Investigating Ergonomics for Pregnant Clinicians During Flexible Laryngoscopy

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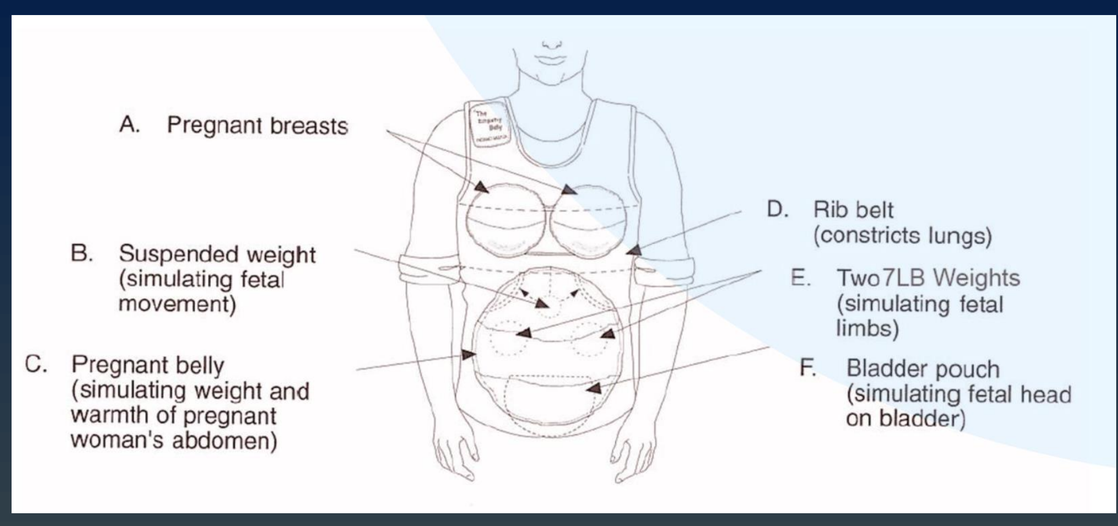

Introduction

- Pregnancy introduces physiological and biomechanical changes that may lead to discomfort, fatigue, and increased risk of injury.
- Limited literature exists on the ergonomics of flexible laryngoscopy (FL) in pregnancy.

Objective

- To assess the ergonomics of flexible laryngoscopy during pregnancy.

Materials and Methods

- Prospective cohort study of Otolaryngology – Head and Neck Surgery (OHNS) trainees.
- Performed awake FL simulation task twice, one of which while wearing a third trimester pregnancy simulation suit (Empathy Belly).

RULA Measurements

Simulation	RULA Right	RULA Left	Combined RULA
With	3.90 (3-6)	3.75 (3-6)	3.83 (3-6)
Without	3.65 (3-5)	3.55 (3-4)	3.60 (3-4.5)

REBA Measurements

Simulation	REBA Right	REBA Left	Combined REBA
With	4.30 (3-6)	5.0 (3.5-6)	4.65 (3.75-6)
Without	4.25 (3-6)	4.65 (3-6.5)	4.45 (3.25-6.25)

RULA Scoring

Score	Level of MSD Risk
1-2	neglibible risk, no action required
3-4	low risk, change may be needed
5-6	medium risk, further investigation, change soon
6+	very high risk, implement change now

REBA Scoring

Score	Level of MSD Risk
1	negligible risk, no action required
2-3	low risk, change may be needed
4-7	medium risk, further investigation, change soon
8-10	high risk, investigate and implement change
11+	very high risk, implement change

Results

- 10 OHNS trainees participated.
  - Mean age = 31.5 (range 28-37)
  - 60% male
- Average Rapid Upper Limb Assessment (RULA): 3.83 with the simulation and 3.60 without
- Average Rapid Entire Body Assessment (REBA): 4.65 with the simulation and 4.45 without
- All participants indicated that the pregnancy simulation altered their comfort with the task, quantified as 5.9 on scale of 0-10.
- Inter-rater reliabilities = 1.0, intra-rater reliabilities = 1.0

Conclusions

- Pregnant clinicians face ergonomic challenges in their day-to-day practices.
- Efforts are needed to consider inclusive workplace designs that support pregnant healthcare professionals while maintaining clinical performance and patient safety.

References

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