



## Brendan Carvalho

Professor of Anesthesiology, Perioperative and Pain Medicine (Obstetrics) and, by courtesy, of Obstetrics and Gynecology (Maternal Fetal Medicine)

 Curriculum Vitae available Online

### CLINICAL OFFICE (PRIMARY)

- **Dept of Anesthesia**

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### Bio

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#### BIO

Dr. Carvalho is the Chief of Obstetric Anesthesiology and Maternal Health, Vice Chair of Faculty Development, Professor in the Department of Anesthesiology, Perioperative and Pain Medicine, and Professor (Courtesy) in the Department of Obstetrics and Gynecology, Stanford University Medical Center. He is the Past President of the Society of Obstetric Anesthesia and Perinatology (SOAP), and founder the SOAP Center of Excellence for Obstetric Anesthesia Care Designation. He has published extensively in the field of Obstetric Anesthesia with over 400 peer-reviewed articles, editorials, reviews, book chapters and commentaries, with more than 15000 citations and an h-index score of 67. He has received several NIH, pharmaceutical and institutional grants, and won numerous research awards including three Best Research Papers at SOAP scientific meetings. Dr. Carvalho has won both the early and late-career Teacher of the Year awards at SOAP, and was voted Teacher of the Year at Stanford University's Departments of Anesthesia. He has presented at over 400 regional, national and international meetings and visiting professorships. He was been awarded the Distinguished Service Award from the SOAP, the Ellis N. Cohen Achievement Award from the Department of Anesthesiology, Perioperative and Pain Medicine, and the Distinguished Service Award from Lucile Packard Children's Hospital Stanford. He serves/has served on numerous national medical society committees and medical journal editorial boards, and as an advisor/consultant to the World Health Organization. His clinical and translational research and scholarly activities cover cesarean and labor analgesia, perinatal pharmacology and immunology, obstetric hemorrhage, and postpartum recovery.

#### CLINICAL FOCUS

- Anesthesia
- Anesthesia, Obstetrical
- Anesthesia, Regional

#### ACADEMIC APPOINTMENTS

- Professor - University Medical Line, Anesthesiology, Perioperative and Pain Medicine
- Professor - University Medical Line (By courtesy), Obstetrics & Gynecology - Maternal Fetal Medicine
- Member, Maternal & Child Health Research Institute (MCHRI)

## ADMINISTRATIVE APPOINTMENTS

- Chief, Division of Obstetric Anesthesia, (2013- present)

## PROFESSIONAL EDUCATION

- Board Certification: Anesthesia, American Board of Anesthesiology (2014)
- Fellowship, Stanford University , Obstetric Anesthesia (2002)
- Residency: Southwest School of Anesthesia (2001) England
- Internship: Groote Schuur Hospital (1995) South Africa
- Medical Education: University of Witwatersrand (1994) South Africa

## Research & Scholarship

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### CURRENT RESEARCH AND SCHOLARLY INTERESTS

I have completed research in a number of important areas in obstetric anesthesia including: optimizing neuraxial techniques for labor and cesarean analgesia; predicting individual labor and cesarean pain and analgesic needs; evaluating pregnancy-induced and hormonal changes in pain perception; determining the role of cytokines and other biochemical mediators in incisional wounds; evaluating local anesthetic potency and anesthetic requirements during labor and cesarean delivery; determining epidural and spinal opioid applications and the role of long-acting neuraxial opioids in obstetric pain management; investigating peripartum hemostatic and coagulation changes; conducting cost-analyses of various obstetric anesthesia practices; optimizing the management of maternal cardiac arrest and other obstetrical emergencies; determining patient attitudes and ethnic preferences towards obstetric analgesia; determining the efficacy of peripheral wound drug administration; and pharmacokinetics/pharmacodynamics of drugs administered to pregnant women. My current area of research focus is in developing novel ways of improving post-cesarean and peripartum labor pain management, and developing detailed pharmacokinetics/pharmacodynamics models of key antenatal medications.

### CLINICAL TRIALS

- Oxytocin Pharmacokinetics and Pharmacodynamics, Recruiting
- Calcium Chloride for Prevention of Uterine Atony During Cesarean, Not Recruiting
- Pharmacokinetic (PK) and Pharmacodynamic (PD) Modeling of Ampicillin and Gentamicin in Peripartum Patients, Not Recruiting

## Teaching

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### STANFORD ADVISEES

#### Postdoctoral Research Mentor

Moe Takenoshita

## Publications

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### PUBLICATIONS

- **Biopsychosocial predictors of chronic pain after caesarean delivery: a prospective cohort evaluation of the SPACE (Sleep, Pain, Affect, Cognition, Energy)-Postpartum framework.** *BJA open*  
Ciechanowicz, S., Michel, G., Panigrahy, N., Sukhdeo, H., Carvalho, B., Sultan, P.  
2026; 18: 100560
- **Prospective clinical study for assessing real-time objective pain using a signal processing algorithm in conjunction with wearable forehead sensors.** *Journal of clinical anesthesia*  
Sagreiya, H., Michel, G., Akhbardeh, A., Carvalho, B.  
2026; 112: 112236

- **Intraoperative dexamethasone and risk of postoperative infection after cesarean delivery: a retrospective cohort study.** *International journal of obstetric anesthesia*  
Cho, E., Jethwa, A. J., Sultan, P., Guo, N., Chakraborty, D., Harrison, N., Stanwyck, C., Carvalho, B.  
2026; 67: 105208
- **Double dural puncture epidural; once is more than enough.** *European journal of anaesthesiology*  
Karkri, F., Carvalho, B., Riley, E. T., Ansari, J. R.  
2026; 43 (4): 365-367
- **Cesarean Anesthesia Type and Neonatal Outcomes: Comment.** *Anesthesiology*  
Craig, R., O'Carroll, J. E., Lucas, N., Landau, R., Habib, A. S., Carvalho, B.  
2026
- **Prospective Study of Postoperative Respiratory Depression Metrics After Cesarean Delivery Among Women Receiving Intrathecal Morphine.** *Anesthesia and analgesia*  
Lustig, A., Carvalho, B., Haim, S., Guo, N., Greenberger, C., Karol, D., Aptekman, B., Weiniger, C. F.  
2026
- **Prevalence of and Risk Factors for Postpartum Anxiety in a U.S. Cohort With Commercial Insurance.** *Obstetrics and gynecology*  
Smith, M., Koons, N. J., Callihan, P., Guo, N., Simard, J. F., Gardner, R. M., Carvalho, B., Bateman, B. T., Leonard, S. A., Sultan, P.  
2026
- **Aspiration risk assessment for postpartum tubal ligation using gastric ultrasound: a single-center prospective observational trial.** *International journal of obstetric anesthesia*  
Fantin, R., Abrams, J., Cariello, C., Michel, G., Guo, N., Carvalho, B., Ortner, C. M.  
2026; 66: 104881
- **A Multicenter Assessment of Postpartum Recovery Using the STanford Obstetric Recovery Checklist.** *Journal of obstetrics and gynaecology Canada : JOGC = Journal d'obstetrique et gynecologie du Canada : JOGC*  
Takenoshita, M., Guo, N., Carvalho, B., Leonard, S. A., Panelli, D. M., Farber, M. K., Toledo, P., Higgins, N., Sultan, P.  
2026: 103233
- **Inpatient postpartum recovery following episiotomy: secondary outcomes of a prospective observational study.** *International journal of obstetric anesthesia*  
Hayoun, D. H., Sultan, P., Eshel, R., Guo, N., Carvalho, B., Weiniger, C. F.  
2026; 65: 104798
- **Inpatient postpartum recovery following episiotomy: secondary outcomes of a prospective observational study** *INTERNATIONAL JOURNAL OF OBSTETRIC ANESTHESIA*  
Ben Hayoun, D. H., Sultan, P., Eshel, R., Guo, N., Carvalho, B., Weiniger, C. F.  
2026; 65
- **Management of uterine atony in obstetric anaesthesia.** *BJA education*  
Ansari, J. R., Abrams, J., Carvalho, B.  
2026; 26 (1): 38-47
- **Management of uterine atony in obstetric anaesthesia** *BJA EDUCATION*  
Ansari, J. R., Abrams, J., Carvalho, B.  
2026; 26 (1): 38-47
- **Intraoperative pain during cesarean delivery: reflections and next steps.** *International journal of obstetric anesthesia*  
Sultan, P., Carvalho, B., Landau, R.  
2025; 65: 104828
- **Quality improvement methodology used in enhanced recovery after caesarean delivery implementation studies: a narrative review and author survey.** *BMJ open quality*  
Fedoruk, K., Carvalho, B., Blake, L., Sultan, P.  
2025; 14 (4)
- **Curvilinear versus phased array transducer: using the obstetric ultrasound for focused cardiac ultrasound in laboring patients - a randomized controlled assessment.** *International journal of obstetric anesthesia*

- Squires, L. B., Conti, D. J., Martinez, E. E., Guo, N., Carvalho, B., Ortner, C. M.  
2025; 65: 104827
- **Comparison of Perioperative Temperature Monitoring Sites During Elective Cesarean Deliveries: A Quality Improvement Initiative.** *Cureus*  
Ismail, N., Shah, S., Guo, N., Carvalho, B., Fedoruk, K.  
2025; 17 (12): e99890
  - **Incidence of pain during cesarean delivery with neuraxial anesthesia: an international, prospective cohort study.** *Anesthesiology*  
O'Carroll, J. E., Conti, D., Gao, N., Carvalho, B., Sultan, P.  
2025
  - **Adverse childhood experiences and post-cesarean pain and in-hospital opioid use: a prospective cohort study.** *International journal of obstetric anesthesia*  
Joudi, N., Reddy, N. S., Sherwin, E. B., Markwei, M., Hurtado, J., Simpson, S. L., Burgess, J. J., Leonard, S. A., Schultz, M., Carvalho, B., Sultan, P., Bianco, K., Panelli, et al  
2025; 65: 104822
  - **Patient experiences of chronic postsurgical pain after caesarean delivery: findings from a prospective qualitative study.** *International journal of obstetric anesthesia*  
Ciechanowicz, S., Callihan, P., Michel, G., Panelli, D. M., Carvalho, B., Sultan, P.  
2025; 65: 104817
  - **Quantification of breath metabolites in labouring versus non-labouring patients: a feasibility study** *BRITISH JOURNAL OF ANAESTHESIA*  
Hengelage, J., Fowler, C., Goldsberry, M. D., Stockert, E., Bekemeyer, Z., Lee, H., Wagner, N., Sultan, P., Carvalho, B., Gross, E. R.  
2025; 135 (5): 1373-1375
  - **Professional society recommended interventions for enhanced recovery after cesarean delivery in the United States: a multidisciplinary Delphi study.** *International journal of obstetric anesthesia*  
Sultan, P., Nelson, G., Joudi, K., Singh, D. J., Gregory, K. D., Zakowski, M., Carvalho, B.  
2025; 65: 104811
  - **Opioid consumption and pain scores following perineal lacerations: a retrospective cohort study 2019-2023.** *International journal of obstetric anesthesia*  
Squires, L., Carvalho, B., Sultan, P., Fedoruk, K.  
2025; 65: 104789
  - **Quantification of breath metabolites in labouring versus non-labouring patients: a feasibility study.** *British journal of anaesthesia*  
Hengelage, J., Fowler, C., Goldsberry, M. D., Stockert, E., Bekemeyer, Z., Lee, H., Wagner, N. M., Sultan, P., Carvalho, B., Gross, E. R.  
2025
  - **Virtual reality compared to nitrous oxide for labor analgesia: A feasibility pilot, prospective, randomized, cross-over, non-inferiority study.** *International journal of obstetric anesthesia*  
Yun, R., Arce, D., Bekemeyer, Z. J., Michel, G., Nan, G., Hoang, D. B., Caruso, T. J., Carvalho, B.  
2025; 64: 104758
  - **Intraoperative pain during cesarean delivery: a qualitative concept elicitation study.** *International journal of obstetric anesthesia*  
Callihan, P., Cottrell Bekemeyer, Z. J., Pedreira, R., Michel, G., Sukhdeo, H., O'Carroll, J., Carvalho, B., Martinez, E., Sultan, P.  
2025; 64: 104748
  - **Raising the bar: the next chapter in enhanced recovery after cesarean delivery.** *International journal of obstetric anesthesia*  
Sultan, P., Bollag, L., Carvalho, B., Nelson, G.  
2025; 64: 104745
  - **Development and validation of a multivariable model for predicting prolonged length of stay following caesarean delivery.** *International journal of obstetric anesthesia*  
O'Carroll, J. E., Zucco, L., Warwick, E., Radcliffe, G., Moonesinghe, S. R., Tian, L., Cai, B., El-Boghdady, K., Guo, N., Carvalho, B., Sultan, P.  
2025; 64: 104725
  - **Snapshot of Obstetric National Audit and Research Project (SONAR1): a protocol for an international observational cohort study.** *BMJ open*  
Patel, R., O'Carroll, J., Kua, J., Sultan, P., Carvalho, B., El Sharawi, N., Eley, V., O'Brien, P., Stanford, S., Hill, S., Craig, R., Lucas, N., Hou, et al

2025; 15 (6): e103525

- **Improving epidemiology synthesis of postpartum complications: methodological considerations.** *American journal of obstetrics and gynecology*  
Bone, J. N., Chen Ke, J. X., Wong, M., Dol, J., Chau, A., Carvalho, B., Zhang, Q., Sultan, P.  
2025
- **Peri-operative use of high-flow nasal oxygen in obstetric patients: a systematic review.** *Anaesthesia*  
Craig, R., Curran, L., Bampoe, S., Odor, P., Blake, L., Carvalho, B., O'Carroll, J.  
2025
- **Delphi study to develop a core outcome set for inpatient pain assessment after cesarean delivery.** *Anaesthesia, critical care & pain medicine*  
Ciechanowicz, S., Carvalho, B., Berger, J., Duch, P., Flood, P., Ffrench-O'Carroll, R., Sviggum, H., Hakimi, S., Jethava, D., Mieszkowski, M., Merriam, A., Osmundson, S., Ituk, et al  
2025: 101556
- **Frequency and timing of complications within the first postpartum year in the United States and Canada: A systematic review and meta-analysis.** *American journal of obstetrics and gynecology*  
Chen Ke, J. X., Bilan, K., Vidler, M., Wong, M., Chau, A., Zhang, Q., Bone, J. N., Enriquez, A., Sandhu, R., George, R. B., Baron, R. A., Lakda, A. M., Dol, et al  
2025
- **Development and Implementation of an Automated Electronic Maternal Early Warning System (E-MEWS) in a Level IV Obstetric Unit.** *Cureus*  
Padilla, C. R., Carvalho, B., Oakeson, A. M., Riley, E. T., Abir, G.  
2025; 17 (5): e84740
- **Incidence, Severity, and Interference of Chronic Postsurgical Pain After Cesarean Delivery: A Systematic Review and Meta-analysis.** *Journal of clinical anesthesia*  
Ciechanowicz, S., Joy, R. R., Kasmirski, J., Blake, L., Carvalho, B., Sultan, P.  
2025; 104: 111832
- **Uterine tone numeric rating score as an early indicator of major postpartum hemorrhage during cesarean delivery: A prospective observational study.** *Anesthesiology*  
Koons, N. J., Stanwyck, C., Xie, J. J., Michel, G., Lyell, D. J., Carvalho, B., Bateman, B. T., Ansari, J. R.  
2025
- **Intraoperative pain during cesarean delivery under neuraxial anesthesia: A systematic review and meta-analysis.** *Anesthesiology*  
Charles, E. A., Carter, H., Stanford, S., Blake, L., Eley, V., Carvalho, B., Sultan, P., Kua, J., O'Carroll, J. E.  
2025
- **Profiling Postpartum Recovery After Scheduled Cesarean Delivery With Neuraxial Anesthesia: A Longitudinal Cohort Study.** *Anesthesia and analgesia*  
Sharpe, E. E., Sviggum, H. P., Carvalho, B., Guo, N., Arendt, K. W., Stoltenberg, A. D., Tinaglia, A. G., Torbenson, V. E., Sultan, P.  
2025
- **Development and Validation of the Stanford Obstetric Recovery Checklist (STORK): A Delphi Consensus and Multicenter Clinical Validation Study.** *JAMA network open*  
Sultan, P., Pandal, P., Murthy, A., Guo, N., Farber, M. K., Toledo, P., Higgins, N., Fiore, J. F., Domingue, B. W., Khorasani, E., Jensen, S. E., Lyell, D. J., Carvalho, et al  
2025; 8 (4): e255713
- **Consensus statement on pain management for pregnant patients with opioid use disorder from the Society for Obstetric Anesthesia and Perinatology, Society for Maternal-Fetal Medicine, and American Society of Regional Anesthesia and Pain Medicine.** *American journal of obstetrics and gynecology*  
Lim, G., Carvalho, B., George, R. B., Bateman, B. T., Brummett, C. M., Ip, V. H., Landau, R., Osmundson, S., Raymond, B., Richebe, P., Soens, M., Terplan, M.  
2025
- **Racial and ethnic disparity in obstetric anaesthesia: a systematic review and meta-analysis.** *Anaesthesia*  
Craig, R., El Nour, S., Xuereb, L. B., Gibbs, A., Suriyakumar, S., Blake, L., David, A. L., Lee, A., Nzelu, D., Moonesinghe, S. R., Bampoe, S., Carvalho, B., Kua, et al

2025

- **The Influence of Childhood Abuse, Neglect, and Household Dysfunction on Postpartum Opioid Use**  
Reddy, N., Sherwin, E., Hurtado, J., Simpson, S., Burgess, J., Joudi, N., Markwei, M., Schultz, M., Sultan, P., Carvalho, B., Bianco, Y., Panelli, D.  
SPRINGER HEIDELBERG.2025: 51A
- **Delphi consensus recommendations for neuraxial anaesthesia in adults with platelet disorders and coagulation defects: Communication from the ISTH SSC Subcommittee on von Willebrand factor.** *Journal of thrombosis and haemostasis : JTH*  
Peterson, W., Martin, R., Arnold, D., Carvalho, B., Cuker, A., Gadsden, J., Provan, D., Rydz, N., Shore, E., Kuter, D., Kouides, P., Lavin, M., James, et al  
2025
- **Development and Implementation of an Automated Electronic Maternal Early Warning System (E-MEWS) in a Level IV Obstetric Unit** *Cureus*  
Padilla, C., Carvalho, B., Oakeson, A., Riley, E., Abir, G.  
2025; 17 (e84740)
- **Establishing optimal methodology for studying chatbots in clinical decision making: A new frontier.** *Journal of clinical anesthesia*  
Ismail, N., Carvalho, B., Sultan, P.  
2024; 101: 111707
- **Quality of recovery after cesarean delivery in patients with Class III Obesity: a prospective observational cohort study.** *International journal of obstetric anesthesia*  
Zimmo, K., Ching-Johnson, J., Jones, P. M., Singh, S. I., Dobrowlanski, A., Symons, Y. T., de Vrijer, B., Sultan, P., Carvalho, B., Sebbag, I.  
2024; 61: 104312
- **Postpartum sleep quality and physical activity profiles following elective cesarean delivery: a longitudinal prospective cohort pilot study utilizing a wearable actigraphy device.** *International journal of obstetric anesthesia*  
Pandal, P., Carvalho, B., Shu, C. H., Ciechanowicz, S., O'Carroll, J., Aghaeepour, N., Fowler, C., Simons, L. E., Druzin, M. L., Panelli, D. M., Sultan, P.  
2024; 62: 104305
- **Comparative efficacy of intravenous treatments for perioperative shivering in patients undergoing caesarean delivery under neuraxial anaesthesia: A systematic review and Bayesian network meta-analysis of randomised-controlled trials.** *Journal of clinical anesthesia*  
Ferrea, G., Monks, D. T., Singh, P. M., Fedoruk, K., Singh, N. P., Blake, L., Carvalho, B., Sultan, P.  
2024; 100: 111680
- **Consensus Statement on Pain Management for Pregnant Patients with Opioid-Use Disorder from the Society for Obstetric Anesthesia and Perinatology, Society for Maternal-Fetal Medicine, and American Society of Regional Anesthesia and Pain Medicine.** *Anesthesia and analgesia*  
Lim, G., Carvalho, B., George, R. B., Bateman, B. T., Brummett, C. M., Ip, V. H., Landau, R., Osmundson, S. S., Raymond, B., Richebe, P., Soens, M., Terplan, M.  
2024
- **A Survey of Obstetric Anaesthesia Services and Practices in the United Kingdom.** *Cureus*  
O'Carroll, J., Zucco, L., Warwick, E., Arbane, G., Moonesinghe, R., El-Boghdady, K., Guo, N., Carvalho, B., Sultan, P.  
2024; 16 (10): e70851
- **The evaluation of the performance of ChatGPT in the management of labor analgesia.** *Journal of clinical anesthesia*  
Ismail, N., Nguyen, T. P., Guo, N., Carvalho, B., Sultan, P.  
2024; 98: 111582
- **Comparison of artificial intelligence large language model chatbots in answering frequently asked questions in anaesthesia.** *BJA open*  
Nguyen, T. P., Carvalho, B., Sukhdeo, H., Joudi, K., Guo, N., Chen, M., Wolpaw, J. T., Kiefer, J. J., Byrne, M., Jamroz, T., Mootz, A. A., Reale, S. C., Zou, et al  
2024; 10: 100280
- **In Response.** *Anesthesia and analgesia*  
Mootz, A. A., Carvalho, B., Sultan, P., Nguyen, T. P., Reale, S. C.  
2024; 138 (6): e37-e38

- **Associations between anxiety, sleep, and blood pressure parameters in pregnancy: a prospective pilot cohort study.** *BMC pregnancy and childbirth*  
Miller, H. E., Simpson, S. L., Hurtado, J., Boncompagni, A., Chueh, J., Shu, C. H., Barwick, F., Leonard, S. A., Carvalho, B., Sultan, P., Aghaeepour, N., Druzin, M., Panelli, et al  
2024; 24 (1): 366
- **Strategies for optimising early detection and obstetric first response management of postpartum haemorrhage at caesarean birth: a modified Delphi-based international expert consensus.** *BMJ open*  
Pingray, V., Williams, C. R., Al-Beity, F. M., Abalos, E., Arulkumaran, S., Blumenfeld, A., Carvalho, B., Deneux-Tharoux, C., Downe, S., Dumont, A., Escobar, M. F., Evans, C., Fawcus, et al  
2024; 14 (5): e079713
- **Liposomal Bupivacaine for Abdominal Fascial Plane Blocks: No Evidence or Lack of Relevant Evidence?** *Anesthesiology*  
Habib, A. S., Gadsden, J., Carvalho, B.  
2024; 140 (5): 871-873
- **Evaluation of Sleep in Pregnant Inpatients Compared With Outpatients.** *Obstetrics and gynecology*  
Panelli, D. M., Miller, H. E., Simpson, S. L., Hurtado, J., Shu, C. H., Boncompagni, A. C., Chueh, J., Barwick, F., Carvalho, B., Sultan, P., Aghaeepour, N., Druzin, M. L.  
2024
- **Physical activity among pregnant inpatients and outpatients and associations with anxiety.** *European journal of obstetrics, gynecology, and reproductive biology*  
Panelli, D. M., Miller, H. E., Simpson, S. L., Hurtado, J., Shu, C. H., Boncompagni, A. C., Chueh, J., Carvalho, B., Sultan, P., Aghaeepour, N., Druzin, M. L.  
2024; 297: 8-14
- **Continuous wound infusion catheter as part of a multimodal analgesia regimen for post-Caesarean delivery pain: a quality improvement impact study.** *BJA open*  
Fowler, C., Stockert, E., Hoang, D., Guo, N., Riley, E., Sultan, P., Carvalho, B.  
2024; 9: 100242
- **Ethnicity, socio-economic deprivation and postpartum outcomes following caesarean delivery: a multicentre cohort study.** *Anaesthesia*  
O'Carroll, J. E., Zucco, L., Warwick, E., Radcliffe, G., Moonesinghe, S. R., El-Boghdadly, K., Guo, N., Carvalho, B., Sultan, P.  
2024
- **A Cost and Waste-Savings Comparison Between Single-Use and Reusable Pulse Oximetry Sensors Across US Operating Rooms.** *Anesthesia and analgesia*  
Stockert, E. W., Carvalho, B., Sun, E. C.  
2024
- **The Accuracy of ChatGPT-Generated Responses in Answering Commonly Asked Patient Questions About Labor Epidurals: A Survey-Based Study.** *Anesthesia and analgesia*  
Mootz, A. A., Carvalho, B., Sultan, P., Nguyen, T. P., Reale, S. C.  
2024
- **A retrospective cohort study of the anesthetic management of postpartum tubal ligation.** *International journal of obstetric anesthesia*  
Ansari, J., Sheikh, M., Riley, E., Guo, N., Traynor, A., Carvalho, B.  
2024: 103974
- **Adrenaline or noradrenaline for spinal hypotension during caesarean section - beware; the cure may be worse than the disease** *SOUTHERN AFRICAN JOURNAL OF ANAESTHESIA AND ANALGESIA*  
Dyer, R. A., Carvalho, B., Blockman, M., Pfister, C.  
2024; 30 (4): 100-102
- **Association of antenatal anxiety, short sleep duration, and blood pressure parameters: a pilot study**  
Miller, H. E., Simpson, S. L., Hurtado, J., Shu, C., Chueh, J., Barwick, F., Leonard, S. A., Carvalho, B., Sultan, P., Aghaeepour, N., Druzin, M. L., Panelli, D. M.  
MOSBY-ELSEVIER.2024: S287
- **Insomnia in pregnancy: are hospitalized inpatients sleeping less than outpatients?**

- Panelli, D. M., Miller, H. E., Simpson, S. L., Hurtado, J., Shu, C., Boncompagni, A. C., Chueh, J., Barwick, F., Carvalho, B., Sultan, P., Aghaeepour, N., Druzin, M. L.  
MOSBY-ELSEVIER.2024: S378
- **Physical activity among pregnant inpatients and outpatients and associations with anxiety**  
Panelli, D. M., Miller, H. E., Simpson, S. L., Hurtado, J., Shu, C., Boncompagni, A. C., Chueh, J., Carvalho, B., Sultan, P., Aghaeepour, N., Druzin, M. L.  
MOSBY-ELSEVIER.2024: S578
  - **Feasibility of Focused Cardiac Ultrasound Performed by Trainees During Cesarean Delivery.** *Anesthesia and analgesia*  
Ortner, C. M., Sheikh, M., Athar, M. W., Padilla, C., Guo, N., Carvalho, B.  
2023
  - **Prevalence and predictors for postpartum sleep disorders: a nationwide analysis.** *The journal of maternal-fetal & neonatal medicine : the official journal of the European Association of Perinatal Medicine, the Federation of Asia and Oceania Perinatal Societies, the International Society of Perinatal Obstetricians*  
Sultan, P., Guo, N., Kawai, M., Barwick, F. H., Carvalho, B., Mackey, S., Kallen, M. A., Gould, C. E., Butwick, A. J.  
2023; 36 (1): 2170749
  - **Standardizing nomenclature in regional anesthesia: an ASRA-ESRA Delphi consensus study of upper and lower limb nerve blocks.** *Regional anesthesia and pain medicine*  
El-Boghdady, K., Albrecht, E., Wolmarans, M., Mariano, E. R., Kopp, S., Perlas, A., Thottungal, A., Gadsden, J., Tulgar, S., Adhikary, S., Aguirre, J., Agur, A. M., Altıparmak, et al  
2023
  - **Intravenous Calcium to Decrease Blood Loss During Intrapartum Cesarean Delivery: A Randomized Controlled Trial.** *Obstetrics and gynecology*  
Ansari, J. R., Yarmosh, A., Michel, G., Lyell, D., Hedlin, H., Cornfield, D. N., Carvalho, B., Bateman, B. T.  
2023
  - **Obstetric operating room staffing and operating efficiency using queueing theory.** *BMC health services research*  
Lim, G., Lim, A. J., Quinn, B., Carvalho, B., Zakowski, M., Lynde, G. C.  
2023; 23 (1): 1147
  - **Effect of an electronic medical record nudge to improve quality improvement program tracking of neuraxial catheter replacements in obstetric patients.** *BMJ open quality*  
Fedoruk, K., Xie, J., Wang, E., Fowler, C., Riley, E., Carvalho, B.  
2023; 12 (4)
  - **Association of inpatient postpartum quality of recovery with postpartum depression: A prospective observational study.** *Journal of clinical anesthesia*  
Ben Hayoun, D. H., Sultan, P., Rozeznic, J., Guo, N., Carvalho, B., Orbach-Zinger, S., Weiniger, C. F.  
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