

# Patient-Centered Care in Orthopedic Education: Bridging Gaps for Holistic Outcomes

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## Learning Point of the Article:

Integrating patient-centered care (PCC) into orthopedic education transforms clinical training by bridging the gap between technical expertise and holistic patient outcomes, fostering empathy, shared decision-making, and improved recovery experiences.

## Abstract

Patient-centered care (PCC) has emerged as a pivotal approach in healthcare, emphasizing the need to treat patients as active participants in their care rather than passive recipients. It focuses on understanding the unique needs, values, and preferences of individuals, fostering empathy, shared decision-making, and holistic outcomes. This scoping review explores the role of mentorship, feedback mechanisms, and reflective practices in fostering empathy and cultural competence. This article examines the challenges in implementing PCC within the rigid frameworks of medical curricula and proposes actionable strategies for overcoming these barriers. By aligning orthopedic education with PCC principles, medical institutions can cultivate a new generation of orthopedic surgeons who prioritize holistic outcomes, ensuring comprehensive care that meets the physical, emotional, and social needs of patients. The review delves into the concept of PCC within the context of orthopedic training, exploring its relevance, current shortcomings, and strategies for effective implementation. It highlights innovative teaching methods, the role of interdisciplinary collaboration, and the importance of fostering empathy and cultural competence among orthopedic trainees. The integration of PCC into orthopedic education is a transformative step toward achieving holistic outcomes in musculoskeletal health. Adopting PCC in orthopedic education has far-reaching benefits. It fosters stronger doctor-patient relationships, leading to greater patient satisfaction and trust. Patients who feel heard and involved in their care are more likely to adhere to treatment plans and experience improved clinical outcomes. Moreover, PCC equips orthopedic surgeons to address the emotional and social dimensions of recovery, promoting a better quality of life for patients. PCC represents a transformative approach in orthopedic education, bridging the gap between technical expertise and holistic patient outcomes. As healthcare evolves, the role of PCC becomes increasingly significant in addressing not only the physical but also the emotional, social, and psychological needs of patients. Integrating PCC into orthopedic education equips future surgeons with the skills necessary to foster trust, empathy, and shared decision-making, ultimately enhancing patient satisfaction and recovery.

**Keywords:** Integrated, patient-centered care, orthopedic education, bridging gaps, holistic outcomes.

## Introduction

Patient-centered care (PCC) has emerged as a pivotal approach in healthcare, emphasizing the need to treat patients as active participants in their care rather than passive recipients. It focuses on understanding the unique needs, values, and preferences of

individuals, fostering empathy, shared decision-making, and holistic outcomes. The key patient satisfaction factors are patient preferences, care coordination, emotional and physical comfort, attention of friends and family members, health education, and good healthcare access [1]. In the field of orthopedics, where

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treatment often involves complex interventions and prolonged recovery periods, the integration of PCC is particularly significant. Orthopedic care not only addresses physical ailments such as fractures, arthritis, and musculoskeletal disorders but also impacts patients' emotional and social well-being [2, 3, 4].

Despite its importance, PCC is often underemphasized in traditional orthopedic education, which primarily focuses on technical expertise and clinical knowledge. This gap in training can lead to challenges in communication, reduced patient satisfaction, and suboptimal holistic outcomes. As healthcare evolves, there is a pressing need to bridge these gaps by embedding PCC principles into orthopedic education [5, 6, 7, 8, 9]. This article delves into the concept of PCC within the context of orthopedic training, exploring its relevance, current shortcomings, and strategies for effective implementation. It highlights innovative teaching methods, the role of interdisciplinary collaboration, and the importance of fostering empathy and cultural competence among orthopedic trainees. By addressing these aspects, the article aims to outline a roadmap for transforming orthopedic education to produce surgeons who excel not only in technical skills but also in delivering comprehensive, patient-focused care that enhances recovery and overall quality of life [2, 10, 11, 12].

### Evolution of PCC

PCC has emerged as a pivotal approach in modern healthcare, emphasizing the inclusion of patients' values, preferences, and needs in clinical decision-making. PCC has been shown to contribute significantly to better health outcomes. Engle et al. stated that this approach emphasizes the individual's preferences, needs, and values, and integrates them into the healthcare process. By focusing on collaboration between the patient and healthcare providers, PCC helps ensure that care is tailored to the individual [13].

In orthopedic education, this approach offers the potential to bridge gaps between technical expertise and holistic patient outcomes. This review explores key themes in the literature regarding the integration of PCC in orthopedic education [3, 14, 15, 16, 17, 18, 19].

1. Theoretical foundations of PCC: PCC is rooted in the biopsychosocial model of health, which contrasts with the traditional biomedical model. Stewart et al. (2000) highlighted that PCC fosters better communication, trust, and satisfaction by addressing patients' physical, emotional, and social needs. Epstein and Street (2011) emphasized the importance of shared decision-making, which aligns with the principles of PCC, enabling collaborative treatment planning.

2. Impact of PCC on patient outcomes: Studies consistently demonstrate the positive impact of PCC on clinical outcomes. Rathert et al. (2013) conducted a systematic review showing improved patient satisfaction, adherence to treatment, and reduced recovery times in patient-centered orthopedic care. Similarly, Zgierska et al. (2014) reported that PCC reduces anxiety and improves functional outcomes in surgical patients.

3. PCC in orthopedic education: Orthopedic education traditionally focuses on technical skills and disease management. However, recent studies advocate for incorporating PCC principles into training programs. Farley and Weinstein (2006) argued that orthopedic surgeons must develop communication skills and empathy to align with PCC practices. The CanMEDS (2015) framework also emphasizes the role of communication and professionalism in medical education, reinforcing the importance of PCC.

4. Challenges in implementing PCC in orthopedic education: Despite its benefits, integrating PCC into orthopedic education faces several barriers. Levinson et al. (2010) noted that time constraints, lack of faculty training, and rigid curricula often hinder the adoption of PCC principles. In addition, Makary and Daniel (2016) highlighted systemic issues, such as limited resources and a focus on procedural efficiency, which can detract from patient-centered approaches.

5. Strategies for bridging gaps: Innovative educational strategies are essential to bridge gaps in orthopedic education. Simulation-based learning, as discussed by Epstein et al. (2005), allows trainees to practice patient-centered communication in controlled environments. Furthermore, integrating patient narratives and feedback into the curriculum can enhance empathy and understanding of patient perspectives (Barry and Edgman-Levitan, 2012).

6. Holistic outcomes in orthopedic care: The ultimate goal of PCC in orthopedic education is to achieve holistic outcomes, encompassing physical recovery, psychological well-being, and social reintegration. Kitson et al. (2013) emphasized that PCC not only improves clinical outcomes but also enhances the overall healthcare experience for patients and their families.

The literature underscores the critical role of PCC in transforming orthopedic education and practice. By addressing the gaps between technical training and holistic patient care, PCC offers a pathway to improved outcomes and patient satisfaction. However, achieving this requires systemic changes in educational frameworks, faculty training, and institutional support. This review highlights the need for continued research and innovation in integrating PCC into orthopedic education to meet the evolving demands of healthcare.



### Highlights of PCC in Orthopedic Education

Orthopedic education has traditionally focused on technical skills and biomechanical understanding to treat musculoskeletal disorders effectively. However, with the evolving landscape of healthcare, there is a growing recognition of the need for a patient-centered approach. This approach emphasizes empathy, communication, shared decision-making, and holistic care to improve patient satisfaction and outcomes. Integrating PCC into orthopedic education can bridge existing gaps and ensure a more holistic approach to healthcare delivery. This article emphasizes the importance of transforming orthopedic education to align with the principles of PCC, paving the way for more compassionate and effective healthcare.

### Need for PCC in Orthopedics

Orthopedic patients often face long-term conditions such as arthritis, fractures, and spinal disorders, requiring not only medical intervention but also psychological and emotional support. While orthopedic surgeons are adept at diagnosing and treating physical conditions, addressing patients' mental, emotional, and social needs remains a challenge. Studies show that patients who feel heard and included in decision-making experience better recovery rates, adhere to treatment plans, and report higher satisfaction levels. However, current orthopedic education often lacks a structured framework for teaching these skills, focusing predominantly on surgical and clinical expertise [20, 21].

### Barriers to PCC in Orthopedic Education

Several factors hinder the integration of PCC into orthopedic education:

1. Curriculum gaps: Most medical curricula prioritize technical skills over communication and empathy training
2. Time constraints: Orthopedic surgeons and trainees often face packed schedules, leaving little time to engage deeply with patients
3. Lack of faculty training: Educators themselves may not be equipped to teach PCC
4. Cultural and systemic challenges: In some settings, the hierarchical nature of medical practice discourages open communication with patients [22, 23, 24, 25].

### Strategies for Integration

To incorporate PCC into orthopedic education, the following strategies can be implemented:

1. Curriculum development: Introduce modules on

communication skills, empathy, and shared decision-making and include case-based learning where students analyze patient stories to understand the psychosocial aspects of care.

2. Simulation and role-playing: Conduct workshops where students interact with standardized patients to practice communication and empathy and use virtual reality or augmented reality tools to simulate patient interactions.
3. Interdisciplinary learning: Collaborate with psychologists, physiotherapists, and social workers to provide a comprehensive understanding of patient needs.
4. Patient feedback mechanisms: Encourage patients to provide feedback on their experiences with trainees and use this feedback as a learning tool for students to reflect on and improve their approach.
5. Faculty training: Organize faculty development programs to equip educators with the skills to teach and model PCC.
6. Evaluation metrics: Assess students on their ability to communicate effectively, demonstrate empathy, and involve patients in decision-making [26, 27].

### Benefits of PCC in Orthopedic Practice

1. Improved patient outcomes: Engaged and informed patients are more likely to adhere to treatment plans, leading to better recovery.
2. Enhanced patient satisfaction: Patients who feel valued and respected are more likely to trust their healthcare providers.
3. Reduced burnout: A patient-centered approach can foster better relationships, reducing stress for both patients and providers.
4. Holistic care delivery: Addressing physical, emotional, and social needs ensures comprehensive care.
5. Reduced costs by reducing the number of days of hospital stay and the number of review visits to the health center [28, 29, 30, 31].

### Case examples of PCC in orthopedic education

1. Case for PCC in orthopedics: Farley and Weinstein discuss the paradigm shift from disease-centered to PCC in orthopedics. They emphasize the importance of incorporating PCC into orthopedic practice and education to enhance patient outcomes.
2. Patient education in orthopedics: The role of information design and user experience: Goldschmidt et al. explore how information design and user experience can improve patient education in orthopedics, particularly for conditions like osteoarthritis. They highlight the need for patient-centered



educational materials to enhance health literacy and patient engagement.

3. Pre-operative education – PCC approach: This study examines the impact of cost-effective, timely, quality, patient-centered pre-operative education on orthopedic patient outcomes. The findings suggest that such educational interventions can improve patient satisfaction and recovery.

4. Assessment of patient-centered and family-centered care: This article assesses patient engagement in orthopedic surgery, focusing on strategies to prevent wrong-site surgery. It underscores the importance of involving patients and families in the care process to enhance safety and outcomes.

5. Effectiveness of orthopedic patient education in improving outcomes: This review considers studies on adult patients requiring elective orthopedic surgery and examines how patient education influences outcomes. The review highlights the benefits of patient-centered educational approaches in improving recovery and satisfaction.

These examples illustrate the significance of integrating PCC principles into orthopedic practice and education to bridge gaps and achieve holistic patient outcomes.

### Integration of PCC Into Orthopedic Education

The integration of PCC into orthopedic education is a transformative step toward achieving holistic outcomes in musculoskeletal health. Despite the undeniable importance of technical proficiency in orthopedics, an overemphasis on clinical and procedural skills often sidelines the interpersonal and empathetic dimensions of care. This education gap can lead to challenges such as diminished patient trust, suboptimal adherence to treatment plans, and inadequate attention to the psychosocial aspects of recovery [32,33,34].

A hip fracture is an unexpected event that necessitates prompt and higher levels of support from caregivers, such as family, friends, and neighbors. Individuals with fractures of the hip require ongoing assistance due to physical deconditioning or reduced function. While the individual is in the hospital, caregivers continue to play an important role in helping with daily activities (such as hygiene, dressing, and eating), as well as offering social and emotional support. Caregivers of individuals with hip fractures have reported challenges in adjusting to their new responsibilities, managing stress, navigating the unfamiliar, accessing the right information, and understanding the discharge process [35].

### Challenges in Current Orthopedic Education

Orthopedic education traditionally focuses on biomechanics,

surgical techniques, and disease management, often neglecting the broader context of patient needs. Limited exposure to communication training, cultural competence, and shared decision-making creates a disconnect between the physician's expertise and the patient's expectations. In addition, rigid curricula and time constraints in medical training leave little room for incorporating PCC principles [11,36,37,38].

### Strategies to Bridge the Gap

To address these challenges, several strategies can be implemented:

1. Curricular reforms: Incorporating PCC modules into orthopedic education can ensure that students and trainees develop a deeper understanding of patient perspectives. These modules should include topics such as empathy, active listening, and managing patient expectations.
2. Simulation and role-playing: Simulated patient interactions and role-playing scenarios can provide trainees with opportunities to practice communication and decision-making skills in a controlled environment. For instance, scenarios involving complex discussions about surgical risks or rehabilitation plans can prepare trainees for real-life challenges.
3. Interdisciplinary collaboration: Encouraging collaboration with physiotherapists, occupational therapists, and psychologists can expose trainees to a multidisciplinary approach to patient care. This holistic perspective helps trainees appreciate the importance of addressing both physical and psychosocial aspects of recovery.
4. Mentorship and reflective practices: Mentorship programs can play a crucial role in instilling PCC values. Experienced orthopedic surgeons can model compassionate care, while reflective practices such as journaling or case discussions can help trainees internalize lessons from patient interactions.
5. Patient feedback mechanisms: Incorporating structured patient feedback into training can provide valuable insights into the effectiveness of communication and care delivery. This feedback can guide trainees in refining their approach to PCC [39,40].

### Impact on Holistic Outcomes

Adopting PCC in orthopedic education has far-reaching benefits. It fosters stronger doctor-patient relationships, leading to greater patient satisfaction and trust. Patients who feel heard and involved in their care are more likely to adhere to treatment plans and experience improved clinical outcomes. Moreover, PCC equips orthopedic surgeons to address the emotional and social dimensions of recovery, promoting a better quality of life

for patients [41].

### Future Directions

To sustain the integration of PCC in orthopedic education, ongoing research, and innovation are necessary. Studies assessing the impact of PCC training on patient outcomes and trainee performance can provide evidence for further curricular reforms. In addition, leveraging technology such as virtual reality and artificial intelligence can enhance PCC training by simulating diverse patient scenarios.

The terminology of “eHealth technology” refers to the utilization of modalities such as Mobile apps, and social media platforms, to deliver digital information, emergency interventions, and related educational awareness content to the patients and their relatives [42].

Bridging the gap between traditional orthopedic education and PCC is essential for achieving holistic outcomes. By incorporating PCC principles into training, orthopedic education can produce surgeons who not only excel in technical expertise but also deliver compassionate, comprehensive care. This shift will ultimately benefit both patients and the healthcare system, fostering a culture of empathy and collaboration in orthopedics.

### Conclusion

PCC represents a transformative approach to orthopedic education, bridging the gap between technical expertise and holistic patient outcomes. As healthcare evolves, the role of PCC becomes increasingly significant in addressing not only the physical but also the emotional, social, and psychological needs of patients. Integrating PCC into orthopedic education equips future surgeons with the skills necessary to foster trust, empathy, and shared decision-making, ultimately enhancing patient satisfaction and recovery. Future efforts must focus on developing structured frameworks and fostering a culture of PCC within orthopedic education, ensuring that the next generation of orthopedic surgeons is equipped to deliver care that is as compassionate as it is competent.

### Clinical Message

- PCC enhances orthopedic outcomes by fostering empathy, shared decision-making, and addressing psychosocial needs alongside physical recovery
- Integrating PCC into orthopedic training equips future surgeons with essential communication and cultural competence skills, improving patient trust and treatment adherence
- Structured feedback, simulation, and interdisciplinary collaboration are key strategies to embed PCC principles into orthopedic education and transform clinical practice.

**Declaration of patient consent:** The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given the consent for his/ her images and other clinical information to be reported in the journal. The patient understands that his/ her names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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