Overcoming power distance and deferential speech syndrome in the operating room

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Abstract

Power distance, mitigated speech, and top-down decision paradigms in perioperative care undermine collaboration and compromise patient safety (Kenawy & Schwartz, 2018). These challenges disproportionately affect perioperative nurses, fostering deferential speech syndrome (DSS)—a habitual use of softened language shaped by entrenched power dynamics. Deferential speech syndrome reduces assertiveness, weakens safety-sensitive communication, and amplifies risks associated with hierarchical decision-making, moral injury, and fatigue-induced errors (Applebaum et al., 2020). Understanding these dynamics necessitates exploring interventions to counteract DSS and its detrimental effects, while addressing the challenges that may arise in their implementation.

To address the pressing challenges posed by DSS, evidence from healthcare and analogous high-stakes industries highlights effective strategies for intervention. Actionable solutions include fostering psychological safety to empower all team members (Grailey et al., 2021) and adopting crew resource management (CRM) principles to disrupt power imbalances (Gross et al., 2019). Short-term interventions, such as structured communication tools (e.g., SBAR protocols and closed-loop communication), pre-operative planning sessions, leadership huddles, and bias-awareness training can provide immediate improvements in perioperative collaboration and patient safety. Additional measures, including anonymous feedback systems and post-operative debriefings, further reinforce an environment where critical concerns can be raised without fear of retribution. However, successfully implementing these interventions requires overcoming barriers, such as entrenched hierarchical norms, resistance to change, and resource constraints, all of which will be critically examined. These strategies lay the groundwork for long-term reforms, including leadership development programs, decision-support technologies, and equitable operational policies (Tørring et al., 2019). By integrating these targeted interventions, healthcare institutions can mitigate DSS, reduce hierarchical barriers, and enhance safety-sensitive communication, fostering a culture of inclusivity and collaboration that ultimately improves patient outcomes and team well-being.

While these strategies represent critical first steps, a broader systemic approach is crucial to sustain long-term improvements in perioperative care. The urgency of addressing DSS extends beyond operational efficiency; it is a moral imperative essential to creating equitable, resilient perioperative environments that uphold ethical standards and optimize care delivery. By dismantling hierarchical barriers, prioritizing collaboration, and fostering inclusivity, healthcare systems can establish a model for high-performing surgical teams that enhance both patient outcomes and team well-being.

Keywords: deferential speech syndrome (DSS), power distance in healthcare, hierarchical communication barriers, patient safety and communication, crew resource management (CRM) in surgery, psychological safety in perioperative teams, interdisciplinary collaboration in healthcare

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Institutional challenges, including power distance, mitigated speech systems, and inequities in team collaboration in the operating room (OR), undermine effective teamwork, jeopardize outcomes, and erode the ethical foundations of healthcare (Lee et al., 2023; Pattni et al., 2019). Failures in information exchange, which account for nearly 70% of sentinel events in healthcare, are exacerbated in the OR by rigid structures that suppress the critical insights of nurses (Guttman et al., 2021). These systemic issues underscore the need for a conceptual framework to understand and address the underlying barriers to communication and collaboration in the OR more effectively.

To provide a clearer perspective on these challenges, I have introduced the term deferential speech syndrome (DSS) to describe the habitual use of mitigated speech by perioperative nurses and other junior staff, shaped by entrenched power dynamics.

Deferential speech syndrome diminishes assertiveness and credibility, perpetuating risks associated with hierarchical decision-making, moral injury, and burnout. These patterns weaken team cohesion and organizational resilience, amplifying errors, staff turnover, and operational inefficiencies (Yi et al., 2024). To address the risks posed by DSS, lessons from high-stakes industries, such as aviation, provide valuable insights into fostering balanced decision-making and equitable collaboration.

Structured frameworks, such as crew resource management (CRM), emphasize the importance of valuing all team members' input, creating a more balanced and effective decision-making process (Havinga et al., 2017). While CRM principles have proven effective in other industries, the OR's unique interdisciplinary and culturally diverse environment demands a tailored approach to fostering a supportive and inclusive atmosphere. Competing priorities, entrenched hierarchies, and varying norms around power dynamics, complicate efforts to create an equitable and psychologically safe space (Attri et al., 2015; Zander, 2020).

Recognizing these challenges, this paper introduces DSS as a framework for understanding how power distance impacts perioperative care and provides a roadmap for addressing these barriers. It begins by defining DSS and examining its impact on individuals and organizations. It then positions the OR as a microcosm of broader systemic challenges, focusing on the complexities of entrenched hierarchies and mitigated speech. The discussion explores the "power distance dilemma," evaluating the tension between leadership and equity in decision-making. Drawing insights from other high-stakes industries, the paper concludes with actionable recommendations for reform. By integrating CRM principles, advanced decision-support systems, and leadership development programs, it argues for a cultural shift that strengthens collaboration, improves outcomes, and reinforces ethical integrity in healthcare.

Conceptual Phenomenon: Deference Speech Syndrome

In the OR, imbalances of authority and hierarchical norms create communication barriers that undermine open dialogue and critical decision-making (Rosen et al., 2018). Such dynamics disproportionately affect perioperative nurses, whose input is essential for patient safety and team effectiveness (Pattni et al., 2019). Addressing such structural challenges requires a framework to understand how hierarchical norms shape communication and compromise team dynamics. To address this issue, I introduce the term *deferential speech syndrome* to describe the habitual use of mitigated speech by nurses, shaped by entrenched power dynamics. Deferential speech syndrome reflects how structural imbalances constrain direct communication and devalue critical contributions, perpetuating risks to patient safety (Buljac-Samardžić et al., 2021).

Power distance, or the degree to which unequal relationships are accepted and reinforced within systems, plays a central role in DSS (Dai et al., 2022). Cultural, institutional, and organizational norms foster deference to authority, often discouraging dissent or critical feedback (Daniels & Greguras, 2014). This uneven flow of information leads to decision-making that disproportionately reflects the perspectives of those in leadership cadre while silencing the insights of nurses.

Deferential speech syndrome, a key mechanism through which power distance manifests in the OR, is reinforced further through *mitigated speech,* a communication style in which individuals soften their language to align with expectations of deference (Albelda & Arguedas, 2021). While politeness may be socially appropriate, it undermines clarity in critical settings like the OR. For instance, a nurse might say, "Could we double-check that?" instead of explicitly stating, "That instrument isn't sterile!" This tendency not only weakens the clarity of communication, it also perpetuates a systemic undervaluation of critical input, amplifying the risks of hierarchical decision-making. Such softened communication often results in critical concerns being dismissed or undervalued, reinforcing authority gradients and stifling effective teamwork (Canadian Patient Safety Institute, 2020).

The cumulative impact of DSS extends beyond communication, influencing how input is received and valued within teams (Shah et al., 2015). Even when nurses raise concerns, the combination of mitigated speech and rigid authority structures frequently diminishes their credibility, creating a feedback loop that further entrenches hierarchical norms. These patterns jeopardize team collaboration, weaken decision-making, and ultimately compromise patient outcomes (Hays et al., 2022).

To counteract the pervasive effects of DSS, a comprehensive approach is needed to foster inclusivity and empower all team members. By defining DSS, this paper highlights the profound impact of power distance on perioperative care. Strategies such as structured communication protocols, leadership training, and psychological safety initiatives are essential for dismantling these barriers, ensuring clearer exchanges, stronger collaboration, and improved outcomes (Etchegaray et al., 2017; Etherington et al., 2021).

Human and Organizational Costs

The pervasive effects of DSS ripple far beyond immediate communication breakdowns, shaping the broader landscape of perioperative care. By undermining collaboration, silencing critical voices, and reinforcing hierarchical inequities, DSS not only jeopardizes patient safety but also erodes team morale

and professional resilience (Lee et al., 2024). Understanding these systemic effects requires exploring how DSS manifests in day-to-day communication and decision-making practices within the OR.

Deferential speech syndrome manifests as indirect communication, where nurses temper their language to align with norms of deference. For example, framing critical observations tentatively, such as, "Should we double-check the dosage?" instead of explicitly stating, "This dosage is incorrect," can dilute urgency and lead to the dismissal of vital input. Over time, such patterns reinforce hierarchical norms, impede teamwork, and create moral injury, a conflict that arises when individuals feel unable to act according to their ethical principles, further exacerbating burnout and disengagement (Anderson & Brown, 2010; Hays et al., 2022). Power distance and its effects are commonly reflected in the OR's routine decision-making, underscoring its systemic nature. One particularly impactful example of DSS is the prioritization of non-emergent surgeries after midnight, reflecting authority-driven decisions that overlook safety and workload implications for nurses (Battié et al., 2017; Roche et al; 2024). In these scenarios, dissenting voices are often silenced, reinforcing inequities, and contributing to fatigue-related errors (Kawa et al., 2024).

The effects of DSS are especially pronounced for underrepresented groups in the perioperative workforce (Buljac-Samardžić et al., 2021). Biases tied to rank, gender, or role amplify these challenges, as illustrated by a junior nurse hesitating to raise concerns about a malfunctioning instrument. When her tentative observation is dismissed but later validated by a male colleague, the consequences extend beyond compromised patient safety to feelings of alienation and devaluation. This scenario underscores how the silencing of marginalized voices undermines both team cohesion and institutional morale (Applebaum et al., 2020).

Fatigue, compounded by DSS and power imbalances, further heightens the risk of preventable errors (Rodziewicz et al., 2024). Cognitive impairment caused by excessive workload not only jeopardizes patient safety but also strains institutional resources through inefficiencies, malpractice claims, and sentinel events. Communication breakdowns, central to authority-driven systems, account for a significant share of these financial and operational challenges (O'Daniel & Rosenstein, 2008). To mitigate these cascading effects, targeted interventions must address both the structural and cultural barriers underlying DSS (Buljac-Samardzic et al., 2020; Canadian Patient Safety Institute, 2020).

Expanding on this, bias awareness training and cultural sensitivity programs help mitigate unconscious biases, fostering inclusive environments where all voices are valued (De Brún et al., 2019). In addition, storytelling workshops can humanize the effects of DSS, inspiring cultural shifts and strengthening collaboration. By reducing hierarchical barriers, healthcare organizations can improve operational efficiency, retain skilled professionals, and empower nurses to contribute critical insights on patient care and resource management (Olaleye et al., 2022).

Moreover, these ethical, operational, and financial challenges underscore the systemic impact of DSS in healthcare (Krishnakumar et al., 2021). Overcoming these barriers requires prioritizing open communication, equitable workload distribution, and collaborative decision-making (Endalamaw et al., 2024). Leadership programs must emphasize reducing authority gradients to foster equity, mitigate moral injury, and strengthen team cohesion (Korkmaz et al., 2022). Through these reforms, healthcare institutions can break the cycle of DSS and safeguard patient well-being.

The systemic challenges posed by DSS, hierarchical norms, and communication breakdowns underscore the critical role of the OR in shaping healthcare outcomes. These patterns are not isolated; rather, they reflect broader institutional dynamics that impact both patient safety and team cohesion. Addressing these pervasive issues requires not only targeted interventions but also a reimagining of how the OR functions as a microcosm for systemic reform.

The Operating Room as a Microcosm for Systemic Reform

The OR epitomizes the systemic challenges and opportunities within healthcare, making it a pivotal environment for meaningful reform. In the OR, power distance, resource constraints, and complex team dynamics converge, intensifying structural inefficiencies and communication breakdowns. Yet, this complexity also positions the OR as an ideal setting for piloting interventions that address broader institutional challenges (Pasquer et al., 2024).

This complexity is compounded further by the OR's interdisciplinary nature, which requires seamless collaboration among surgeons, anaesthesiologists, nurses, and technicians. Differences in training, cultural norms, and role expectations often hinder collaboration, highlighting the need for targeted solutions (Etherington et al., 2021). For example, cultural competency training and structured communication protocols can bridge gaps, fostering inclusivity and enabling diverse perspectives to enhance decision-making rather than create division (Zhang, 2023).

Drawing on the success of structured frameworks in high-stakes industries, such as aviation, can provide effective solutions for overcoming challenges in the OR. Frameworks like CRM demonstrate how reducing power distance can enhance safety, efficiency, and collaboration (Alavosius et al., 2017). Implementing these proven strategies and adapting them to

the OR's unique demands can create a model for inclusive and effective teamwork. Furthermore, it can establish a blueprint for addressing challenges on a broader scale. As a microcosm of healthcare, the OR offers a powerful platform for systemic change. Interventions tested and refined in this setting can inform broader organizational reforms, paving the way for more equitable, resilient, and collaborative healthcare environments (Moore et al., 2021).

The Power Distance Dilemma

Delving deeper, efforts to reduce power distance and DSS in surgical settings present a valuable opportunity to enhance team dynamics, improve patient outcomes, and foster equitable collaboration. However, these initiatives also provoke debate, particularly in high-pressure environments like the OR, where efficiency, clarity, and decisive leadership are paramount. Balancing these competing priorities requires a nuanced approach.

One major concern centres on the critical care nature of the OR, where leadership clarity during emergencies is often considered essential. Proponents of traditional hierarchies argue that a clear chain of command ensures swift decision-making and accountability in high-stakes situations (Anderson & Brown, 2010). They caution that inclusive practices, such as soliciting input from all team members, could lead to delays or bottlenecks that jeopardize patient outcomes (Alston et al., 2021).

Adding to this concern, critics from the insurance industry, particularly malpractice insurers in the private sector, emphasize the risks associated with reducing hierarchies in healthcare (Flores, 2022). Insurers warn that dismantling clear leadership structures may blur accountability, making it more difficult to identify responsibility in adverse outcomes (Dalton et al., 2008). This ambiguity could result in increased malpractice claims, higher premiums, or, in some cases, refusal to insure certain providers. Additionally, decentralized decision-making might introduce procedural ambiguities, which could heighten litigation risks or create perceptions of systemic disorganization (Rabinovich-Einy, 2011). Consequently, insurers advocate for balanced reforms that preserve clarity in leadership, while integrating inclusive practices to mitigate liability concerns (Hajek, 2013).

While these concerns are valid, advocates for reducing power distance contend that they overlook the long-term benefits of collective decision-making. Research shows that inclusive practices enhance communication, situational awareness, and risk identification, reducing the likelihood of medical errors (Hajek, 2013; Rabinovich-Einy, 2011). Tools such as SBAR (situation, background, assessment, recommendation) and closed-loop communication empower all team members to voice concerns and observations, enabling the team to identify and address potential risks before they escalate.

Institutions that implement these practices consistently report fewer adverse events, higher patient safety ratings, and reduced malpractice claims, which align with insurers' priorities (Buljac-Samardzic et al., 2021). By framing inclusivity as a strategy to enhance safety and mitigate risk, healthcare organizations can demonstrate that collaboration not only strengthens patient outcomes, but also serves as a sound financial and liability management strategy (Flores, 2022).

Reducing power distance does not require eliminating leadership and instead using an adaptive and inclusive approach. Structured communication frameworks, such as SBAR, maintain clarity while empowering team members to contribute meaningfully to decision-making (Etemadifar et al., 2021). Similarly, dynamic hierarchies, where decision-making authority shifts temporarily based on expertise, strike a balance between leadership and inclusivity. For instance, a nurse monitoring a patient's vitals can flag instability, prompting immediate action, while the surgeon retains control over broader procedural decisions (Garrick et al., 2024; Ghanmi et al., 2024). This model leverages the collective expertise of the team while ensuring accountability and responsiveness.

In addition to operational concerns, cultural and practical barriers complicate efforts to reduce power distance. In high power-distance cultures, where deference to authority is deeply ingrained, junior staff may hesitate to voice concerns, fearing they will be perceived as disrespectful (Fietz et al., 2021; Green et al., 2017). Critics worry that encouraging assertiveness or role reversals could clash with these norms or expose gaps in the expertise of junior staff (Ghanmi et al., 2024).

To overcome these challenges, tailored interventions can create a gradual shift toward inclusivity while respecting cultural norms. Pre-operative planning sessions, structured debriefings, and protected feedback platforms offer safe avenues for team input without disrupting hierarchies (Lin et al., 2022). Furthermore, cultural competency training equips teams to navigate diverse communication styles, fostering collaboration across cultural boundaries (Mundt et al., 2020).

Healthcare systems also must address financial and logistical barriers to implementing these reforms. Critics argue that training programs, cultural competency initiatives, and CRM adaptations require significant investments that may strain resources, especially in underfunded systems (Lazar et al., 2013; Parker et al., 2020). However, research demonstrates that inclusivity delivers long-term cost savings by reducing errors, lowering litigation risks, and improving staff retention (Garrick et al., 2024). Incremental implementation and evidence-based scaling can minimize upfront costs while ensuring practical feasibility (Buljac- Samardžić et al., 2021).

Despite these strategies, resistance from senior staff poses a significant obstacle to reducing power distance. Some view these

reforms as threats to their authority or expertise (Anderson & Brown, 2010; Gong et al., 2019). Engaging these stakeholders is critical to the success of any initiative. Reframing inclusivity-focused reforms as tools to enhance team performance rather than diminish leadership can help garner support. Moreover, pilot programs that demonstrate improved outcomes through inclusivity offer compelling evidence to encourage widespread adoption (Hill Weller et al., 2024).

Ultimately, reducing power distance in surgical settings is not about dismantling hierarchies but about creating adaptive systems that balance leadership with inclusivity. Structured communication frameworks, dynamic hierarchies, and cultural competency training strike this balance, fostering collaboration, resilience, and efficiency. By embedding these practices into their organizational structures, healthcare institutions can empower diverse perspectives, overcome hierarchical barriers, and deliver safer, more effective care (Okatta et al., 2024).

The Precedent of Success in Other Industries

Despite concerns, high-consequence industries like aviation and nuclear power provide compelling examples of how reducing power distance enhances safety and operational effectiveness. These fields, where precision and teamwork are critical, have successfully addressed challenges like those posed by DSS in healthcare. By empowering team members at all levels to contribute, these industries have demonstrated that minimizing hierarchical barriers fosters better decision-making and reduces errors (Alavosius et al., 2017).

One of the most influential frameworks is CRM, developed in aviation to mitigate communication failures caused by authority gradients. Crew resource management promotes open communication, shared accountability, and environments where concerns can be voiced without fear (Gross et al., 2019). Key tools such as standardized checklists, structured communication protocols, and simulation-based training have significantly improved safety by ensuring critical information flows freely across ranks (Guy et al., 2022). These strategies enhance both operational efficiency and ethical accountability.

Similarly, the nuclear power industry highlights the value of reducing power distance. Practices, such as layered decision protocols and redundancy systems, ensure that no single authority dominates critical decisions, creating a culture of shared accountability (Orikpete & Ewim, 2024). These systems demonstrate that flattening hierarchies does not diminish leadership but strengthens team collaboration under pressure; lessons that translate to healthcare.

Building on these insights from other industries, healthcare can benefit similarly from strategies that enhance team collaboration and communication. Crew resource management principles, including structured communication and scenario-based training, can help surgical teams reduce errors and adapt more effectively to high-stress situations (Romano et al., 2022). Additionally, decision-support tools and real-time analytics can identify communication gaps and reinforce collaborative practices (Roosan et al., 2019).

Beyond practical applications, these frameworks align with healthcare's ethical commitments. Aviation's ethos of "every life is worth the effort" parallels healthcare's mission to prioritize safety and inclusivity (Stanford, 2020). By operationalizing this ethos through structured practices, healthcare systems can reduce the root causes of DSS, burnout, and disengagement, particularly among nurses (Albaqawi & Alshammari, 2024; Čartolovni, et al., 2021).

The successes of aviation and nuclear power demonstrate that reducing power distance and DSS is both achievable and transformative. High-reliability industries, such as aviation and nuclear power, have successfully implemented structured communication protocols, hierarchical flattening strategies, and team-based decision-making frameworks to enhance safety and operational efficiency (Alavosius et al., 2017; Orikpete & Ewim, 2024). These industries illustrate that by integrating CRM principles, fostering psychological safety, and adopting robust training and evaluation metrics, healthcare institutions can create safer, more equitable environments (Gross et al., 2019; Buljac-Samardžić et al., 2021).

Recommendations for Reform

Lessons from aviation and nuclear power demonstrate that sustained cultural and operational change requires a comprehensive, multi-faceted approach. These industries have successfully integrated leadership development, technological innovation, policy reform, and cultural initiatives to address systemic barriers to safety and collaboration (Havinga et al., 2017; Romano et al., 2022). Insights from these industries illustrate that healthcare systems must take a similarly holistic approach to mitigating DSS and fostering interdisciplinary collaboration. Central to this comprehensive approach is leadership development, which plays a pivotal role in fostering inclusivity and psychological safety within teams (DeBrun et al., 2019). Training programs should equip leaders with skills, such as active listening, empathy, and conflict resolution, enabling them to create environments where all voices are valued. Equipping leaders with these skills is only part of the solution; they must be applied through structured strategies like round-robin discussions and safe communication channels, to encourage team participation. Task-specific delegation highlights diverse expertise, while mentorship programs and rotational leadership roles further support professional development and shared accountability. These approaches

allow junior staff to develop leadership skills and foster mutual respect across hierarchical levels (Rainey & Monaghan, 2022; Robertson et al., 2024). Empathy-based exercises, where leaders experience the challenges faced by frontline workers, complement these strategies by deepening understanding and strengthening trust within teams (McNulty & Politis, 2023).

In addition to fostering inclusive leadership, equipping healthcare teams to perform under pressure is essential for addressing the challenges of high-stakes environments. Dynamic stress-testing protocols, like those used in aviation, prepare teams for such scenarios by enhancing adaptability and collective decision-making (Colman et al., 2019; Hibberson et al., 2021). For example, perioperative teams can use dynamic stress-testing protocols in simulation, to prepare for high-pressure scenarios. During a training session, the team can rehearse a complex surgery involving a simulated intraoperative crisis, such as sudden cardiac arrest due to an air embolism. Using a high-fidelity mannequin, the simulation evolves dynamically based on the team's actions, requiring rapid decision-making and seamless communication. The anaesthesiologist administers simulated medications, while the surgeon adjusts the procedure to manage the embolism. Meanwhile, the circulating nurse retrieves additional instruments, and the scrub nurse maintains the sterile field. Facilitators monitor the session with an artificial intelligence (AI)-driven system that tracks communication, response times, and task execution. Post-simulation, the team reviews performance metrics and identifies areas for improvement. This stress-testing approach enhances adaptability, communication, and collective decision-making, improving patient outcomes in perioperative emergencies (Komasawa & Berg, 2016).

While stress-testing protocols enhance team dynamics during critical moments, broader systemic improvements are needed to address inefficiencies and workload disparities on an organizational level. Addressing systemic inefficiencies and workload disparities requires policy and structural reforms (Yakusheva, & Boston-Leary, 2024). One such reform is implementing scheduling policies that limit non-emergent surgeries during high-risk hours, a strategy that reduces fatigue-related errors and preserves resources for emergencies (Kawa et al., 2024; Kluger et al., 2013; Rodziewicz et al., 2024). Fair workload distribution is another critical measure, as it promotes team cohesion and mitigates burnout by ensuring responsibilities are shared equitably. In addition, decision-making frameworks that require team consensus ensure that the perspectives of all staff, including nurses and junior team members, are acknowledged, and valued (Lin et al., 2022). To assess the effectiveness of these reforms, healthcare organizations should adopt clear metrics, such as reduced error rates, improved team satisfaction, and lower staff turnover. Public accountability dashboards tracking inclusivity and safety metrics further reinforce these efforts by enhancing transparency and trust across institutions (Fukami, 2024).

Building on these structural reforms, cultural initiatives play a crucial role in fostering inclusivity and addressing implicit biases (Onyeador et al., 2021). Programs that combine cultural competency and bias-awareness training help teams navigate diverse communication styles and overcome barriers tied to rank, gender, or role. Role-playing exercises and narrative workshops, where staff share experiences of hierarchical challenges, can humanize the impact of DSS and inspire collective action (Sabin, 2022). Recognition programs that reward inclusivity-focused practices further embed these values into organizational culture, while linking leadership incentives to metrics, such as team satisfaction and retention, ensures sustained commitment to equity and collaboration (Tian et al., 2020).

Adopting these strategies and integrating them across leadership, policies, and culture, enables healthcare to create transformative perioperative environments that serve as models for equity, safety, and collaboration. These changes not only enhance patient safety and staff well-being, but also align with broader ethical and institutional priorities, creating a more equitable and sustainable healthcare system.

Practicality and Impact

The proposed recommendations to address DSS and reduce power distance in healthcare hold significant potential for transforming perioperative care and beyond. However, the feasibility of these interventions depends on effectively addressing implementation barriers and leveraging insights from other high-stakes industries. By considering policy implications and interdisciplinary relevance, this section highlights the practical pathways for applying these reforms across diverse healthcare settings.

While these recommendations hold great promise, their successful implementation requires addressing significant feasibility challenges, including resource constraints and resistance to change (McGuier et al., 2024). One primary barrier is the financial and logistical burden of training programs, technology integration, and cultural initiatives, particularly in underfunded healthcare systems or low-resource settings (Buljac-Samardžić et al., 2020). Smaller institutions may struggle to allocate the necessary resources for comprehensive reform. To address this, reforms can be introduced incrementally, beginning with low-cost interventions, such as leadership training modules, anonymous feedback systems, and structured communication protocols like SBAR (Wang et al., 2023). These foundational changes can generate initial success and build momentum for more resource-intensive initiatives, such as simulation-based training or decision-support technology implementation.

In addition to resource constraints, resistance to change from staff accustomed to traditional hierarchical structures poses another significant obstacle to reform (French-Bravo & Crow,

2015; George & Massy, 2020). Engaging stakeholders early in the process and framing reforms as opportunities to enhance team performance and patient outcomes can help mitigate this resistance (Fernandez et al., 2022). Additionally, pilot programs in select departments can serve as proof of concept, demonstrating the tangible benefits of reforms and encouraging broader buy-in. Recognizing and rewarding inclusive practices through institutional recognition programs can promote further a culture of collaboration and accountability (Rogers et al., 2021).

Aviation's emphasis on structured communication tools, such as standardized checklists and pre-flight briefings, aligns closely with the needs of surgical teams. These tools also can be tailored for use in outpatient clinics to ensure consistent patient handoffs or in emergency departments to streamline triage and resource allocation. Similarly, the nuclear power industry's layered decision-making protocols and redundancy systems provide a model for reducing errors in high-risk healthcare scenarios, such as critical care or neonatal units.

Beyond operational practices, these industries demonstrate how fostering a culture of psychological safety and shared accountability can reinforce the success of structural reforms. By fostering environments where all team members feel empowered to voice concerns without fear of retribution, healthcare settings can enhance both patient safety and team cohesion. Interdisciplinary collaborations with experts from aviation and nuclear power can refine these adaptations further, ensuring they align with the unique demands of healthcare.

Critical Analysis and Limitations

This paper provides a robust foundation for addressing systemic barriers in perioperative care through the conceptualization of DSS and proposed reforms, yet several limitations merit consideration. Acknowledging these challenges enhances the credibility of the arguments and identifies opportunities for refinement and future research.

The DSS framework focuses primarily on the habitual use of mitigated speech and the influence of hierarchical norms on communication. Although this captures a critical dimension of communication barriers in the OR, it does not fully account for other contributing factors such as time pressures, resource constraints, and interprofessional conflicts that may operate independently of hierarchy. Additionally, the interdisciplinary insights drawn from high-stakes industries, such as aviation, offer valuable parallels but may not align entirely with the complexities and cultural nuances of healthcare environments. For example, the rigid standardization in aviation protocols may be difficult to replicate in the dynamic and diverse nature of medical teams. Expanding the framework to incorporate these contextual factors could enhance its applicability and depth.

Furthermore, demonstrating the effectiveness of these interventions is crucial to overcoming resistance and ensuring their sustained adoption, yet measuring their impact introduces further complexity. Metrics, such as error rates, patient outcomes, and team satisfaction, are valuable indicators, but isolating the specific impact of DSS-related reforms from other variables is inherently complex. Longitudinal studies with robust evaluation frameworks are essential to assess the sustained effects of these changes, but such efforts require considerable time, funding, and institutional commitment.

Cultural factors add another layer of complexity, influencing not only the feasibility of implementation, but also the likelihood of success across diverse healthcare settings. In high power-distance cultures, deeply ingrained hierarchical norms may not be easily shifted without generating discomfort or resistance (Anderson & Brown, 2010; Green et al., 2017). Additionally, empowering junior staff could inadvertently lead to role confusion or overconfidence, if not managed carefully. Tailoring interventions to align with the cultural and institutional contexts of diverse healthcare settings is critical to ensuring their success (Mullin et al., 2021).

This diversity underscores the risk of overgeneralizing the DSS framework and reforms, particularly when applying them beyond perioperative care. Outpatient clinics, emergency departments, and long-term care facilities may face unique communication dynamics that require distinct approaches. Universally applying the DSS framework without accounting for such difference's risks oversimplifying the issue and diluting the effectiveness of the interventions.

Addressing these limitations provides an opportunity for future research to refine the DSS framework, expand its applicability, and develop equitable solutions for diverse healthcare environments. Future studies should explore the integration of DSS with other frameworks, such as cognitive load theory or interprofessional education models, to provide a more comprehensive understanding of communication barriers. Comparative studies across diverse healthcare settings are needed to evaluate the generalizability and adaptability of DSS-related interventions. Additionally, scalable solutions for resource-constrained environments must be developed to ensure equitable access to the benefits of these reforms. Long-term studies combining quantitative metrics with qualitative insights from healthcare professionals can offer a deeper understanding of the sustained impact of these interventions.

By critically examining its own scope and limitations, this paper advocates for an iterative approach to systemic reform. Recognizing these challenges fosters a more nuanced discussion and strengthens the foundation for meaningful and sustainable change in perioperative care.

Conclusion

Tackling DSS is not just an operational necessity, it is a moral imperative to safeguard both patients' lives and professional integrity by addressing safety, equity, and collaboration in the OR. This paper has shown that unchecked hierarchies heighten preventable risks, erode team cohesion, and undermine the ethical foundations of perioperative care. Effective reform begins with acknowledging the profound impact of power distance and committing to evidence-based solutions.

Short-term interventions, such as structured communication tools and equitable workload distribution, must lay the foundation for long-term cultural transformation through leadership training and inclusive policies. Together, these measures address the root causes of moral injury, burnout, and inefficiencies, fostering a healthcare environment where equity, respect, and accountability are central to care delivery.

Failure to act will perpetuate preventable errors and workforce attrition, while implementing these reforms promises safer care and stronger team cohesion. As a microcosm of healthcare, the OR offers a unique platform to lead systemic change through inclusive decision-making and innovative care models. Achieving this transformation requires not only updated policies and targeted training, but also a fundamental cultural shift that values every voice, prioritizes collaboration, and places patient safety at the forefront.

Future research should focus on the quantitative impact of DSS interventions, comparative effectiveness of reforms across diverse contexts, and interdisciplinary innovations tailored to perioperative care. These efforts will ensure that solutions are both scalable and effective, bridging the gap between theory and practice.

An imperative now emerges for healthcare leaders, policymakers, and educators to act decisively. The transformation of perioperative care into a model of safety, equity, and collaboration is not just achievable, it is necessary. By prioritizing inclusive practices and dismantling systemic barriers, healthcare systems can pave the way for a more resilient, equitable, and effective future. The stakes demand urgency, and the future of healthcare depends on embracing this challenge.

Author Notes

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