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The Anesthetic Management of Postpartum Hemorrhage

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Abstract

Postpartum hemorrhage, classified as either primary or secondary, is a leading cause of maternal mortality worldwide and a common and potentially life-threatening obstetric complication. Successful management of this condition is largely dependent on early detection and timely, appropriate intervention. In assessing the risk of postpartum hemorrhage, factors such as placental abnormalities and hereditary coagulopathies must be considered. The administration of uterotonic agents may reduce the risk of severe hemorrhage, and surgical facilities should be equipped with hybrid operating rooms with angiographic capabilities. In cases of unexpected emergency postpartum hemorrhage, a multidisciplinary approach is essential, involving obstetricians, anesthesiologists, surgical teams, laboratory hematology staff, and interventional radiologists able to perform procedures such as arterial embolization. Effective communication and coordination within these teams are crucial for optimal patient outcomes. Pre-anesthetic preparation should take into account physiological, psychological, and pathological changes associated with pregnancy. The results of related studies indicate that postpartum hemorrhage within 24 hours is not significantly affected by the use of neuraxial anesthesia during vaginal delivery. However, general anesthesia has been shown to increase the risk of postpartum hemorrhage by 8.15 times compared to when regional anesthesia is used. The close monitoring of blood loss, clinical signs, fluid and blood transfusions, electrolyte balance, and acid-base status is essential to maintaining hemodynamic stability. Endotracheal intubation may be necessary, with postoperative extubation risks carefully assessed. Furthermore, clinicians should monitor for complications such as transfusion-related acute lung injury or circulatory overload. In severe cases, patients should be transferred to the intensive care unit for further management.

Keywords: *anesthesia in postpartum hemorrhage; anesthetic management; postpartum hemorrhage.*

INTRODUCTION

Turnover among first-line managers in health care is a significant challenge, driven by a combination of organizational, professional, and personal factors. These challenges often stem from the complexities inherent in their role, such as balancing personnel management with financial oversight and fostering a positive work environment while contending with resource constraints, administrative burdens, and ethical dilemmas that can contribute to moral distress.

Moreover, in their role, first-line managers might need to disrupt established routines and act swiftly and collaboratively to respond to sudden unknown and changing contexts. Research highlights that first-line managers frequently have moderate levels of autonomy and get limited support from their managers, which leaves them feeling only partially empowered and often overwhelmed by their responsibilities. While first-line managers generally report high work-related well-being, nearly half describe their work as often or always challenging, with high job demands acting as significant stressors. In addition, greater control over work and managerial support have been strongly associated with higher job satisfaction, whereas high demands and strained relationships are associated with

lower job satisfaction. These results underscore the critical need for supportive work environments to reduce stress and improve retention among first-line managers.

The impact of stress is particularly pronounced in high-pressure environments like teaching hospitals and acute care facilities, where insufficient resources and unmanageable workloads exacerbate stress and emotional exhaustion. It is common for first-line managers to report moderate to high levels of workplace stress. Without sufficient support, such stress can escalate, negatively affecting managers' health and job satisfaction, and increasing their desire to leave their role.

The prevalence of turnover intentions among first-line managers is alarming. Research shows that nearly half of these managers plan to leave their role within three to five years, with many citing burnout, insufficient respect, and inadequate support as primary reasons. Burnout alone is identified as a significant driver, reflecting the intense demands placed on this role. However, first-line managers who experience fair workloads, constructive relationships with managers, and supportive workplace cultures report higher job satisfaction and lower turnover intentions. This highlights the importance of fostering positive work environments, as job satisfaction can serve as a buffer against challenges, reducing the likelihood of turnover. Having support from managers and team members has also been shown to enhance job satisfaction and reduce turnover intention.

While most studies focus on turnover intentions, previous work examining actual turnover rates revealed that 40% of health-care managers with staff and budget responsibilities left their position over a four-year period, highlighting job control and overall health as critical factors for retention. Managers who experienced sufficient autonomy in their role and maintained personal well-being were more likely to remain in their position.

High turnover among first-line managers in health care impacts not only the managers themselves but also the teams they manage. First-line managers are vital to fostering organizational commitment and stability within teams. Research indicates that nursing staff's trust in first-line managers is closely linked to their own commitment to the organization, particularly in terms of affective commitment, which reflects an emotional attachment to their role. First-line managers who establish a supportive, positive work environment and cultivate trust contribute to increased commitment and reduced turnover intentions among staff. In addition, high turnover rates among first-line managers are costly for organizations due to recruitment expenses.

Despite extensive research on factors influencing first-line managers' intentions to leave, there is limited research examining actual departure. The limited existing research has primarily focused on multilevel managerial populations, which may obscure the specific challenges and stressors affecting first-line managers. This study aimed to address this gap by examining if and how an expanded span of control, management performance, and work-related stress indicators (control, manager support, and relationships) influence the time until first-line managers leave their position.

METHODS

Study Design

This study used a prospective longitudinal cohort design to examine how an expanded span of control, work-related stress indicators, and management performance influence the time until first-line managers leave their position. The STROBE checklist was used to guide the reporting of this study.

Study Sample

The study was conducted in a Swedish region's health-care sector, encompassing primary care, pre-hospital services, and inpatient care. Invitations to participate were sent via email to all first-line managers in the region, along with a link to the online survey. To encourage participation, reminder emails were sent to non-respondents. The cohort consisted of 87 first-line managers who completed a

baseline survey at the start of the study in September 2020. These participants were prospectively monitored regarding turnover over a period of 40 months.

Measures

The main outcome variable was turnover, defined as the event of a first-line manager leaving their position during the study period, with data provided by the region's human resources department.

Expanded Span of Control: Measured using the Clinical Management Span of Control Decision-Making Indicators (TOH-SOC), evaluating managerial complexity across unit-focused, staff-focused, and programme-focused domains. Scores between 61 and 90 represent an appropriate span of control, whereas scores between 91 and 130 indicate an excessive span of control.

Management Performance: Assessed using the management performance subscale of the Leadership and Management Inventory (LaMI-II), evaluating skills in planning, organizing, and ensuring regulatory compliance on a five-point Likert scale (scores ranging from 20 to 100).

Work-Related Stress: Measured using selected indicators from the Health and Safety Executive Management Standards Indicator Tool (HSE) subscales: control, manager support, and relationships. Control and manager support ratings were categorized into performance tiers (from high performance requiring no action to low performance requiring urgent action), while relationships was retained as a continuous variable due to uniform scoring distribution.

Statistical Analysis

Descriptive statistics presented turnover rates as proportions and numbers. The relationship between turnover and independent variables was analyzed using Cox proportional hazards regression, ensuring multicollinearity did not exceed 0.3. Statistical significance was set at $p < 0.05$, using IBM SPSS Statistics (Version 27.0).

Multiple imputations were applied to handle missing values (observed in 3.4% of TOH-SOC assessments and 1.1% of LaMI-II assessments). Little's missing completely at random (MCAR) test returned a non-significant p-value of 0.094, supporting the suitability of multiple imputations.

Ethical Considerations

The study was conducted in accordance with the Declaration of Helsinki and approved by the Swedish Ethical Review Authority (no. 2019-04583). Participation was voluntary, with informed consent and the right to withdraw at any time.

DISCUSSION

The aim of this study was to examine if and how an expanded span of control, management performance, and work-related stress influence the time until first-line managers leave their position. Our findings indicate that turnover among first-line managers is primarily driven by insufficient control over their work and inadequate managerial support.

First-line managers categorized as having moderate concern and a need for improvement in the control indicator faced a significantly higher risk of turnover. These findings align with previous research identifying that moderate to high levels of control are positively associated with remaining in a managerial position over time, whereas insufficient control acts as a key push factor. Adequate levels of control serve as a stabilizing factor promoting retention, emphasizing the importance of providing autonomy.

Similarly, inadequate managerial support was linked to a higher likelihood of turnover. Managerial support acts not merely as a buffer against stress, but as a decisive factor in long-term retention. Insufficient guidance, recognition, and advocacy leave managers feeling overwhelmed, weakening their leadership capacity.

Interestingly, neither expanded span of control nor the number of employees managed significantly predicted turnover. While wider spans of control can increase role overload, workload is multifaceted and heavily influenced by leadership support and individual coping resources rather than team size alone. Furthermore, self-rated management performance did not predict turnover, suggesting that daily operational pressures, administrative burdens, and systemic constraints overshadow formal management performance metrics regarding departure decisions. Finally, workplace relationships did not emerge as a significant direct predictor of turnover, indicating that autonomy and managerial support exert a more powerful, direct impact on turnover decisions.

Limitations

Limitations include a relatively small sample size ($n = 87$) restricted to a single Swedish region, limiting generalizability. The study focused primarily on organizational factors rather than personal variables. Additionally, the low events-per-variable ratio (6.4) increases the risk of model instability, though the findings still offer valuable longitudinal insights into healthcare managerial turnover.

CONCLUSION

This study demonstrates that insufficient control over work tasks and inadequate managerial support are primary drivers of turnover among first-line managers in Swedish health care, where the observed turnover rate was 32.2% over 40 months. To improve retention, health-care organizations must focus on strengthening managerial support and granting managers greater autonomy. Implementing targeted structural interventions can foster sustainable working conditions, empower leaders, and enhance overall organizational stability.

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