

Patient satisfaction with postoperative spine rehabilitation at the National Orthopaedic Hospital Dala Kano, Nigeria: A Cross-Sectional Study

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Abstract

Background: Postoperative rehabilitation is essential for optimal recovery after spine surgery, yet rehabilitation services in Nigerian tertiary hospitals face significant resource constraints. This study aimed to assess patient satisfaction with postoperative spine rehabilitation services and identify factors influencing satisfaction at the National Orthopaedic Hospital Dala, Kano, Nigeria.

Methods: A cross-sectional study was conducted at the Physiotherapy Department of the National Orthopaedic Hospital Dala, Kano, between January and March 2025. Consecutive adult patients who had undergone spine surgery and were attending postoperative rehabilitation were recruited. Data were collected using an interviewer-administered questionnaire capturing sociodemographic characteristics, rehabilitation parameters (waiting time, session duration, number of sessions), and satisfaction measured using a 5-point Likert scale across five domains: access, facility/equipment, therapist-patient interaction, information provision, and overall satisfaction. The department operates with 5 trained physiotherapists and few assistants seeing approximately 100 patients daily over 8 hours, with patients attending once weekly for 10-minute sessions. The department is ill-equipped with no in-house or external training opportunities. Multivariate logistic regression identified independent predictors of overall satisfaction.

Results: A total of 342 patients participated (response rate 91.2%). Mean age was 52.4 ± 13.8 years; 56.1% were male. Majority (68.4%) had undergone lumbar surgery. Median waiting time was 45 minutes (IQR: 30–75), while median session duration was 10 minutes (IQR: 8–12). Patients attended a median of 8 sessions (IQR: 4–12). Overall satisfaction rate was 42.1% (144/342). Domain-specific satisfaction was highest for therapist interpersonal aspects (58.2%) and lowest for facility/equipment (18.7%) and access (31.3%). Factors independently associated with lower satisfaction included: waiting time >60 minutes (OR: 0.38; 95% CI: 0.24–0.60; $p < 0.001$), session duration <10 minutes (OR: 0.45; 95% CI: 0.29–0.70; $p < 0.001$), perceived inadequate equipment (OR: 0.21; 95% CI: 0.13–0.34; $p < 0.001$), and lack of explanation about exercises (OR: 0.36; 95% CI: 0.23–0.56; $p < 0.001$). Higher satisfaction was associated with perceived therapist competence (OR: 3.12; 95% CI: 2.01–4.84; $p < 0.001$) and receiving a home exercise programme (OR: 2.48; 95% CI: 1.62–3.80; $p < 0.001$). Major reasons for dissatisfaction were: inadequate equipment/facilities (78.8%), short session duration (67.2%), long waiting time (58.6%), and insufficient explanation (45.5%).

Conclusion: Patient satisfaction with postoperative spine rehabilitation at the National Orthopaedic Hospital Dala is low, with fewer than half of patients reporting satisfaction. Severe resource constraints— inadequate staffing (5 therapists for 100 patients daily), extremely brief sessions (10 minutes weekly), ill-equipped facilities, and lack of staff training opportunities—are the primary drivers of dissatisfaction. Urgent system-level interventions including increased staffing, equipment provision, extended session duration, and staff development programmes are needed to improve rehabilitation quality and patient experience.

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Keywords: Patient Satisfaction; Postoperative Rehabilitation; Spine Surgery; Physiotherapy; Resource Constraints; Kano; Nigeria

1. Introduction

Postoperative rehabilitation is a critical component of recovery following spine surgery, contributing to pain relief, functional restoration, prevention of complications, and optimization of surgical outcomes [1,2]. Structured rehabilitation programmes have been shown to improve mobility, reduce disability, and enhance quality of life in patients undergoing lumbar and cervical spine procedures [3,4]. The process typically involves progressive exercise protocols, gait training, patient education, and gradual return to functional activities [5].

Patient satisfaction with rehabilitation services is increasingly recognized as an important quality indicator, predicting adherence to exercise programmes, engagement in recovery, and ultimately clinical outcomes [6,7]. Satisfied patients are more likely to comply with home exercise programmes, attend follow-up sessions, and achieve better functional results [8]. Conversely, dissatisfaction may lead to dropout, incomplete recovery, and suboptimal surgical outcomes [9].

In Nigerian tertiary hospitals, rehabilitation services operate under severe resource constraints. The physiotherapy department at the National Orthopaedic Hospital Dala, Kano, exemplifies these challenges: only 5 trained physiotherapists with few assistants manage approximately 100 patients daily over 8-hour shifts. Patients attend once weekly for sessions lasting only 10 minutes—far below the 30–60 minutes recommended for effective postoperative rehabilitation [10]. The department is ill-equipped, lacking basic therapeutic equipment, and there are no opportunities for in-house training or external courses for staff development [11].

These constraints have profound implications for rehabilitation quality. Brief sessions preclude comprehensive assessment, individualized exercise prescription, and adequate patient education [12]. Inadequate equipment limits therapeutic options and may compromise treatment effectiveness [13]. Lack of staff training perpetuates outdated practices and prevents adoption of evidence-based protocols [14].

Patient satisfaction in this context is likely to be adversely affected, yet no study has systematically evaluated satisfaction with postoperative spine rehabilitation in Nigerian tertiary hospitals. Understanding the specific drivers of satisfaction and dissatisfaction is essential for quality improvement, resource allocation, and advocacy for enhanced rehabilitation services [15].

Kano, the largest city in northwestern Nigeria, serves as a major referral centre for spinal surgery, with patients travelling long distances for both surgical and rehabilitative care [16]. The National Orthopaedic Hospital Dala is the premier orthopaedic facility in the region, with a dedicated spine surgery unit and rehabilitation department [17]. The postoperative rehabilitation experience of these patients deserves systematic evaluation.

This study aimed to assess patient satisfaction levels and identify factors influencing satisfaction among patients attending postoperative spine rehabilitation at the National Orthopaedic Hospital Dala, Kano, Nigeria, with particular attention to the impact of severe resource constraints on the patient experience.

2. Methodology

This cross-sectional study was conducted at the Physiotherapy Department of the National Orthopaedic Hospital Dala, Kano, Nigeria, between January and March 2025. The hospital is a 450-bed tertiary referral centre serving Kano State and all the 19 states of the Northern Nigeria [16].

The Physiotherapy Department operates daily (Monday–Friday) with 5 trained physiotherapists and few auxiliary staff, managing approximately 100 patients per day over 8 hours (8:00 am to 4:00 pm). Postoperative spine patients attend once weekly for sessions lasting approximately 10 minutes. The department is characterized by: inadequate therapeutic equipment (limited exercise devices, electrotherapy machines, gait aids), fewer in-house training programmes for staff, no opportunities for external training or courses abroad, and overcrowded treatment areas with limited privacy. Ethical approval was obtained and written informed consent was obtained from all participants.

We included consecutive adult patients (aged ≥ 18 years) who had undergone spine surgery (cervical, thoracic, or lumbar) at the hospital and were attending postoperative rehabilitation at the Physiotherapy Department for at least 2 weeks post-surgery. Exclusion criteria comprised: (1) patients too ill to complete the interview; (2) patients with

cognitive impairment affecting ability to provide informed responses; (3) patients who had attended fewer than 2 rehabilitation sessions.

Sample size calculation assumed 50% satisfaction rate (from pilot data), 5% precision, 95% confidence, and 10% non-response, yielding a minimum sample of 384 patients [18].

An interviewer-administered questionnaire was developed based on literature review and adapted from validated satisfaction instruments including the Physical Therapy Outpatient Satisfaction Survey [19] and the MedRisk Instrument for Measuring Patient Satisfaction With Physical Therapy Care [20]. The questionnaire was pretested on 20 patients and refined for clarity and cultural appropriateness.

Data collected included:

- Sociodemographic characteristics: age, sex, occupation, educational level, distance travelled to hospital
- Clinical parameters: type of surgery (cervical, thoracic, lumbar), time since surgery, number of rehabilitation sessions attended
- Rehabilitation parameters: waiting time (minutes from arrival to treatment), session duration (minutes), therapist seen (same/different each week), receipt of home exercise programme
- Satisfaction domains: assessed using 5-point Likert scales (1=very dissatisfied to 5=very satisfied) across:
 - Access: ease of scheduling, waiting time
 - Facility/equipment: availability of equipment, cleanliness, privacy
 - Therapist-patient interaction: courtesy, communication, competence
 - Information provision: explanation of exercises, progress updates, home programme instruction
- Overall satisfaction: global rating of rehabilitation experience
- Open-ended questions: reasons for satisfaction/dissatisfaction, suggestions for improvement

Interviews were conducted by trained research assistants after the rehabilitation session, in a private area to ensure confidentiality. Hausa and English versions were available based on participant preference.

Data were analysed using SPSS version 21.0. Descriptive statistics were computed as frequencies/percentages for categorical variables and mean $\pm$ standard deviation (SD) or median (interquartile range, IQR) for continuous variables.

Satisfaction was dichotomized as "satisfied" (ratings 4–5) versus "dissatisfied" (ratings 1–3) for each domain and overall. Bivariate analysis using chi-square or Fisher's exact tests identified factors associated with overall satisfaction. Variables with $p < 0.10$ were entered into multivariate logistic regression to identify independent predictors. Adjusted odds ratios (OR) with 95% confidence intervals (CI) were calculated. Statistical significance was set at $p < 0.05$.

3. Results

A total of 375 patients were approached; 342 completed the interview (response rate 91.2%). Table 1 summarizes participant characteristics. Mean age was 52.4 years, with male predominance (56.1%). Over half (55.5%) had no formal or only Quranic education. Lumbar surgery was most common (68.4%). Patients attended a median of 8 rehabilitation sessions.

Table 2 shows rehabilitation experience parameters. Median waiting time was 45 minutes, with 32.7% waiting > 60 minutes. Median session duration was 10 minutes, with 43.3% receiving < 10 minutes. Only 28.7% saw the same therapist consistently, and fewer than half (45.6%) received a home exercise programme.

Satisfaction Ratings is shown in Table 3. Overall satisfaction rate was 42.1%. Satisfaction was highest for therapist-patient interaction (58.2%) and lowest for facility/equipment (18.7%) and access (31.3%).

Among dissatisfied patients ($n = 198$), the main reasons cited were: Inadequate equipment/facilities: 156 (78.8%), Session too short: 133 (67.2%), Long waiting time: 116 (58.6%), Insufficient explanation about exercises: 90 (45.5%), Different therapist each visit: 78 (39.4%), No home exercise programme given: 72 (36.4%), Lack of progress despite attending: 58 (29.3%), Unclean environment: 42 (21.2%), and Lack of privacy during treatment: 38 (19.2%). Table 4 addresses the factors associated with overall satisfaction

Patients also offered the following suggestions (multiple responses allowed): Provide more/better equipment: 264 (77.2%), Increase number of physiotherapists: 218 (63.7%), Longer treatment sessions: 196 (57.3%), Reduce waiting time: 172 (50.3%), Ensure same therapist each visit: 148 (43.3%), Provide written home exercise instructions: 136 (39.8%), Improve cleanliness of department: 98 (28.7%), Provide privacy screens/cubicles: 84 (24.6%), Organize health talks/education sessions: 72 (21.1%) and Train staff on new techniques: 58 (17.0%)

Table 1 Demographic and Clinical Characteristics (n=342)

Characteristic	Category n (%) / Mean $\pm$ SD
Age (years) mean $\pm$ SD	52.4 $\pm$ 13.8
Gender	
Male	192 (56.1)
Female	150 (43.9)
Educational level	
None	112 (32.7)
Quranic only	78 (22.8)
Primary	52 (15.2)
Secondary	58 (17.0)
Tertiary	42 (12.3)
Occupation	
Farming	78 (22.8)
Trading/business	96 (28.1)
Civil servant	48 (14.0)
Artisan	52 (15.2)
Retired/unemployed	68 (19.9)
Distance travelled (km) median (IQR)	58 (24–135)
Type of surgery	
Lumbar	234 (68.4)
Cervical	72 (21.1)
Thoracic	36 (10.5)
Time since surgery (months) median (IQR)	4 (2–8)
Number of rehabilitation sessions attended median (IQR)	8 (4–12)

Table 2 Rehabilitation Experience Parameters

Parameter	Median (IQR)	Range
Waiting time (minutes)	45 (30–75)	15–180
Session duration (minutes)	10 (8–12)	5–20
Waiting time >60 minutes n (%)	112 (32.7)	-
Session duration <10 minutes n (%)	148 (43.3)	-
Saw same therapist each week n (%)	98 (28.7)	-
Received home exercise programme n (%)	156 (45.6)	-

Table 3 Domain-Specific and Overall Satisfaction (n=342)

Domain	Satisfied n (%)	Dissatisfied n (%)
Access (scheduling waiting time)	107 (31.3)	235 (68.7)
Facility/equipment	64 (18.7)	278 (81.3)
Therapist-patient interaction	199 (58.2)	143 (41.8)
Information provision	124 (36.3)	218 (63.7)
Overall satisfaction	144 (42.1)	198 (57.9)

Table 4 Bivariate Analysis of Factors Associated with Overall Satisfaction

Variable	Satisfied (n=144)	Dissatisfied (n=198)	p-value
Age		1	0.048
≥50 years	92 (47.2)	103 (52.8)	
<50 years	52 (35.4)	95 (64.6)	
Gender			0.58
Male	84 (43.8)	108 (56.2)	
Female	60 (40.0)	90 (60.0)	
Education			0.002
Formal education	78 (51.7)	73 (48.3)	
No formal/Quranic	66 (34.6)	125 (65.4)	
Surgery type			0.89
Lumbar	98 (41.9)	136 (58.1)	
Cervical/thoracic	46 (42.6)	62 (57.4)	
Waiting time			<0.001
\≤60 minutes	118 (51.3)	112 (48.7)	
60 minutes	26 (23.2)	86 (76.8)	
Session duration			<0.001
\≥10 minutes	104 (53.6)	90 (46.4)	
<10 minutes	40 (27.0)	108 (73.0)	
Same therapist weekly			<0.001
Yes	56 (57.1)	42 (42.9)	
No	88 (36.1)	156 (63.9)	
Home exercise programme.			<0.001
Received			
Not received	96 (61.5)	60 (38.5)	
	48 (25.8)	138 (74.2)	
Equipment perception			<0.001
Adequate	58 (78.4)	16 (21.6)	
Inadequate	86 (32.1)	182 (67.9)	
Therapist explained exercises			<0.001
Yes	112 (54.4)	94 (45.6)	
No	32 (23.5)	104 (76.5)	

Table 5 Independent Predictors of Overall Satisfaction (Multivariate Logistic Regression)

Variable	Adjusted OR	95% CI	p-value
Waiting time ≤60 minutes	2.63	1.56–4.43	<0.001
Session duration ≥10 minutes	2.22	1.38–3.57	0.001
Perceived equipment adequate	4.76	2.58–8.78	<0.001
Received home exercise programme	2.48	1.62–3.80	<0.001
Same therapist weekly	1.96	1.21–3.18	0.006
Therapist explained exercises	2.78	1.72–4.49	<0.001
Formal education	1.84	1.14–2.97	0.013
Age ≥50 years	1.58	0.98–2.55	0.062

4. Discussion

This study demonstrates that patient satisfaction with postoperative spine rehabilitation at the National Orthopaedic Hospital Dala, Kano, is profoundly low, with only 42.1% of patients reporting overall satisfaction. The findings directly reflect the severe resource constraints under which the Physiotherapy Department operates: 5 trained physiotherapists managing 100 patients daily, 10-minute weekly sessions, ill-equipped facilities, and no staff training opportunities [10,11].

The 42.1% satisfaction rate is substantially lower than the 65–80% reported from well-resourced rehabilitation settings in high-income countries [21,22] and even below the 48–55% reported from Nigerian general outpatient studies [23,24]. This is unsurprising given that every aspect of the rehabilitation experience is compromised by resource limitations.

The domain-specific satisfaction scores are revealing: facility/equipment (18.7%) and access (31.3%) were the lowest, while therapist-patient interaction (58.2%) was highest. This pattern suggests that physiotherapists, despite overwhelming caseloads and time pressure, maintain professional and courteous interactions—a testament to their dedication [17]. However, their efforts cannot compensate for systemic deficiencies in infrastructure and staffing.

The ratio of 5 therapists to 100 patients daily yields an average of 8 minutes per patient if all time were spent on direct care, which is precisely what we observed (median 10 minutes). This is grossly inadequate for postoperative spine rehabilitation, which ideally requires 30–60 minutes for comprehensive assessment, therapeutic exercise instruction, manual therapy, gait training, and patient education [10,25].

Session duration <10 minutes independently predicted dissatisfaction (OR: 0.45), and 67.2% of dissatisfied patients cited short sessions. Within 10 minutes, therapists can barely perform a quick check, let alone provide meaningful therapeutic intervention or education. Patients leave without understanding their exercises or feeling that any progress has been made [12].

Perceived inadequacy of equipment was the strongest predictor of dissatisfaction (OR: 4.76 for satisfaction among those who perceived equipment adequate). The 78.8% of dissatisfied patients citing equipment problems reflects a department lacking basic therapeutic tools—exercise devices, electrotherapy machines, gait aids, treatment plinths [13]. Without appropriate equipment, rehabilitation cannot be effective, and patients recognize this.

Only 28.7% of patients saw the same therapist each week, and this lack of continuity independently predicted dissatisfaction (OR: 1.96 for satisfaction with continuity). Continuity fosters therapeutic alliance, enables progress tracking, and ensures consistent exercise prescription [26]. The current system, where patients see whichever therapist is available, undermines these benefits.

Fewer than half of patients received a home exercise programme (45.6%) or felt exercises were adequately explained (54.4% among satisfied). Both factors independently predicted satisfaction, yet the 10-minute session leaves no time

for proper instruction. Home exercise programmes are essential for postoperative recovery, as rehabilitation occurs primarily outside the clinic [27]. Without them, patients cannot actively participate in their recovery.

Waiting time >60 minutes (experienced by 32.7%) independently predicted dissatisfaction (OR: 2.63 for satisfaction with shorter waits). With 100 patients passing through a small department, overcrowding and delays are inevitable [23]. Patients wait 45 minutes for 10 minutes of care—a ratio that breeds frustration.

The absence of in-house training or opportunities for external courses perpetuates outdated practices and prevents adoption of evidence-based protocols [14]. Staff cannot learn new techniques, implement modern rehabilitation approaches, or improve efficiency. Patients sense this stagnation, with 17.0% explicitly requesting staff training.

Our findings demand urgent, multi-level interventions:

- Increase staffing: The most fundamental intervention is increasing the number of physiotherapists. The current ratio of 1:20 (therapist:patients) is unsustainable. Recruitment of additional therapists, deployment of more assistants, and task-shifting where appropriate could increase capacity [28].
- Extend session duration: Sessions must be extended to at least 30 minutes. This requires either reducing daily patient load (through appointment systems) or increasing therapist numbers to maintain volume while increasing individual time [10].
- Equip the department: Investment in basic therapeutic equipment—exercise devices, electrotherapy machines, gait aids, treatment plinths—is essential. Without tools, rehabilitation cannot be effective [13].
- Implement appointment systems: Staggered appointments rather than all patients arriving simultaneously could reduce waiting times and improve patient flow [29].
- Ensure continuity of care: Systems to assign patients to specific therapists and maintain that assignment weekly would enhance therapeutic alliance and treatment effectiveness [26].
- Provide written home exercise programmes: Condition-specific illustrated exercise leaflets in Hausa and English could supplement verbal instruction, addressing the information deficit without requiring additional session time [27].
- Invest in staff development: Establish in-house training programmes, facilitate attendance at national conferences, and explore online learning opportunities. Without ongoing education, practice cannot evolve [14].
- Improve facilities: Basic improvements—privacy screens, cleanliness, adequate seating—would enhance the patient experience even before treatment begins [15].
- Implement quality improvement programmes: Regular patient satisfaction surveys, clinical audits, and peer review could identify areas for improvement and track progress [30].

Our findings are consistent with the limited Nigerian rehabilitation literature. A study from a tertiary hospital in southwestern Nigeria reported overall physiotherapy satisfaction of 48%, with waiting time and inadequate equipment as major predictors [24]. A Kano-based study of general physiotherapy services found similar dissatisfaction with facilities and session duration [11]. Our spine-specific data show even lower satisfaction, reflecting the complexity of postoperative rehabilitation needs.

This study has several limitations. The single-centre design limits generalizability to other Nigerian physiotherapy departments. The cross-sectional nature captures satisfaction at one time point; longitudinal studies could assess changes over time. Social desirability bias may have inflated satisfaction ratings, though the low overall rate suggests this was minimal. The study did not link satisfaction to functional outcomes, which would strengthen the case for intervention. Finally, the questionnaire, while adapted from validated instruments, was not formally validated in this population.

Patient satisfaction with postoperative spine rehabilitation at the National Orthopaedic Hospital Dala, Kano, is profoundly low, with fewer than half of patients reporting satisfaction. Severe resource constraints—inadequate staffing (5 therapists for 100 patients daily), extremely brief sessions (10 minutes weekly), ill-equipped facilities, lack of continuity, and absence of staff training opportunities—are the primary drivers of dissatisfaction. Patients wait long hours for minimal therapeutic contact, receive inadequate explanation, and lack the equipment and home programmes essential for recovery. Urgent system-level interventions including increased staffing, equipment provision, extended session duration, continuity of care, and staff development programmes are needed to improve rehabilitation quality and patient experience. The voices of patients in this study- describing a system stretched to breaking point- demand a response from hospital administration and health policy makers.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

References

- [1] Oosterhuis T, Costa LO, Maher CG, et al. Rehabilitation after lumbar disc surgery. *Cochrane Database Syst Rev*. 2014;(3):CD003007.
- [2] McGregor AH, Probyn K, Cro S, et al. Rehabilitation following surgery for lumbar spinal stenosis. *Cochrane Database Syst Rev*. 2013;(12):CD009644.
- [3] Ostelo RW, Costa LO, Maher CG, et al. Rehabilitation after lumbar disc surgery: an update. *Cochrane Database Syst Rev*. 2008;(4):CD003007.
- [4] Mannion AF, Denzler R, Dvorak J, et al. A randomised controlled trial of post-operative rehabilitation after surgical decompression of the lumbar spine. *Eur Spine J*. 2007;16(8):1101-17.
- [5] Nielsen PR, Andreasen J, Asmussen M, et al. Costs and quality of life for patients with lumbar spinal fusion. *Eur Spine J*. 2008;17(7):945-53.
- [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.
- [7] Hush JM, Cameron K, Mackey M. Patient satisfaction with musculoskeletal physical therapy care: a systematic review. *Phys Ther*. 2011;91(1):25-36.
- [8] Hills R, Kitchen S. Satisfaction with outpatient physiotherapy: a survey comparing the views of patients with acute and chronic musculoskeletal conditions. *Physiother Theory Pract*. 2007;23(1):21-36.
- [9] Goldstein MS, Elliott SD, Guccione AA. The development of an instrument to measure satisfaction with physical therapy. *Phys Ther*. 2000;80(9):853-63.
- [10] World Physiotherapy. Description of physical therapy policy statement. London: World Physiotherapy; 2019.
- [11] Bello B, Kaka B, Abdullahi A, et al. Patient satisfaction with physiotherapy services in a tertiary hospital in Northern Nigeria. *Niger J Med Rehabil*. 2020;23(1):45-52.
- [12] Deutscher D, Horn SD, Dickstein R, et al. Associations between treatment processes, patient characteristics, and outcomes in outpatient physical therapy practice. *Arch Phys Med Rehabil*. 2009;90(8):1349-63.
- [13] Ehiri JE, Oguntona T, Ogunnowo BE, et al. Equipment availability in Nigerian physiotherapy departments. *Physiotherapy*. 2005;91(3):187-93.
- [14] Federal Ministry of Health Nigeria. National strategic health development plan 2018-2022. Abuja: FMOH; 2018.
- [15] World Health Organization. Rehabilitation in health systems. Geneva: WHO; 2017.
- [16] National Orthopaedic Hospital Dala-Kano. Annual report 2023. Kano: NOHD; 2024.
- [17] National Orthopaedic Hospital Dala. Physiotherapy Department. Available from: <https://nohkano.gov.ng/departments/physiotherapy/>.
- [18] Charan J, Biswas T. How to calculate sample size for different study designs in medical research? *Indian J Psychol Med*. 2013;35(2):121-6.
- [19] Roush SE, Sonstroem RJ. Development of the Physical Therapy Outpatient Satisfaction Survey (PTOPS). *Phys Ther*. 1999;79(2):159-70.
- [20] Beattie P, Turner C, Dowda M, et al. The MedRisk Instrument for Measuring Patient Satisfaction with Physical Therapy Care: a psychometric analysis. *J Orthop Sports Phys Ther*. 2005;35(1):24-32.

- [21] Monnin D, Perneger TV. Scale to measure patient satisfaction with physical therapy. *Phys Ther.* 2002;82(7):682-91.
- [22] Casserley-Feeney SN, Phelan M, Duffy F, et al. Patient satisfaction with private physiotherapy for musculoskeletal pain. *BMC Musculoskelet Disord.* 2008; 9:50.
- [23] Oche MO, Adamu H. Determinants of patient waiting time in the general outpatient department of a tertiary health institution in north western Nigeria. *Ann Med Health Sci Res.* 2013;3(4):588-92.
- [24] Odole AC, Akinpelu AO. Patients' satisfaction with physiotherapy care in three Nigerian hospitals. *J Niger Soc Physiother.* 2010;18(1):12-9.
- [25] American Physical Therapy Association. Guide to physical therapist practice 3.0. Alexandria: APTA; 2014.
- [26] Haggerty JL, Reid RJ, Freeman GK, et al. Continuity of care: a multidisciplinary review. *BMJ.* 2003;327(7425):1219-21.
- [27] Sluijs EM, Kok GJ, van der Zee J. Correlates of exercise compliance in physical therapy. *Phys Ther.* 1993;73(11):771-82.
- [28] World Health Organization. Task shifting: rational redistribution of tasks among health workforce teams. Geneva: WHO; 2007.
- [29] Cayirli T, Veral E. Outpatient scheduling in health care: a review of literature. *Prod Oper Manag.* 2003;12(4):519-49.
- [30] Donabedian A. The quality of care: how can it be assessed? *JAMA.* 1988;260(12):1743-8.