PCR237

Medtronic

Patient activation and health outcomes in spinal surgery: **A systematic literature review of measures, effects, and strategies**

M. Zahra, C. Cherian, N. Mohamed - *Medtronic International Trading Sàrl, Tolochenaz, Vaud, Switzerland*

Introduction

- Patient activation is defined as a patient's knowledge, skills, confidence, and behaviors in managing their health.
- Patient activation is crucial in spinal surgeries, where the complexities of procedures, rehabilitation protocols, and long-term recovery necessitate active patient involvement.

Objectives

To understand the association between activation and patient health outcomes, and to assess the strategies employed to increase patient activation in spine surgical patients.

Methods

- Medline (OVID), EMBASE (OVID), PsycINFO (OVID), and Cochrane Central Register for Controlled Trials (CENTRAL) were searched.
- Search terms included a combination of keywords and subject headings, such as patient activation, empowerment, engagement, spine, surgery, digital health, health literacy, and care pathways.
- **Table 1** presents PICOS criteria for the inclusion of articles.
- **Figure 1** shows the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram.

Results

- Forty-nine studies were included in this review. Twelve studies (24.5%) utilized validated activation measures, which are Patient Activation Measure (PAM) and Hopkins Rehabilitation Engagement Rating Scale (HRERS). These studies are shown in **Table 2** along with identified association with health outcomes and the corresponding activation strategies.
- Eleven studies (22.4%) found a positive association between patient satisfaction and improved patient activation, and eight studies (16.3%) were associated with the activation strategies implemented.
- Four studies (8.2%) found a negative association with depression, while two studies (4.1%) also found a negative association with anxiety. Enhanced pain relief and functional recovery were also associated with increased levels of patient activation.
- Twenty-seven studies (55.1%) used strategies to increase patient engagement. These strategies included digital care pathways, education, physical therapy, and motivational interviews, and were found to decrease the length of stay and complications while enhancing functional and physical outcomes.

Table 1: Eligibility Criteria

Study Population: • Adults (>18 years) irrespective of their gender, ethnicity, underlying spinal pathology, or severity and duration of their disease. No geographic restrictions will be applied.	**Intervention:** • Patients undergoing spinal or cranial surgery only
Outcomes: • Patient activation or patient engagement measures	**Other Criteria:** • Only reports from the last two decades were included. • Reports not in English, incomplete, or available only as an abstract were excluded.

Figure 1: PRISMA Flow Diagram

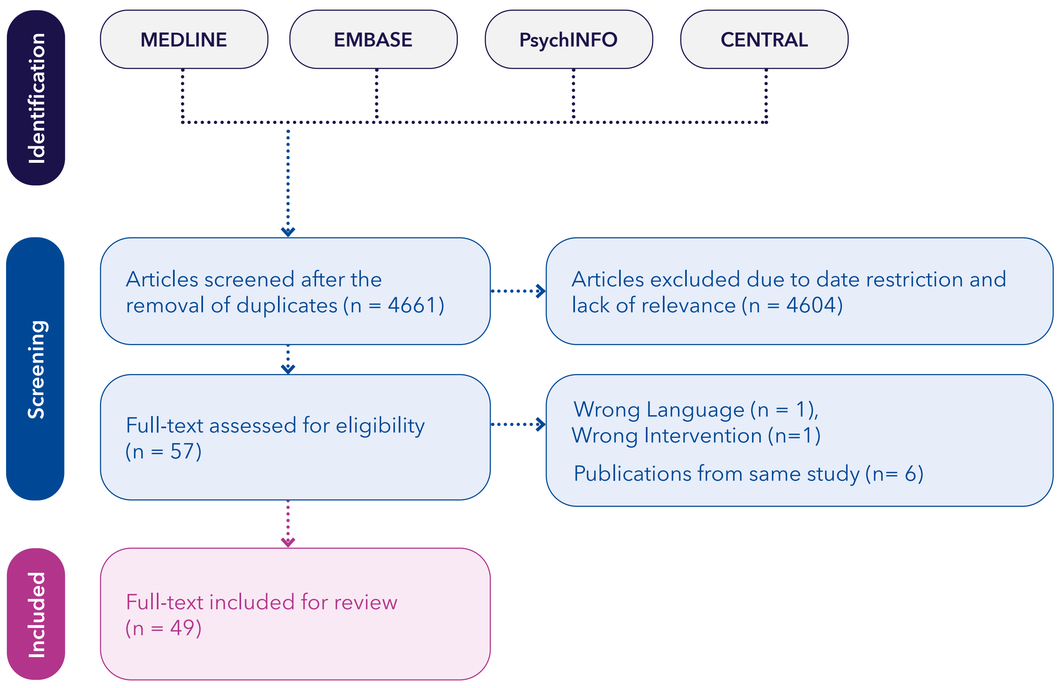

Table 2: Patient Activation Levels, Associated Health Outcomes and Activation Strategies.

	Patient Activation	Health Outcomes									Activation Strategy
Author, year	Activation Measuring Tool	Depression	Anxiety	Hope	Fatigue	Pain	Physical health	Disability	Psychosocial Risks	Satisfaction	
Block, 2019	PAM-13								–		N/A
Harris, 2020	PAM-13	–	–		–			–		+	N/A
Jenkins, 2020	PAM-10					–	+				Presurgical Education
McNeely, 2021	PAM-13	–		x	–	–		–		+	N/A
Patel, 2019	PAM-10					x	x				N/A
Sachdev, 2023	PAM-13	–	–			–	+			+	N/A
Skolasky, 2008, 2011	PAM-13, HRERS	–		+		–	+				Physical Therapy
Skolasky, 2015(I,II), 2018	PAM-13, HRERS							–			Health Behavior Change Counseling (telephone)
Tang 2023	PAM-13										N/A

Key: + (positive correlation), - (negative correlation), x (no correlation)

Conclusions

- **Patient activation was linked with improved health outcomes** such as physical health, self-efficacy, locus of control, and satisfaction.
- Strategies designed to enhance patient activation proved effective, leading to **higher satisfaction, reduced complications**, shorter hospital stays, and improved functional outcomes.
- These findings highlight the **critical role of patient activation in optimising spinal surgery outcomes**, emphasising the significance of integrating activation strategies to **enhance patient well-being and surgical experiences**.
- By implementing tailored interventions and individualised approaches, like digital care pathways, it is possible to **empower patients** to take an active role in their health and **achieve improved outcomes**. This personalised approach holds the potential to drive efficiency, cost containment, and elevated healthcare quality within the field of spine surgery.

REFERENCES

1. Block AR, Marek RJ, Ben-Porath YS. Patient Activation and Spine Surgery Results. J Clin Psychol Med Settings. 2019;26(2):123–130.
2. Harris AB, Kebaish F, Riley LH, et al. Patient Activation Predicts Satisfaction in Spine Disorders. J Neurosurg Spine. 2020;32(6):914–920.
3. Jenkins NW, Parrish JM, Mohan S, et al. Preoperative Activation Predicts Outcomes in Lumbar Decompression. Eur Spine J. 2020;29(9):2222–2230.
4. McNeely EL, Sachdev R, Rahman R, et al. Depression and Activation in Spine Surgery. J Orthop. 2021;26:8–13.
5. Patel DV, Yoo JS, Block AM, et al. Activation Not Linked to Outcomes in ACDF. Clin Spine Surg. 2019;32(10)–E456.
6. Sachdev R, Mo K, Wang KY, et al. Activation Predicts Clinically Important Differences in Spine Surgery. Spine J. 2023;23(1):85–91.
7. Skolasky RL, MacKenzie EJ, Wegener ST, et al. Activation and Physical Therapy Adherence in Spine Surgery. Spine. 2008;33(21).
8. Skolasky RL, Mackenzie EJ, Wegener ST, et al. Activation and Functional Recovery in Spine Surgery. J Bone Joint Surg Am. 2011;93(18):1665–1671.
9. Skolasky RL, Maggard AM, Li D, et al. Counseling for Degenerative Lumbar Stenosis: Part I. Arch Phys Med Rehabil. 2015a;96(7):1200–1207.
10. Skolasky RL, Maggard AM, Li D, et al. Counseling for Degenerative Lumbar Stenosis: Part II. Arch Phys Med Rehabil. 2015b;96(7):1208–1214.
11. Skolasky RL, Maggard AM, Wegener ST, et al. Telephone-Based Rehabilitation Engagement in Spinal Stenosis. J Bone Joint Surg Am. 2018;100(1):21–30.
12. Tang X, Huang J, Wang W, et al. Predictors of Activation in Spinal Cord Injury. Jpn J Nurs Sci. 2023;20(3)

Europe.
Medtronic International Trading Sàrl.
Route du Molliau 31
Case postale
CH-1131 Tolochenaz
www.medtronic.eu
Tel: +41 (0)21 802 70 00
Fax: +41 (0)21 802 79 00

medtronic.eu