# THE IMPACT OF PRENATAL LEAD EXPOSURE ON COGNITIVE & PHYSICAL HEALTH OUTCOMES AMONG INFANTS AND CHILDREN IN BANGLADESH

BRIANA ABRAMS, SPT

ALEXA CARDELLA, SPT

ALESIA HEIMES, SPT

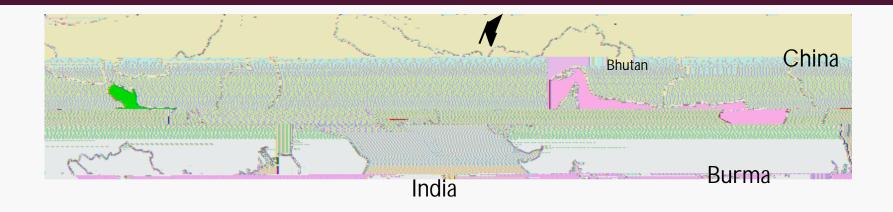
MEGHAN NALLY, SPT

LORI WALTON, PT, DPT, MSCPT, MPH(S), PHD

NICHOLAS RODIO, PT, DPT



# BANGLADESH





#### LEAD EXPOSURE SUSCEPTIBILITY

Lack of environmental regulations<sup>1-2</sup>

Malnutrition<sup>1-2</sup>

Micronutrient deficiencies<sup>1-2</sup>



#### PRENATAL LEAD EXPOSURE IN BANGLADESH

Working Place<sup>3</sup>

Industrial or Urban Areas<sup>3</sup>

Air pollution<sup>3</sup>

Consumption of lead polluted water and food<sup>3</sup>

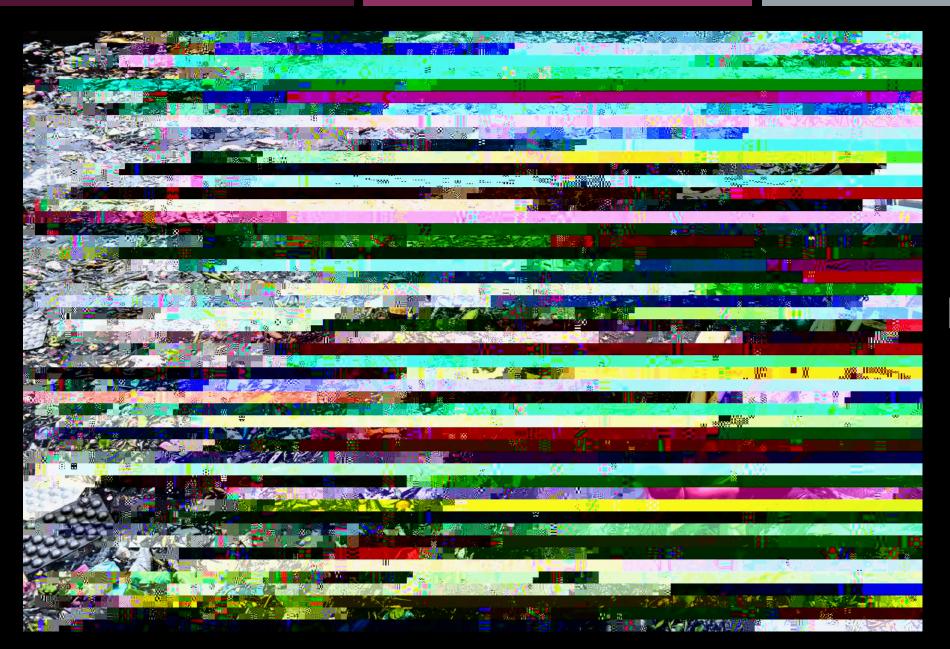


#### HARMFUL IMPACTS OF LEAD

#### Harmful Impacts of Lead Include

- Lower Neurodevelopment Scores<sup>2</sup>
- Disrupt normal cellular processes & weaken immune defense<sup>3</sup>
- Deplete essential nutrients from body<sup>3</sup>
- GI Cancer<sup>3</sup>
- Long-term exposure: MS, PD, AD, MD, CA<sup>3</sup>
- Stunting in children<sup>4</sup>





# Polluted River in Bangladesh



#### **PURPOSE**

This systematic review will analyze the effects of prenatal lead exposure on the cognitive and physical development of infants and children in Bangladesh.



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#### METHODS

Study Designs: Prospective Cohort Studies, only

Inclusion Criteria:

Type: Lead exposure

Time of lead exposure: During fetal development

Setting: Bangladesh

Age outcomes are assessed: Birth to age 12

Health Outcomes: Stunting & cognitive scores

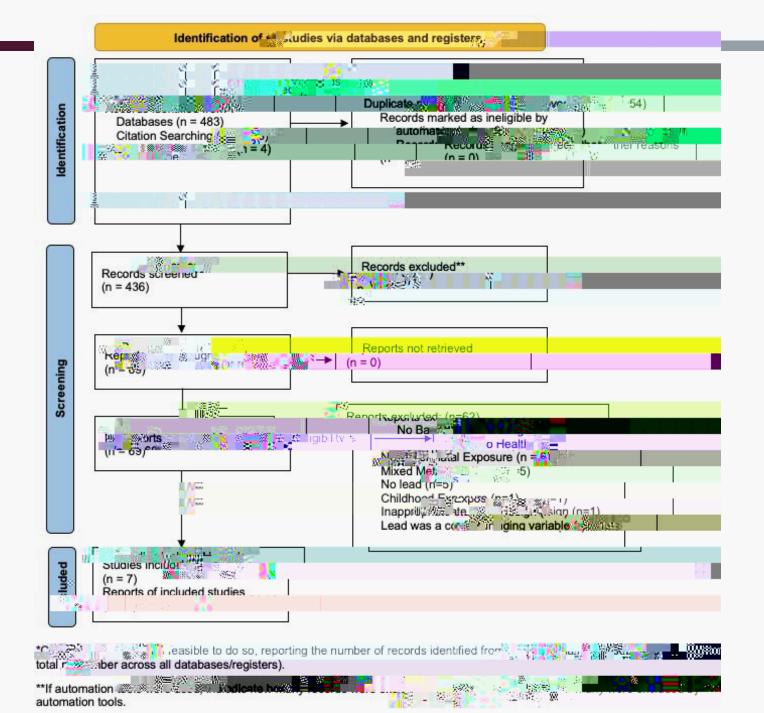
#### METHODS

#### Evidence Appraisal:

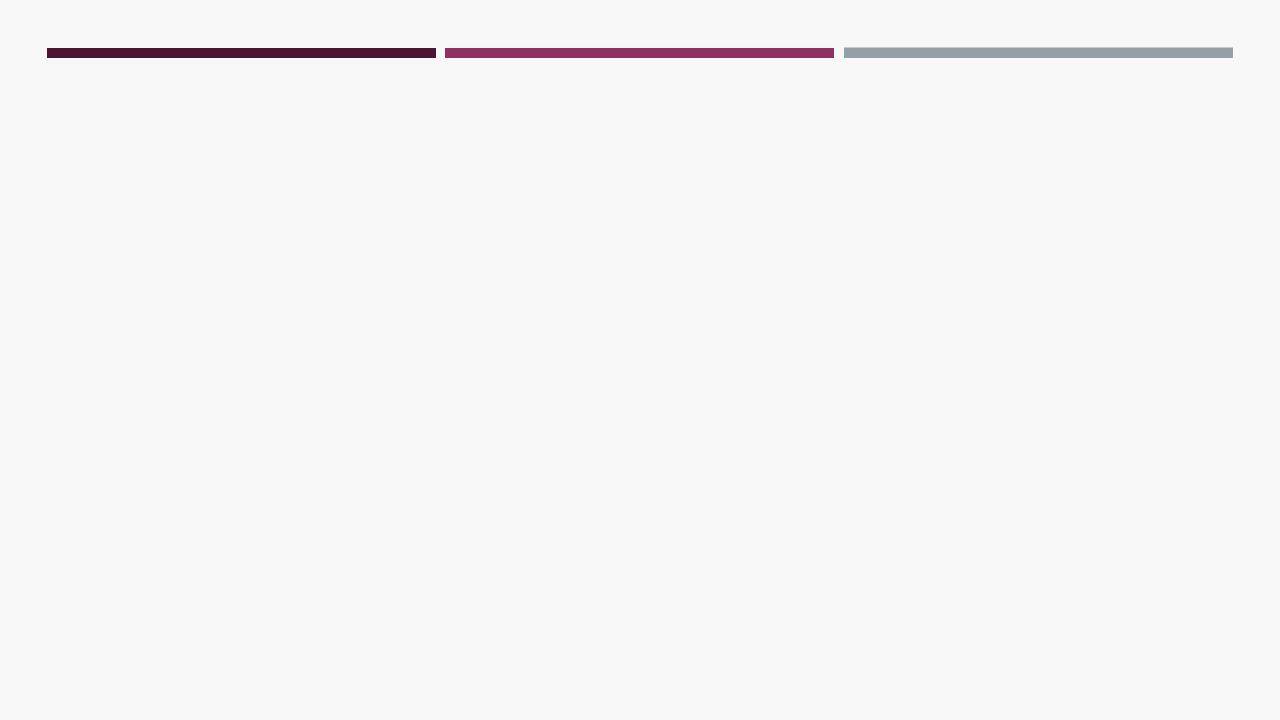
Studies were independently evaluated for methodological quality by two blinded reviewers using the S I G N (SIGN): C S T .

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#### RESULTS



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# RESULTS

#### STATISTICALLY SIGNIFICANT RESULTS

N between blood lead concentration and BSID cognitive scores<sup>7</sup>

in natural log cord blood lead in presence of stunting was associated with a 2.1 unit decrease in cognitive scores<sup>2</sup>

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#### CONCLUSION

#### High Quality Evidence Supports:

Association between prenatal lead exposure and:

# LIMITATIONS

#### FUTURE RESEARCH

Further research is needed to...

M the impact of maternal factors on prenatal lead exposure

#### CLINICAL RELEVANCE

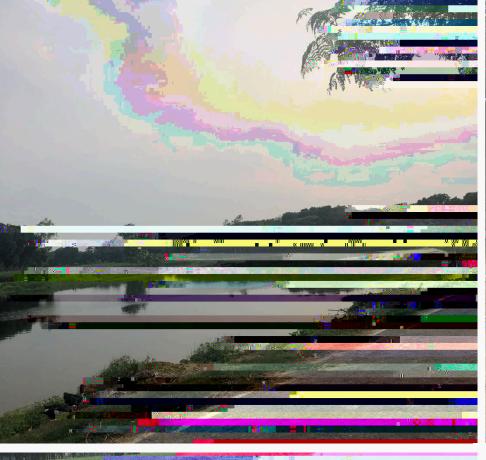
#### Physical Therapists in Bangladesh should...

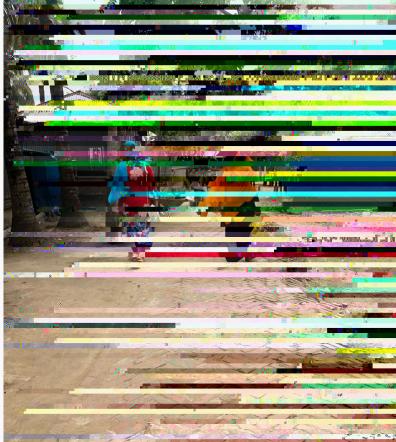
B of potential impacts of lead exposure

A cognitive and physical screening to children

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# PABNA, BANGLADESH PHO O PERMI<sup>SS</sup>ION GRAN ED

## REFERENCES

1. Gleason K, Shine JP, Shobnam N, et al. Contaminated turmeric is a potential source of lead exposure for children in rural Bangladesh. J

#### ACKNOWLEDGEMENTS

## Thank you!

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# Any Questions?

