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COMMENT

ECI Bio-commentary: Vivek V. Shukla

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I am an Assistant Professor in the Division of Neonatology in the Department of Pediatrics at the University of Alabama at Birmingham (UAB). I am excited to share my journey with other early career investigators, and I thank Pediatric Research for providing this platform.

From an early age, I have been inspired by my dad, a pediatrician, and my role model, to pursue a career in Pediatrics. My journey toward becoming a clinician–scientist began with a degree in medicine and pediatrics residency from Sardar Patel University in India, followed by fellowships in neonatology from the Indian Academy of Pediatrics in India and then at the University of Toronto in Canada. My experiences participating in clinical studies during these intensive training periods resulted in several clinical research publications, which ignited my passion for pursuing research and academic career. To seek better research and funding opportunities, I came to the US. I completed pediatric residency at SUNY, Downstate Health Sciences University, and a neonatology fellowship at UAB.

During my training, I received recognition for my research with the Dr James Flett Endowment National Gold Medal from the Indian Academy of Pediatrics and research awards from the Society for Pediatric Research and the Perinatal Research Society. I was also honored to receive an American Heart Association (AHA) Career Development Award to support my research endeavors. These recognitions have inspired me to pursue excellence in research.

My goal is to become a leading researcher and innovator in artificial intelligence (AI) and advanced machine learning (ML) for risk prediction, with a focus on implementing innovative technological solutions to enhance health outcomes. I am driven by a strong determination to contribute to this field, using my skills and expertise to push the boundaries of what is possible. I have pursued online training courses in AI and ML, and I am currently pursuing a PhD at the Department of Electrical and Computer Engineering at UAB, focusing on the application of AI and ML in medicine.

I have focused my efforts on large database studies. Some of my recent publications include a multi-country study using a research database from the NICHD/NIH-funded Global Network for Women's and Children's Health Research to predict the risk of neonatal mortality in low- and middle-income countries. The study applied advanced ML-based modeling techniques to develop risk prediction models for intrapartum stillbirth and neonatal mortality. We found that pre-delivery variables had low accuracy in predicting stillbirth and neonatal mortality, but including post-delivery variables improved neonatal mortality prediction. Birth weight was found to be the most important predictor of neonatal mortality. An easy-to-use tool was developed for frontline health providers to predict neonatal mortality risk.[1]

I have also used ML models to predict the risk of death or neurodevelopmental disabilities in infants with perinatal hypoxic-ischemic encephalopathy using the Optimizing Cooling trial database from the NICHD/Neonatal Research Network. We found that a 10-minute Apgar score of 0 alone does not predict the risk of death or moderate or severe disability well. This study provided evidence in support of the 2020 AHA/International Liaison Committee on Resuscitation recommendation for continuing resuscitative efforts for infants who need cardiopulmonary resuscitation at 10 min after birth.[2]

In another large database project using the Alabama Department of Public Health database, we evaluated the effect of the COVID-19 pandemic on maternal mortality, stillbirth, and neonatal mortality rates. We identified that while there was no significant change in stillbirth and neonatal mortality rates during the pandemic periods,[3] the rates of maternal mortality and morbidity were significantly higher.[4] I am involved in several ongoing projects using AI and ML techniques to predict perinatal outcomes and to create innovative technological tools to individualize care for improving long-term outcomes.

I am indebted for the opportunities that have led me to this point in my career. I am fortunate to have had exceptional mentors who have motivated and encouraged me to pursue my research interests. In addition, I am grateful for the unwavering support of my family, including my life partner, who has been a constant source of encouragement and a steadfast support system.

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My suggestions to peer early career investigators: I suggest developing a robust research plan focusing on a specific area of interest, creating a strong foundation in research methods, selecting experienced and effective mentors, learning new skills, and identifying important research questions. In addition, networking with other investigators and attending relevant conferences and events can help build collaborations to enhance your research. Finally, I emphasize the importance of maintaining a healthy work–life balance, prioritizing self-care, spending time with family and friends, and hobbies to recharge yourself.

REFERENCES

1. Shukla, V. V. et al. Predictive modeling for perinatal mortality in resource-limited settings. *JAMA Netw. Open.* **3**, e2026750 (2020).
2. Shukla, V. V. et al. Predictive ability of 10-minute Apgar scores for mortality and neurodevelopmental disability. *Pediatrics* **149**, e2021054992 (2022).
3. Shukla V. V. et al. Trends in fetal and neonatal outcomes during the COVID-19 pandemic in Alabama. *Pediatr. Res.* 1–6. https://doi.org/10.1038/s41390-023-02533-1 (2023).
4. Shukla, V. V. et al. Trends in maternal outcomes during the COVID-19 pandemic in Alabama from 2016 to 2021. *JAMA Netw. Open.* **5**, e222681 (2022).

AUTHOR CONTRIBUTIONS

V.V.S. wrote and edited the manuscript.

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COMPETING INTERESTS

The author declares no competing interests.

ADDITIONAL INFORMATION

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