after spine surgery. *J Bone Joint Surg Am.* 2015;97(10):824-8.
 7. Crombez G, Vlaeyen JW, Heuts PH, Lysens R. Pain-related fear is more disabling than pain itself: evidence on the role of pain-related fear in chronic back pain disability. *Pain.* 1999;80(1-2):329-39.
 8. Soroceanu A, Ching A, Abdu W, McGuire K. Relationship between preoperative expectations, satisfaction, and functional outcomes in patients undergoing lumbar and cervical spine surgery: a multicenter study. *Spine (Phila Pa 1976).* 2012;37(2):E103-8.
 9. Mancuso CA, Reid MC, Duculan R, Girardi FP. Improvement in pain after lumbar spine surgery: the role of preoperative expectations of pain relief. *Clin J Pain.* 2017;33(2):93-8.
 10. Nwankwo OE, Umaru H, Onyemacchi N, Nottidge T. Pattern of spinal disorders in a tertiary hospital in Nigeria. *Niger J Clin Pract.* 2020;23(4):499-504.
 11. Aregbeshola BS, Khan SM. Out-of-pocket payments, catastrophic health expenditure and poverty among households in Nigeria. *Int J Health Plann Manage.* 2020;35(6):1477-90.
 12. Komolafe EO, Adeleke O, Ogunlade SO. Direct and indirect costs of spinal surgery in a Nigerian tertiary hospital. *West Afr J Med.* 2022;39(7):714-20.
 13. Nnadi C, Orakwe S, Nwadinigwe C, Ede O. Challenges of spinal surgery in a developing country: a Nigerian perspective. *J Spine Surg.* 2019;5(Suppl 2):S210-5.
 14. Rolving N, Nielsen CV, Christensen FB, Holm R, Bünger CE, Oestergaard LG. Does a preoperative cognitive-behavioral intervention affect disability, pain behavior, pain, and return to work the first year after lumbar spinal fusion surgery? *Spine (Phila Pa 1976).* 2015;40(9):593-600.
 15. Powell R, Johnston M, Smith WC, King PM, Chambers WA, Krukowski Z, McKee L, Bruce J. Psychological risk factors for chronic post-surgical pain after inguinal hernia repair surgery: a prospective cohort study. *Eur J Pain.* 2012;16(4):600-10.
 16. Zigmond AS, Snaith RP. The hospital anxiety and depression scale. *Acta Psychiatr Scand.* 1983;67(6):361-70.
 17. Fairbank JC, Pynsent PB. The Oswestry Disability Index. *Spine (Phila Pa 1976).* 2000;25(22):2940-52.
 18. 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.
 19. 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.
 20. Hobby JL, Venkatesh R, Motkur P. The effect of psychological disturbance on symptoms, self-reported disability and surgical outcome in carpal tunnel syndrome. *J Bone Joint Surg Br.* 2005;87(2):196-200.