

# Exploring the impact of healthcare provider stress in the operating room: A literature review

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## BACKGROUND

- Burnout is a work-related stress syndrome<sup>1</sup> that can negatively affect healthcare workers' performance and quality of life.<sup>2</sup>
- Physicians and nurses experience substantial work-related stress and burnout, leading to departures from the profession.<sup>3-5</sup>
- Operating room (OR) healthcare professionals (HCPs) are especially prone to high stress and burnout levels.<sup>4</sup>
- Multiple factors contribute to burnout, such as heavy workloads, long hours, exhaustion, fatigue, lack of communication, and insufficient support.<sup>7,8</sup>
- HCP burnout is linked to elevated patient safety risks and increased medical errors.<sup>6,9,10</sup>

## OBJECTIVE

- This literature review describes the impact of healthcare provider stress in the OR on patient outcomes.

## METHODS

- A narrative review using a systematic approach.
- PEO search strategy:
  - Population: operating room staff
  - Exposure: burnout
  - Outcome: all
- Data collation: descriptive synthesis.

## REVIEW FINDINGS

- 48 articles were included** after full-text review.
- Data included: 19,246 OR study participants, 4,844 OR cases, 12 OR teams, 207 OR days
- In 88% of published primary studies that addressed healthcare worker stress or burnout, there was no connection made to patient outcomes.

## REVIEW FINDINGS

- There is limited published research on patient safety, sex differences in OR stress, OR solutions, and OR communication (**Figure 1**).
- Most study participants took part in research that explored experiences in the OR (**Figure 2**).
- Most research studied surgeon and OR nurse populations (**Figure 3**).

Figure 1. Number of studies retrieved for each research topic

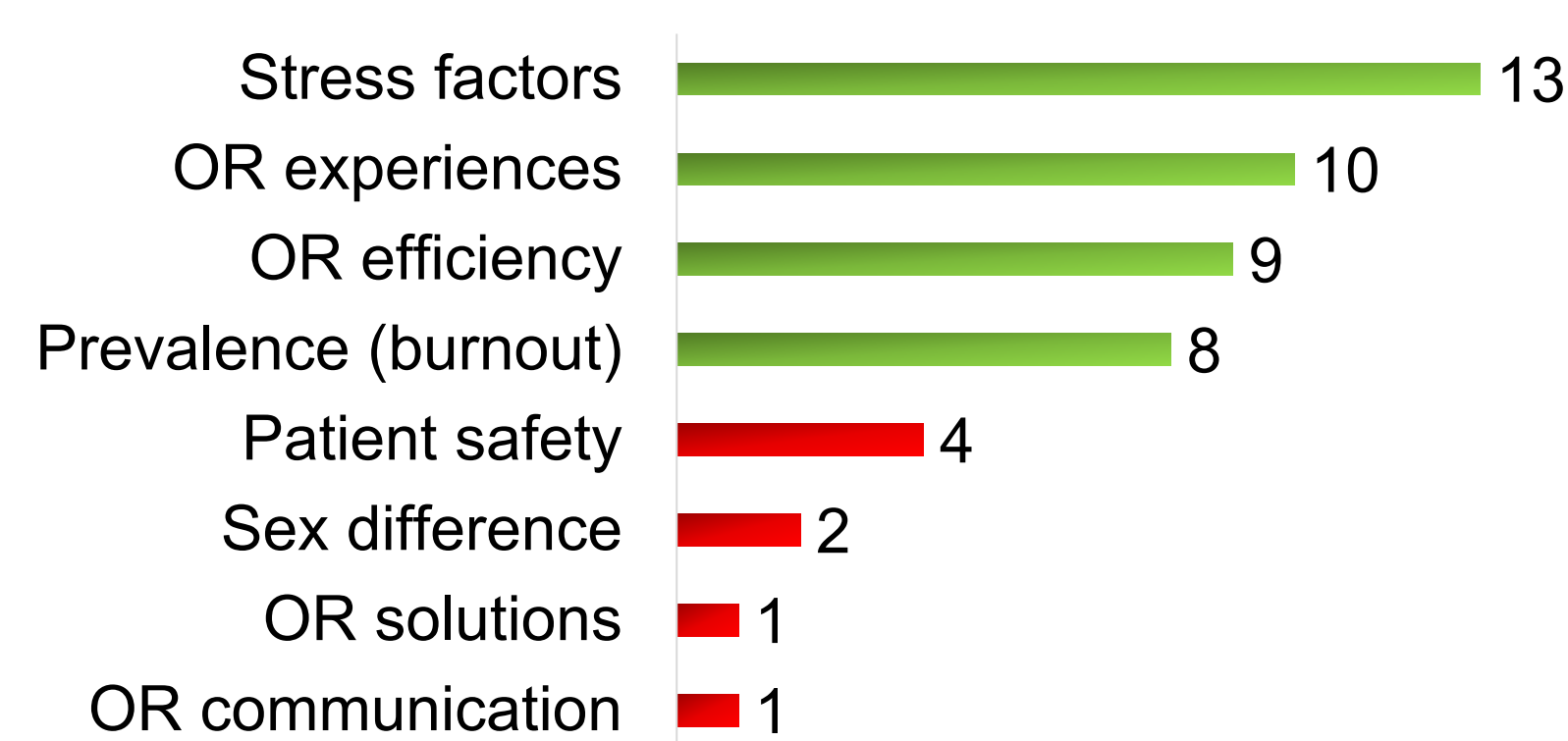


Figure 2. Number of participants for each research topic

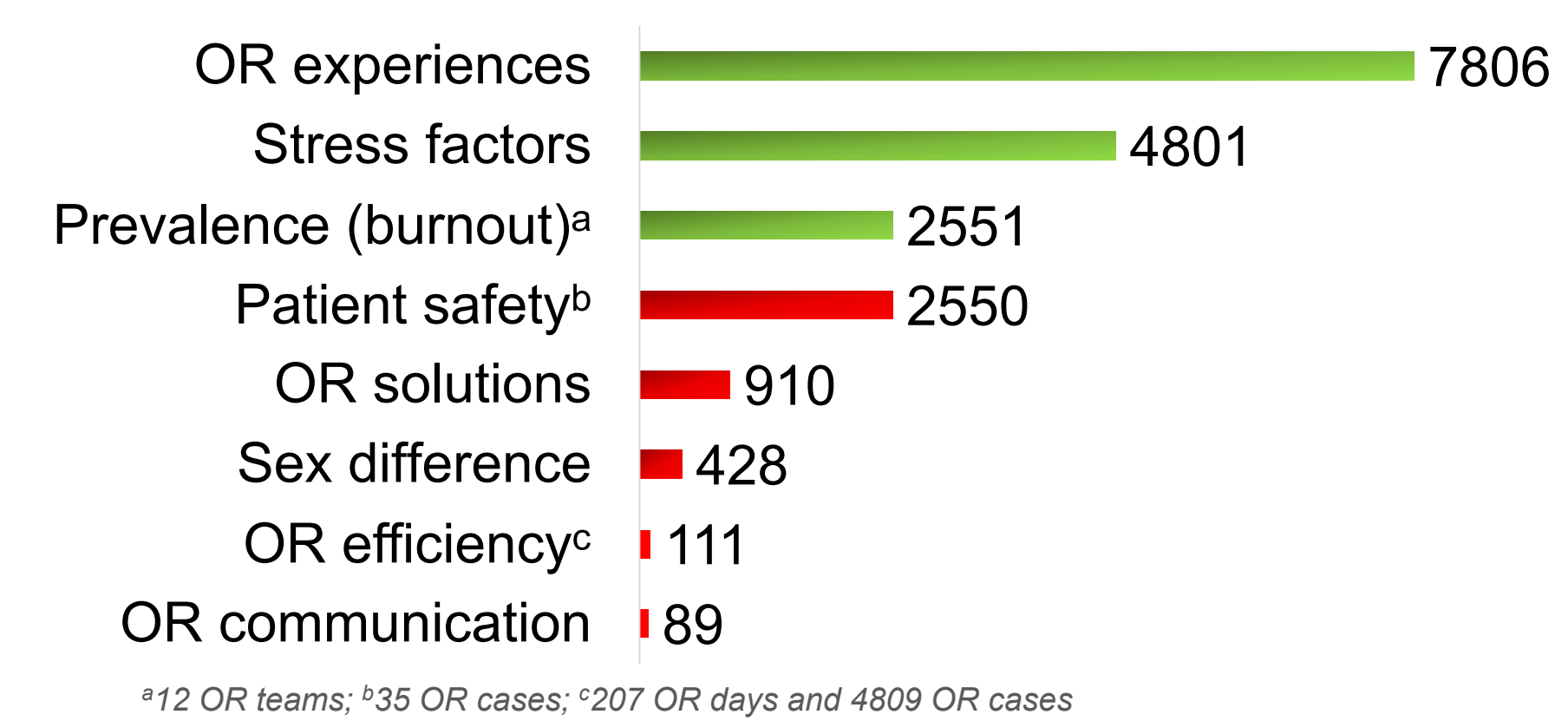
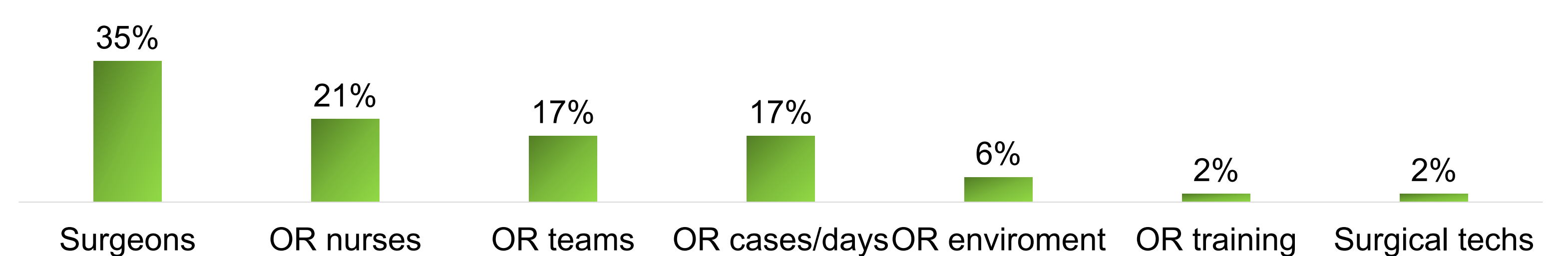


Figure 3. Percentage of research articles studying specific OR clinical populations



## REVIEW SUMMARY



### STRESS FACTORS

Various factors increase stress in the OR and can lead to burnout



### OR EXPERIENCES

Staff working in the OR reported negative experiences



### PATIENT SAFETY

Patient safety can be improved by focusing on the following factors

1 LACK OF JOB CONTROL & COMPLEX TASKS

2 SHIFT WORK/LONG HOURS & COVID-19 CHALLENGES

3 POOR TEAM DYNAMICS & SEXUAL DISCRIMINATION

1 COVID-19 INCREASED OR STAFF BURNOUT

2 NURSES FACED GRADUAL BURNOUT

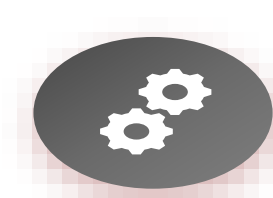
3 SURGEON STRESS REDUCED WITH ↑ SAFETY

1 TEAMWORK, STAFFING, SAFETY CULTURE

2 EFFECTIVE COMMUNICATION BY EXPERIENCED NURSES

3 PRIORITIZING PATIENT SAFETY IN THE OR

## RECOMMENDATIONS BASED ON REVIEW FINDINGS



STRESS FACTORS & BURNOUT



SUPPORTING OR STAFF



OR EFFICIENCY



MITIGATING BURNOUT



PROMOTING PATIENT SAFETY



UNDERSTANDING SEX DIFFERENCES



OR SOLUTIONS



OR COMMUNICATION

- Develop interventions for OR stressors.
  - Address workflow, shifts, COVID-19 stress..
- Provide extensive support and mental health training.
  - Focus on resident surgeon well-being to reduce shame and enhance accomplishment.
- Improve scheduling, minimize disruptions, optimize turnover times.
  - Explore digital solutions for efficient resource utilization.
- Monitor high burnout rates among nurses and surgeons.
  - Address psychological concerns, harassment, discrimination.
- Emphasize teamwork, adequate staffing, enhanced patient safety.
  - Cultivate a positive patient safety culture.
- Study causes of sex-based burnout differences and work roles.
  - Tailor interventions to support female physicians at work.
- Explore data-driven scheduling, workflow and task optimization tools.
  - Invest in digital tools, patient flow automation, OR efficiencies.
- Provide communication training for OR staff.
  - Improve teamwork within surgical teams to enhance patient safety.

## HIGHLIGHTS

83% of surgeons faced higher COVID-19 burnout risk.<sup>11</sup>

79% of vascular surgery residents experienced a negative workplace.<sup>12</sup>

71% of OR nurses experienced COVID-19 burnout.<sup>13</sup>

33% of surgeons showed depression symptoms<sup>14</sup> and

24% experienced COVID-19-related post-traumatic stress disorder.<sup>14</sup>

26% of a circulating nurses' time was spent outside the OR due to surgeon requests/supply issues.<sup>15</sup>

25% of female surgical residents experienced sexual harassment.<sup>12</sup>

## CONCLUSION

- This review reveals intricate OR stress and burnout challenges, potentially impacting patient safety and care.
- Our results indicate diverse stress factors affecting OR HCPs professionally and personally.
- Despite high burnout rates, limited research examines the burnout-patient safety link, underscoring a significant research gap.
- Further studies are vital to fully explore these dynamics and inform focused interventions for HCP well-being and patient safety enhancement in the OR.

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## ABBREVIATIONS

COVID-19, coronavirus SARS-CoV-2; HCPs, healthcare professionals; OR, operating room.

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