Review Article

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Surgical Research

Disposable Bouffant Caps Vs Cloth Surgical Caps

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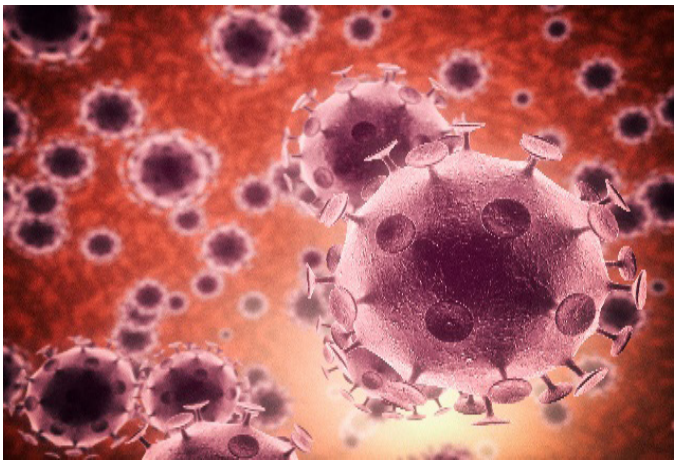
ABSTRACT

Surgical site infections can be caused by a variety of contributing factors within the operating room. Microorganisms can be transmitted to the patient by health care personnel, the environment, or other items in the perioperative setting. This rapid review reviews the evidence used to support the recommendation that perioperative health care professionals should wear cloth surgical caps instead of disposable bouffant caps in the operating rooms. Although there is no conclusive evidence that wearing disposable over cloth caps changes the incidence of surgical site infections, there is evidence that shows using cloth caps, skullcaps, improves team communication, decreases carbon footprint, and decreases health care cost.



Keywords

Bouffant caps, Skullcaps, Operating room, Surgical infections.

Introduction

In 2014, the Association of Perioperative Nurses (AORN) advocated for the adoption of disposable bouffant caps instead of cloth caps within the operating room (OR) setting. This led to widespread policy alterations within health care organizations to enforce this new mandate, despite the absence of evidence-based research and without considering the potential adverse effects on patient safety, the environment, and increased expenses. In 2018, Journal of the American College of Surgeons published an article titled: Bouffant VS Skull Cap and Impact on Surgical Site Infections: Does Operating Room Head Wear Really Matter. This study of 1, 543 patients; 39% of physicians wearing bouffant caps; 61% of physicians wearing skull caps found no significant differences in surgical site infections (SSI) and recommended that health care organizations should allow either bouffant or cloth skull cap; surgical team preference. There are many articles written by health care professionals on this topic, which impacted the AORN recommendation change. In 2019, the AORN removed the recommendation for disposable bouffant caps, however many


health care surgical settings have left the former policy in place.

Several studies have been performed since the AORN's original recommendation in 2014. The research compared the difference in surgical site infections (SSI) incidence, cost of disposable caps vs cloth, and the effects on OR communication. The evidence found during the studies is discussed in this rapid review. This evidence can be applied to guide hospitals on what future policy changes should be applied in the surgical setting.

Problem Statement

Surgical Site Infections (SSI) are a critical concern in healthcare, leading to increased patient morbidity, mortality, and significant financial burdens on the healthcare system. One area of ongoing debate and regulatory scrutiny is the choice of head coverings for operating room (OR) personnel, specifically the use of cloth surgical caps versus disposable bouffant caps. In 2014, the Association of Perioperative Nurses recommended the use of disposable bouffant surgical caps over the use of cloth surgical caps as a means to reduce surgical site infection risk in the operating room [1]. Based on the position statement of the AORN, many health care organizations throughout the United States (US) changed their surgical attire policies banning the use of cloth surgical caps in favor of the disposable bouffant cap. However, current scientific evidence does not show a correlation between the type of surgical cap worn and surgical site infection rates. In 2017, a study revealed that amongst many types of surgical caps, disposable bouffant surgical caps were the least effective at preventing the transmission of infections [2].

As of 2019, AORN revised their recommendations for headgear in the OR to state that the scalp and hair should be covered, however they offer no recommendation as to which type of surgical cap should be utilized [3]. Many hospitals' policies are still aligned with the 2014 recommendation, resulting in heightened expenses related to the provision of disposable caps. To be compliant with current Joint Commission on Accreditation of Healthcare Organizations (JACHO) guidelines, hospitals are required to be compliant with their own written policy on the use of surgical attire in the OR [4]. Through rigorous research and analysis, this project intends to provide evidence-based insights that can guide healthcare professionals, interdisciplinary regulatory bodies, and policymakers in making informed decisions surrounding the choice of head coverings in the OR and their impact on SSI. Thereby aiming to enhance patient safety, improve infection control practices, and potentially reduce healthcare costs.

Nursing Theorist

Florence Nightingale played a pivotal role in revolutionizing healthcare practices, particularly in the field of nursing education and hospital administration [5]. Her theory emphasizes the importance of maintaining a clean and hygienic environment in healthcare settings. Nightingale's principles underscore the significance of infection control measures, proper sanitation, and hygiene practices to reduce the risk of healthcare-associated infections, including SSIs. Integrating Nightingale's theory into contemporary healthcare strategies can guide the implementation of evidence-based guidelines aimed at preventing SSIs. This approach aligns with Nightingale's emphasis on the role of the environment in promoting patient well-being and highlights the importance of a comprehensive approach that includes factors including surgical attire [5].

Literature Review

Literature Search

A broad review of nursing and medical literature was reviewed to examine the current data regarding surgical cap type and its impact on patient outcomes. The following keywords were utilized for identifying pertinent articles: perioperative attire, cloth surgical caps, disposable bouffant surgical caps, surgical site infection rates, prevention of complications in surgery, effective perioperative communication, surgical complication prevention, reducing carbon footprint of surgical disposables, healthcare costs, and best patient safety practices. The databases used for the search included MedlinePlus, CINAHL Complete, Google Scholar, Cochrane Library, PubMed, and Simmons University Library. The search consisted of sources that were published between 2017 to 2023.

Understanding the Impact of SSIs

The research studies collectively emphasize the severity of SSIs and their significant impact on both patient health and healthcare expenses. They extensively analyze various factors associated with SSIs, such as surgical procedures, glucose management, and patient temperature regulation. Additionally, they tackled the ongoing discussion about different choices of headwear in the operating room, presenting conflicting suggestions from various peer reviewed journals.

Debate on Surgical Cap Selections and SSIs

Kothari and colleagues conducted a thorough assessment of the influence of various surgical cap selections on SSIs, highlighting the similar effects of bouffant caps and skull caps on SSI rates. They critically evaluate the impact of cap types on SSIs, emphasizing the need for further investigation into microbial counts and diverse cap materials. Their study advocates for the integration of surgeon preferences and the establishment of unified guidelines by key stakeholders to address existing research limitations [6]. In contrast, Elmously et al. and Farach et al. challenge the effectiveness of stringent operating room attire policies in reducing SSIs [7]. These studies underscore the requirement for more comprehensive approaches to prevent SSIs beyond attire and emphasize the importance of evidence-based practices and thorough research in healthcare policy development [7,8]. Similarly, the research conducted by Beesoon and colleagues addresses the ongoing debate on the type of headwear worn in operating rooms and its potential connection to SSIs [9]. This research highlights the inconclusive evidence regarding the superiority of a specific cap type in reducing SSIs, emphasizing the importance of evidence-based decision-making and continued research collaboration among healthcare professionals [9]. Rios-Diaz et al. compared data collected from a variety of surgical procedures and included a multivariate analysis to establish whether the removal of skullcaps from the OR was associated with decreased SSI (2018). The results showed no difference in SSI occurrence and suggest further research should be acquired on appropriate headwear guidelines in the OR [10]. Svetanoff and colleagues also emphasized the importance of evidence-based guidelines, acknowledging the constraints in current understanding and the necessity for more robust research supported by rigorous trials [11].

Enhancing OR Team dynamics and Communication for Safety

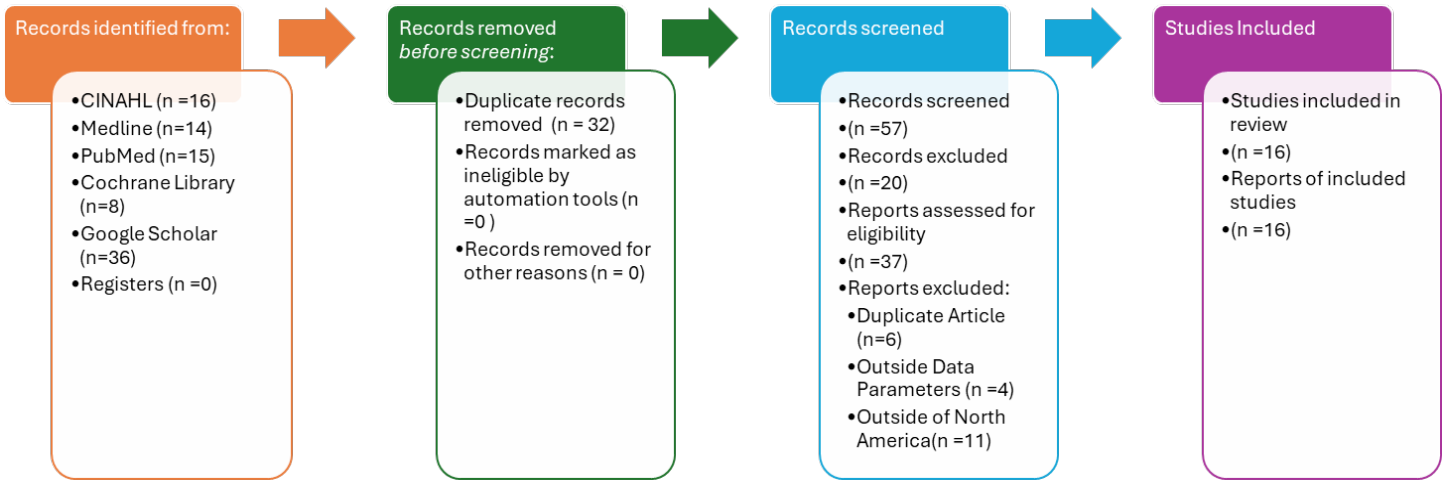
During the research, process to identify the differences between OR scrub cap attire and the incidence of SSIs other valuable data was discovered. Douglas et al. found that cloth caps with individual team member names increased communication and role identification by 15%. Brodzinsky et al. found similar data and discovered that labeling cloth scrub caps led to reduced communication errors and increased team morale among the OR members, while patients reported an overall improved experience [12]. Aragwal et al., also found that reusable cloth caps could be of benefit to patient safety if the cloth caps are embroidered with names and roles. This action was shown to mitigate miscommunication in the operating room by clearly identifying team members and their roles. By identifying team members and roles the thought is that, no team member is assigned a task, which is outside of their scope or ability. This small change was shown to improve communication as well as reduce delays in patient care. In the setting of traumas in the OR, reducing delays in patient care can sometimes be the difference between life and death. Dougherty et al. discovered that the implementation of cloth caps with names and roles that are clearly visible showed a 34% increase in knowledge of the names and roles of team members in the OR which improved communication and engagement of those involved [13]. In comparison, a study implemented by Grogan et al., showed an 82% improvement in communication of OR team members when identifier caps were utilized [14]. To analyze how this impacts patient care and safety we must first identify what attributes make up an effective surgical team. According to Paige et al., an effective team is marked by four discernible attributes consisting of seamless coordination, cohesive collaboration, effective communication, and a constructive demeanor [15].

Cost Analysis of OR Attire

Cost of disposable OR attire was another piece of data collected and analyzed. Wills et al. performed a retrospective study comparing 22- months of data to analyze incidence of SSI depending on OR attire where they discovered that there was no significant difference in the risk of SSI whether the team members were wearing cloth caps or disposable [16]. The study results also suggested that the disposable attire was not cost effective [16]. Elmously et al. compared SSI incidences and found the evidence to show that wearing disposable OR attire made no difference in infection rate instead it caused an increase in the healthcare cost by an estimated $540 million per year for the United States [17].

Environmental Impact and Safety Implications

Agarwal et al. found that use of reusable cloth caps was not only more cost effective, but also reduced the carbon footprint of surgical waste [18]. Carbon footprint is defined as the amount of greenhouse gasses, or carbon dioxide, created by our own actions. In the surgical environment, the two biggest contributors to the carbon footprint are use of electricity and the use of disposables. The AORN's 2014 recommendation, which was not evidence-based, has effectively created a situation, which is potentially more harmful to the environment [3].



Prisma Flow Chart

Discussion/Recommendations

New recommendations and practice guidelines surface frequently in healthcare and usually these recommendations and guidelines are backed by evidence. Evidence-based practice promotes healthy patient outcomes, keeps healthcare costs down, and supports growth in medicine. When AORN announced their original recommendations in 2014, which suggested perioperative personnel should use disposable bouffant caps instead of cloth caps in the OR there was no evidence to back the recommendation. The literature review found no evidence that suggested disposable bouffant caps prevented SSIs when compared to cloth caps in the OR. The literature did show that the use of cloth caps had several positive effects including increased communication, improved patient experience, decreased cost and decreased carbon footprint.

The AORN has now discarded their original 2014 recommendations, yet health care organizations are still following these non-evidence-based guidelines [3]. Hospitals and other health care settings should amend their policies as evidence has shown the lack of benefit of using only disposable bouffant caps. Further research should be completed on the benefits of cloth caps with team member names and roles in relation to improved communication and patient satisfaction.

Conclusion

In conclusion, this review highlights the significance of transitioning from disposable bouffant caps to cloth surgical caps in the OR. Despite the lack of conclusive evidence linking disposable caps to decreased SSIs, the utilization of cloth caps offers numerous advantages, including improved team communication, reduced healthcare costs, and a decreased carbon footprint. Moreover, studies underscore the benefits of integrating personalized identifiers on cloth caps, which promote effective communication and role clarification within the OR, ultimately enhancing patient safety and overall surgical team performance. Notably, it also stresses the importance of evidence-based practices, emphasizing the necessity of informed decision making to guide healthcare policies as well as enhance patient outcomes. Additionally, it emphasizes the need for healthcare institutions to prioritize sustainable practices, given the potential environmental and financial impact of disposable caps. These findings call for a reassessment of surgical attire guidelines in line with current best practices and evidence-based research.

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7. Elmously A, Gray KD, Michelassi F, et al. Operating room attire policy: Favoring action over evidence does not yield results. J Am Coll Surg. 2018; 227: S157.
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9. Beesoon S, Sydora BC, Klassen T, et al. Does the Type of Surgical Headwear Worn in the OR Matter? A Review of Evidence and Opinions. AORN journal. 2023; 118: 157-168.
10. Rios-Diaz AJ, Chevrollier G, Witmer H, et al. The art and science of surgery: Do the data support the banning of surgical skull caps? Surgery. 2018; 164: 921-925.
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Appendices

Matrix

APA citation		Type of Research Quant/ Qual/Mixed methods	Sample Describe the subjects/participants	Methodology	Results Findings and Implications for Nursing/Healthcare
Article 1 Agarwal, D., Bharani, T., Armand, W., Slutzman, J. E., & Mullen, J. T. (2023c). Reusable scrub caps are cost-effective and help reduce the climate footprint of surgery. *Langenbeck's Archives of Surgery*, *408*(1). https://doi.org/10.1007/s00423-023-03107-9	Check all that apply: Primary Research: __X__ Peer reviewed: _X___ North American: _X__ Nursing: _____	Quantitative Level of evidence: 2	Ninety-two surgical trainees at Massachusetts General Hospital, Boston.	Participants were provided reusable personalized scrub caps. Over 6 months, use of the reusable cap was compared with use of disposable single-use caps. The cost of raw materials, fabric and cap manufacturing, transportation, and end-of-life/waste treatment was utilized to perform an economic and environmental burden analysis.	The carbon footprint of single-use scrub caps was significantly higher than reusable caps during the 6 month period. Reusable scrub cap usage strongly correlated with substantial reductions in energy consumption and freshwater toxicity.
Article 2 Agarwal, D., Bharani, T., & Mullen, J. T. (2023). Personalized scrub caps for identification of surgical trainees. *JAMA Network Open*, *6*(9), e2332403. https://doi.org/10.1001/jamanetworkopen.2023.32403	Check all that apply: Primary Research: __X__ Peer reviewed: _X_ North American: _X_ Nursing: _____	Qualitative Level of evidence: 3	The study included 64 surgical trainees. 34 of the trainees were female and the other 30 were male	After 6 months of embroidered scrub cap use, surveys utilizing Likert-type scales were distributed to the participants who were asked to report how often their name and/or role was misidentified, and whether the misidentification resulted in delay in patient care, near-miss clinical events, or patient harm.	This study found that scrub caps embroidered with names were associated with a reduction of role and name confusion, decreased interpersonal conflicts, and an overall decrease in frequency of delays in patient care.
Article 3 Beesoon, S., Sydora, B. C., Klassen, T., Baron, T., Robert, J., Khadaroo, R., White, J., Brindle, M., Barker, L., & Spruce, L. (2023). Does the Type of Surgical Headwear Worn in the OR Matter? A Review of Evidence and Opinions. *AORN journal*, *118*(3), 157–168. https://doi.org/10.1002/aorn.13983	Check all that apply: Primary Research: ____ Peer reviewed: _X_ North American: _X__ Nursing: _____	Systematic literature review Level of evidence: 1	27 articles from the three databases: 4 from Medline, 6 from CINAHL, and 17 from PubMedwere used. Finally, a total of 16 unique articles remained for further assessment and inclusion in the review.	The employment in this study involved a systematic literature review and a targeted search for relevant articles published within the past 10 years from 2010 to 2020. The study utilized snowball sampling to identify additional articles cited as evidence for potential SSIs resulting from inadequate or missing head coverings.	The findings of this study initially supported the complete coverage of all hair, but more recent studies questioned this approach. This review emphasized the need for more robust and collaborative research to establish evidence-based guidelines.
Article 4 Brodzinsky, L., Crowe, S., Lee, H., Goldhaber-Fiebert, S. N., Sie, L., Padua, K., & Daniels, K. (2021). What's in a name? enhancing communication in the operating room with the use of names and roles on surgical caps. *The Joint Commission Journal on Quality and Patient Safety*, *47*(4), 258–264. ttps://doi.org/10.1016/j.jcjq.2020.11.012	Check all that apply: Primary Research: _X_ Peer reviewed: __X__ North American: __X_ Nursing: _____	Qualitative Level of evidence: 3	Total of 129 providers participated, 117 of the providers responded to the survey	Two obstetricians observed surgeries for missed communications and name uses. Providers were given short surveys after each surgery. The survey asked about ease of communication and their ability to distinguish operating room roles and names.	The pilot study showed that wearing caps in the operating room with labels increased the use of names and decreased the confusions in communications.
Article 5 Dougherty, J., Slowey, C., Hermon, A., & Wolpaw, J. (2020). Simple budget-neutral tool to improve intraoperative communication. Postgraduate Medical Journal, 96(1141), 703–705. https://doi.org/10.1136/postgradmedj-2020-137492	Check all that apply: Primary Research: __X__ Peer reviewed: __X__ North American: __X_ Nursing: _____	Qualitative Level of evidence: 3	All OR staff on duty during a 2-week period in 2019 were included in the pre and post survey. Total of 84 participants with 57% response rate. (48 pre and 48 post surveys)	The intervention consisted of wearing OR caps displaying the first name and role. Data were collected at 1 week pre intervention and 1 post intervention. To evaluate if communication and engagement in OR was improved	The study demonstrated that a simple, cost-effective intervention can result in improvement in intraoperative communication and engagement between teams. Knowledge of name and role improved by 34%.

Article 6 Douglas, N., Demeduik, S., Conlan, K., Salmon, P., Chee, B., Sullivan, T., Heelan, D., Ozcan, J., Symons, G., & Marane, C. (2021). Surgical caps displaying team members' names and roles improve effective communication in the operating room: A pilot study. *Patient Safety in Surgery*, *15*(1). https://doi.org/10.1186/s13037-021-00301-w	Check all that apply: Primary Research: __X__ Peer reviewed: ____ North American: __ Nursing: _____	Qualitative Level of evidence: 3	236 operating room staff members consisting of medical practitioners, nurses, midwives and technicians. 107 of the participants completed the pre and post survey.	Pre and post intervention surveys to examine whether having names and roles displayed on cloth scrub caps resulted in changes in perceived teamwork score, measured using a five position Likert scale	Study showed wearing cloth caps displaying name and role appeared to improve perceived teamwork and improve communication between staff members working in the operating room.
Article 7 Elmously, A., Gray, K. D., Michelassi, F., Afaneh, C., Kluger, M. D., Salemi, A., Watkins, A. C., & Pomp, A. (2019). Operating room attire policy and healthcare cost: Favoring evidence over action for prevention of surgical site infections. Journal of the American College of Surgeons, 228(1), 98–106. https://doi.org/10.1016/j.jamcollsurg.2018.06.010	Check all that apply: Primary Research: ____ Peer reviewed: ____ North American: _X_ Nursing: _____	Retrospective Study Level of evidence: 2	The study had 25,170 patients total with a total of 30,493 procedures were part of the study.	The study used data from the National Health Safety Network data. Hospital data included general surgery, cardiac, neurosurgery, orthopedic, and gynecology procedures from January 2014 to November 2017.The study compares procedures done before the implementation of the AORN recommendations against the procedures done after the implementation of the AORN recommendations.	The study found that the implementation of the AORN guidelines on the recommendations for operating room attire, had not decreased the incidence of surgical site infections but had increased overall healthcare costs by millions.
Article 8 Elmously, A., Gray, K. D., Michelassi, F., Afaneh, C., Salemi, A., Watkins, A. C., & Pomp, A. (2018). Operating room attire policy: Favoring action over evidence does not yield results. *Journal of the American College of Surgeons*, *227*(4), S157. https://doi.org/10.1016/j.jamcollsurg.2018.07.333	Check all that apply: Primary Research: ____ Peer reviewed: ____ North American: _X_ Nursing: _____	Retrospective Cohort Study Level of evidence: 2	Data collected on patients who underwent general surgery, cardiac surgery, neurosurgery, orthopedic procedures, and gynecological procedures from 2014 to 2017 and the total number of procedures analyzed was 30,493.	This study involves a retrospective analysis of the effects of implementing the Association of Operation Room Nurses (AORN) guidelines for operating room attire in the context of reducing Surgical Site Infections (SSIs).	Implementation of bouffant caps and sleeve covered garments has not decreased SSIs or altered the SSI microbiome.
Article 9 Farach, S. M., Kelly, K. N., Farkas, R. L., Ruan, D. T., Matroniano, A., Linehan, D. C., & Moalem, J. (2018). Have Recent Modifications of Operating Room Attire Policies Decreased Surgical Site Infections? An American College of Surgeons NSQIP Review of 6,517 Patients. *Journal of the American College of Surgeons*, *226*(5), 804–813. https://doi.org/10.1016/j.jamcollsurg.2018.01.005	Check all that apply: Primary Research: __X__ Peer reviewed: __X__ North American: __X_ Nursing: _____	Retrospective comparative study Level of evidence: 2	3,077 patients were included in the pre-implementation analysis, while 3,440 patients were included in the post-implementation analysis.	The research used a comparison approach, analyzing different patient, clinical, and operational elements related to SSIs. They also evaluated the effects of the attire policies using statistical methods, considering factors like wound severity, hospital stay, and complications.	The study found that strict operating room attire regulations, particularly regarding hair coverage with bouffant hats, did not result in reduced surgical site infection (SSI) rates.
Article 10 Gibbons, K. J., & Levy, E. I. (2018). In reply: Mandatory change from surgical skull caps to bouffant caps among operating room personnel does not reduce surgical site infections in class I surgical cases: A single-center experience with more than 15 000 patients. *Neurosurgery*, *81*(6), E73–E74. https://doi.org/10.1093/neuros/nyx435	Check all that apply: Primary Research: _X_ Peer reviewed: _X_ North American: _X__ Nursing: _____	Retrospective Quantitative Level of evidence: 2	Study compared infection rates for 13 mo before cloth caps banned (7513 patients) and 13 mo after cloth caps were banned (8446 patients) Total of 15,959 patients	SSI data were acquired from hospital infection control monthly summary reports from January 2014 to March 2016. Data was categorized into disposable and non disposable caps. Monthly cumulative infection rates before the change and after the change were analyzed	In a large single-center series of patients undergoing class I surgical procedures (>15,000), elimination of the traditional surgeon's cap did not reduce infection rates. This study shows that mandatory guidelines should be based on evidence and effectiveness.

Article 11 Grogan, M., DNAP, CRNA, Crowell, N. A., PhD, Dalley, C. B., PhD, CRNA, & O'Guin, C., DNP, CRNA. (2022). Identifier bouffants: An exploration of the impact on verbal communication among interdisciplinary operating room personnel. *AANA Journal*, *90*(1), 27–33	Check all that apply: Primary Research: _X__ Peer reviewed: _X__ North American: _X__ Nursing: _____	A quasi-experimental design Level of evidence: 3	An interdisciplinary operating room team (IORT) from two suburban acute-care hospitals consisting of five core members including: one Surgical Attending, one licensed anesthesia provider (MD/DO or CRNA), one Registered Nurse, one Surgical Assistant, and one Scrub Technician. Subject pool contained 80 members	The anesthesia provider assigned to OR wore an identifier bouffant throughout the workday. The remaining members of the in-the interdisciplinary operating room team (IORT) did not. After the experimental period the 25 question tool was completed by IORT members and evaluated by five expert reviewers to assess team members' views on improvement of communication with the use of name and role on cap.	Findings support further study on the use of identifier bouffants in the operating room, as 82% (59/72) of participants found them to be beneficial in facilitating communi-cation during the experimental periods. 88% of participants believed that use Identifier bouffants could increase patient safety.
Article 12 Kothari, S. N., Anderson, M. J., Borgert, A. J., Kallies, K. J., & Kowalski, T. J. (2018). Bouffant vs skull cap and impact on surgical site infection: Does operating room headwear really matter? *Journal of the American College of Surgeons*, *227*(2), 198–202. https://doi.org/10.1016/j.jamcollsurg.2018.04.029	Check all that apply: Primary Research: ____ Peer reviewed: _X__ North American: _X_ Nursing: ___	Meta Analysis Level of evidence: 1	1,543 patients were included in the trial. Attending surgeons wore bouffant caps in 39% and skull caps in 61% of cases.	This study analyzed data from a previous prospective randomized trial focusing on the impact of hair clipping on surgical site infections (SSIs). They grouped patients based on the attending surgeons' preference of either bouffant or skull caps.	The overall SSI rates were 8% for bouffant caps and 5% for skull caps, with no significant differences in rates of superficial, deep, or organ space infections when adjusted for the type of operation.The research also emphasized the lack of clear evidence supporting one type of surgical headwear over the other in terms of reducing SSIs. The study suggests to establish a unified guideline given the lack of significant evidence supporting one form of head cover over another.
Article 13 Paige, J., Garbee, D., Bonanno, L., & Kerdolff, K. (2021). Qualitative analysis of effective teamwork in the operating room (or). *Journal of Surgical Education*, *78*(3), 967–979. https://doi.org/10.1016/j.jsurg.2020.09.019	Check all that apply: Primary Research: __X__ Peer reviewed: __X__ North American: __X_ Nursing: _____	Qualitative Level of evidence: 3	15 participants consisting of OR staff members: 2 surgeons, 1 anesthesiologist, 8 nurse anesthetists,2 circulating nurses and 2 surgical technologists	Utilization of a semi-structured focus group to interview all 15 participants over an 11 month period. Responses digitally recorded and transcribed. Qualitative analysis by 2 reviewers with use of inter coder agreement to identify 4 themes related to effective teamwork in OR	4 themes agreeably contribute to effective teamwork in the OR: Smooth flow, united effort, communication, and positive attitude. Improving modifiable factors such as communication practices, safety in the OR can also improve.
Article 14 Rios-Diaz, A. J., Chevrollier, G., Witmer, H., Schleider, C., Cowan, S., Pucci, M. J., & Palazzo, F. (2018). The art and science of surgery: Do the data support the banning of surgical skull caps? *Surgery*, *164*(5), 921–925. https://doi.org/10.1016/j.surg.2018.05.015	Check all that apply: Primary Research: _X___ Peer reviewed: ____ North American: _X__ Nursing: _____	Quantitative Level of evidence: 2	The study consisted of 1,901 patients who underwent a total of 1,950 procedures during the study period 767 of the procedures were before and 1,183 of the procedures were after	The study compared surgical procedures classified as clean or clean-contaminated during a 12-month period before and after implementation of the surgical headwear policy. Descriptive statistics focused on proportions and adjusted logistic regression models were used to investigate the association of alternative headwear use with any type of surgical site infection. Models were adjusted for potential confounders that included demographics and clinical characteristics.	The strict implementation of bouffant or helmet headwear, with removal of skull caps from the operating room, was not associated with decreased surgical site infections for clean and clean-contaminated cases.

Article 15 Svetanoff, W., Dekonenko, C., Briggs, K. B., Sujka, J. A., Osuchukwu, O., Dorman, R. M., Oyetunji, T. A., & St Peter, S. D. (2021). Debunking the myth: What you really need to know about clothing, electronic devices, and surgical site infection. *Journal of the American College of Surgeons*, *232*(3), 320–331e7. https://doi.org/10.1016/j.jamcollsurg.2020.11.032	Check all that apply: Primary Research: ____ Peer reviewed: _X_ North American: _X_ Nursing: _____	Systematic Review Level of evidence: 1	151 studies from PubMed, Ovid Embase, EBSCO CINAHL, and Cochrane Central databases, along with the gray literature between 2000 and 2019.	The study conducted a literature review, used specific search terms, and selected articles based on defined criteria. The selected articles were thoroughly read to determine their suitability for inclusion based on the GRADE (Grading of Recommendations, Assessment, Development, and Evaluations) algorithm. This rigorous process aimed to ensure the relevance and reliability of the selected research for the study.	The study shows no direct correlations between these factors and the incidence of surgical site infections. It highlights the need for further research and evidence to establish more conclusive relationships between these factors and the incidence of surgical site infections.
Article 16 Wills, B. W., Smith, W. R., Arguello, A. M., McGwin, G., Ghanem, E. S., & Ponce, B. A. (2020). Association of surgical jacket and bouffant use with surgical site infection risk. *JAMA Surgery*, *155*(4), 323. https://doi.org/10.1001/jamasurg.2019.6044	Check all that apply: Primary Research: __X__ Peer reviewed: X__ North American: _X__ Nursing: _____	Retrospective cohort study Level of evidence: 3	The study included 34,042 inpatient surgical encounters cases. 16 380 of the cases were women and 17, 638 were men.	A consecutive sample of all inpatient surgical cases over a 22-month period. No surgical jackets or bouffants mandated (8 months), surgical jackets mandated (6 months), both surgical jackets and bouffants mandated (8 months).	The study showed that surgical jackets and bouffants are neither beneficial nor cost-effective in preventing surgical site infections.