

Leadership in the Surgeon and Its Benefit in Surgical Practice

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Abstract

Leadership in surgery is an essential pillar of surgical practice, as it allows for improved patient care, safety, and clinical outcomes. It is important to note that an effective surgical leader not only possesses technical skills but also competencies in communication, decision-making, and teamwork (non-technical skills), which enable the management of multidisciplinary teams, fostering a space of safety and thus guiding the team toward a common vision. There are various leadership styles that can be implemented in the surgical field; the choice of the appropriate style depends on the context, situations, and the needs of the environment. Likewise, surgical leadership involves promoting responsible innovation, assessing the risks and benefits of new techniques, and ensuring safe and effective patient care.

Keywords: Leadership; surgery; Surgical leadership; Non-technical skills; Technical skills

Introduction

Historically, surgeons have played a leading role in decision-making, taking on diagnostic and therapeutic challenges. This is even true today, when advances in medical technology simplify work algorithms and surgical teams are multidisciplinary. One of the main characteristics of a surgeon is their ability to lead this team, exercising leadership effectively in their professional settings, demonstrating collaborative and organizational skills with all members during the different surgical periods (preoperative, intraoperative, and postoperative) [1].

The following article aims to link the effectiveness of leadership in surgeons and its benefits in surgical practice, exploring each of the fundamental characteristics of a leader.

Materials and Methods

A systematic literature review was conducted to identify, analyze, and synthesize the available evidence on surgical leadership and its impact on surgical practice. The literature search was conducted in the following databases: PubMed, Google Scholar, and Cochrane, covering studies published up to 2025, in English and Spanish. MESH terms and keywords combined with operators were used, such as: surgical leadership, nontechnical skills, and leadership styles in the operating room.

Inclusion criteria

Articles that met the following criteria were included:

- Original publications, systematic reviews addressing surgical leadership or its components
- Studies focused on practicing or training surgeons



- Publications available in full text and with open or institutional access
- Studies that describe or evaluate the impact of surgical leadership on safety, surgical team performance, or clinical outcomes.

Exclusion Criteria

- Articles without methodological support
- Duplicate articles or articles with redundant information

The Formula for Leadership

The word "leader" comes from the English word "leader" and refers to a person who acts as a guide or leader of a group and has the ability to influence others to work together toward a common goal [1]. John Maxwell defines leadership as influence, which emphasizes the ability to guide and motivate a team toward the achievement of common goals. He also mentions several fundamental concepts, including "The Law of Process," which establishes that leadership develops daily and not in a single moment. He also proposes the "Law of Navigation," which suggests that a leader is someone who charts a course and guides their team toward the goal. He also proposes the "Law of Solid Ground," which emphasizes that trust is the foundation of leadership. Finally, he introduces the "Law of Respect," which indicates that people naturally follow leaders who are stronger than themselves [2]. The role of the leader is to achieve success of those he leads and that meets the four dimensions of the leader's behavior, established by Rojas-Gutiérrez in his work "The modern surgeon as a leader, which consists firstly in the idealized influence, represented by the charismatic and empathetic performance of the leader with his environment, understanding as the environment the work team (anesthesiologist, nurse, students) and even with the patient, which when seeing the attitude of the leader allows it to influence the form and quality of work in a positive way; second dimension, inspirational motivation, which involves the formation of proposals, goals and / or objectives that will improve the quality of work, through academic and work stimulation with an assertive dialogue, and through this the third dimension is established that involves intellectual stimulation by obtaining feedback about the work done by the leading surgeon, thus allowing to know different opinions or work plans from his work team and consequently implement the fourth dimension of the surgeon which consists of individualized consideration, where through advice the leading surgeon encourages growth in his environment "labor" [3]. Leadership, therefore, is the result of the leader's interaction with his or her team, using motivation to achieve a specific goal. It is an attribute that involves a combination of meaningful vision with the ability to influence others in a non-coercive manner [4]. Likewise, leadership is not a rigid or uniform phenomenon; its effectiveness depends on its ability to adapt to the

team's needs. Hersey and Blanchard propose the situational leadership model as a practical guide for leaders to adjust their styles to the competencies and commitments of their collaborators. This suggests that there is no single leadership style; instead, leaders must adapt their style according to the maturity, competence, and commitment of their collaborators in a specific area.

Among the four key styles of this model, the following stand out

Directive: This involves providing clear and concise guidelines to generate trust in staff who have low competencies but high commitment.

- **Persuasive:** Based on a combination of guidelines, but also motivating, opening up a space for the learning process where new skills and tools can be acquired.
- **Participative:** This approach is for all those collaborators who are already capable, requiring less direction and supervision, but there may be a lack of willingness due to insecurity or lack of motivation.
- **Delegating:** This approach is intended for autonomous and expert teams, characterized by fostering independence and decision-making due to the maturity they have achieved. They are capable, willing to take on responsibilities, and have self-confidence, no longer requiring emotional support or close supervision.

Leadership cannot be defined by individual merits, titles, or salaries. Today, the true essence of a leader lies in the ability to inspire, empower, and build strong relationships with their team [5].

Characteristics that a leader DOES

- **Inspire and empower:** An authentic leader motivates their team to reach their full potential, promoting trust and enthusiasm.
- **Recognize and value:** Genuine appreciation of efforts strengthens relationships and fosters a positive environment.
- **Empathy and understanding:** Listening and showing interest in the team's needs and concerns creates a genuine connection.
- **Create a good work environment:** A healthy environment is vital for collective growth and productivity.
- **Provide development opportunities:** Visionary leaders invest in the professional and personal growth of their employees [5].

Conversely, what a leader DOESN'T do

- Titles and salaries may give power, but they don't guarantee leadership. Commanding and controlling do not foster collaboration or trust.

- Individual achievements reflect skill, but they don't guarantee the ability to lead a team [5].

Being an effective leader is a decisive factor in the satisfaction and performance of participants, which must be carefully monitored because factors such as micromanagement, which leads to a loss of trust and restrictions on their autonomy, creating an inhospitable work environment, as well as a lack of communication accompanied by constant urgency and unrealistic deadlines, will ultimately create high levels of stress. Therefore, ignoring feedback and failing to value contributions reduces commitment and fosters emotional exhaustion, thus preventing a work-life balance (burnout), increasing isolation, and eroding confidence in the entire team's own abilities, negatively impacting emotional well-being and productivity in the work environment. This is why leadership is not only about achieving goals, but also about building environments where people feel valued, supported, and capable of giving their best. It fosters autonomy, delegating tasks, respecting each other's abilities and time, valuing and learning from opinions, implementing fair and equitable recognition systems, and being accessible and empathetic to the team's needs where transparent expectations can be established [5].

Leadership as a Surgeon's Characteristic

Following the theories of Robbins, Woontz, and Weihrich, leadership in surgery can be defined as a capacity for non-coercive influence that mobilizes wills toward a common purpose: patient care. This form of leadership, based on trust, experience, and mutual respect, becomes a fundamental cornerstone of surgical performance and the growth of the teams that make it possible [6]. Among the qualities of a surgeon, the ability to lead medical care and the surgical team is mentioned, and the ability to manage is emphasized under the following characteristics: [4,5]

- Establishes and maintains standards: Ensuring quality and safety by adhering to accepted principles of surgery, complying with professional codes of conduct, and following clinical-surgical protocols.
- Maintains self-control in pressure situations, demonstrating effective leadership and supporting team members.
- Supports and sustains team members, providing emotional and professional assistance to their group and is able to appropriately model their own leadership style.
- Creates alternative possibilities for problem-solving.
- Evaluates risks and benefits.
- Anticipates situations.
- Implements and reviews decisions made [4].

Other characteristics mentioned in the medical literature of an effective leader include: a surgeon who is equitable, an effective communicator, possesses a work ethic, demonstrates a balance between work and social life, is empathetic, has excellent

organizational skills, is professional, possesses technical competence, and, no less importantly, is effective at teaching, and is charismatic [2].

This goes hand in hand with the most common leadership types described in the healthcare field [6]

- **Transformational:** Focuses on the human factor and is not afraid to take risks. It is transformational because it changes the perspective of those around them.
- **Transactional:** Based on a system of rewards and incentives for the employee as long as team members achieve optimal performance.
- **Autocratic:** Does not allow group members to participate in decisions, exercising dominance behaviors that induce submissive responses from the group.
- **Laissez-Faire:** The leader assumes a more passive role, sets objectives and provides the necessary resources, intervening as little as possible, allowing healthcare teams to work independently.
- **Strategic:** The main goals of the healthcare service or institution are defined and communicated to all members of the organization.
- **Democratic:** Also known as participative, this leadership style is often effective in the healthcare sector, as the leader makes decisions by listening to the opinions of team members (Figure 1), [6].

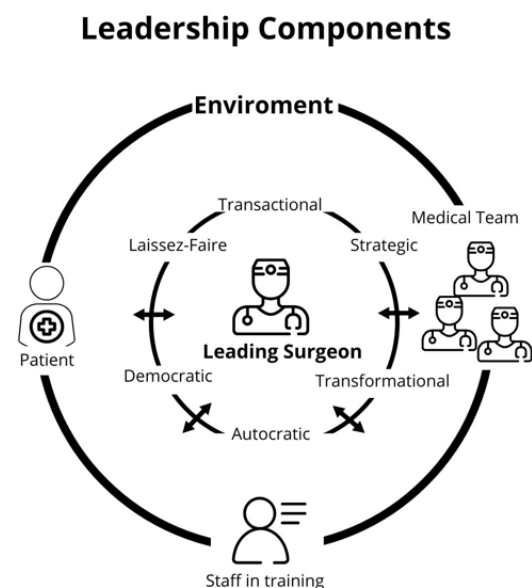


Figure 1: Figure made by the authors.

From a power perspective, leadership in surgery is primarily based on two types: expert power and referent power. The former stems from the recognition of the surgeon's knowledge and experience, while the latter stems from the admiration their behavior generates in others. Both types are independent of hierarchy and depend more

on the individual's qualities. This is unlike coercive or reward power, which can undermine trust [6].

Various leadership theories allow us to understand its practical application in the surgical setting [6]

- **Behavioral approach:** This differentiates task-oriented leaders, who prioritize efficiency and control, from team-oriented leaders, who prioritize the well-being of their employees. However, surgical leadership combines both approaches depending on the circumstances, as proposed by Fiedler's contingent model, which suggests adapting the leader's style to variables such as task structure, interpersonal relationships, and hierarchical position.
- **Path-Goal Theory:** Developed by Evans, this theory provides a key element: motivation. The surgical leader must be able to align incentives with the group's goals. Thus, different leadership styles are identified, such as supportive, participative, or achievement-oriented, each useful in different training phases or types of interventions.
- **Leadership life cycle theory:** This theory provides an evolutionary perspective: as team members gain experience and autonomy, the leader must relinquish leadership and facilitate decision-making. In this sense, leadership is also knowing how to withdraw appropriately, allowing others to flourish [6].

There is no such thing as a typical surgeon; each has their own unique style and type 1. Studies show that surgeons with transformational leadership achieved greater participation and better communication among the surgical team, encouraging the exchange of ideas and minimizing errors during procedures [7]. In the field of surgery and its relationship to situational leadership, the composition and experience of the team can vary considerably. For example, during complex procedures, a leading surgeon may adopt a directive style, where their role consists of providing clear instructions and closely supervising less experienced members. In contrast, with a team of trained and experienced professionals, the surgeon employs a delegating style, thus allowing their team autonomy [5]. Relating to what John Maxwell stated in the surgical field, the leader's influence translates into the surgeon's ability to effectively direct the medical team and their environment, ensuring clear and precise communication during procedures. The surgical leader must commit to continuous learning and constant improvement of his technical and non-technical skills, by virtue of the constant evolution of medicine, updating and adaptation are essential to maintain competence and effectiveness in the operating room, this will allow him to build confidence in himself and his team, thus improving respect and integrity of the work team, which is crucial for harmonious functioning in its environment [2]. A surgical leader's ability to assess their team's competence and commitment is crucial, allowing them to adapt their leadership

style to optimize team performance and ensure patient safety. Additionally, the nature of surgery requires surgeon leaders to be flexible, adjusting their approach in real time according to emerging circumstances [7]. This success is directly related to leadership training programs in general surgery residency, which have demonstrated a positive impact on the activities of surgeons in training, improving their ability to lead teams [8].

Conclusion

The surgeon's leading role during surgical procedures is essential to achieving effective patient outcomes. Likewise, individual recognition of their strengths, weaknesses, abilities, and opportunities is important for personal and professional growth. Leadership in surgery cannot be understood solely through authority or technical effectiveness. It is a profoundly human practice, in which the leading surgeon must integrate knowledge, ethical judgment, emotional intelligence, and pedagogical sensitivity. Leading in the operating room involves making informed, conscious decisions, but also cultivating relationships that allow others to grow, learn, and transform medical practice. Surgical leadership thus becomes a form of service, a way of supporting others in the pursuit of the common good: patient care. Furthermore, it is of utmost importance to mention the characteristics and competencies of the leader and their relationship with the environment in which the surgeon operates, in order to foster effective leadership through training programs for general surgeons that take into account the value of acquiring all the necessary tools to train leaders capable of setting goals and achieving objectives in healthcare centers [9].

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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