

## Introduction

- An estimated 50 – 60 million Americans suffer from chronic sleep disorders which adversely affect their health.<sup>1</sup>
- Child abuse is a type of stressor associated with various aspects of sleep problems in adulthood.<sup>2</sup>
- An understanding of the mechanism by which child abuse affects sleep is necessary to provide targeted interventions.

## Aims

- To investigate if child abuse is associated with chronic sleep problems in adulthood in our sample.
- To determine if this association is **mediated** by **negative affect**, an **aversive mood state**.

## Study and Design

- Data Source:** Waves 1 (1995/1996) and 2 (2004 – 2005) of the MIDUS Study.
- Predictor:** child abuse (**sexual, physical, and emotional**) - measured using the the Childhood Trauma Questionnaire.
- Outcome:** chronic sleep problems (measured at Wave 2).
- Mediator:** negative affect (measured using the PANAS scale).
- Covariates:** age, sex, race, BMI, income, education, and marital status.

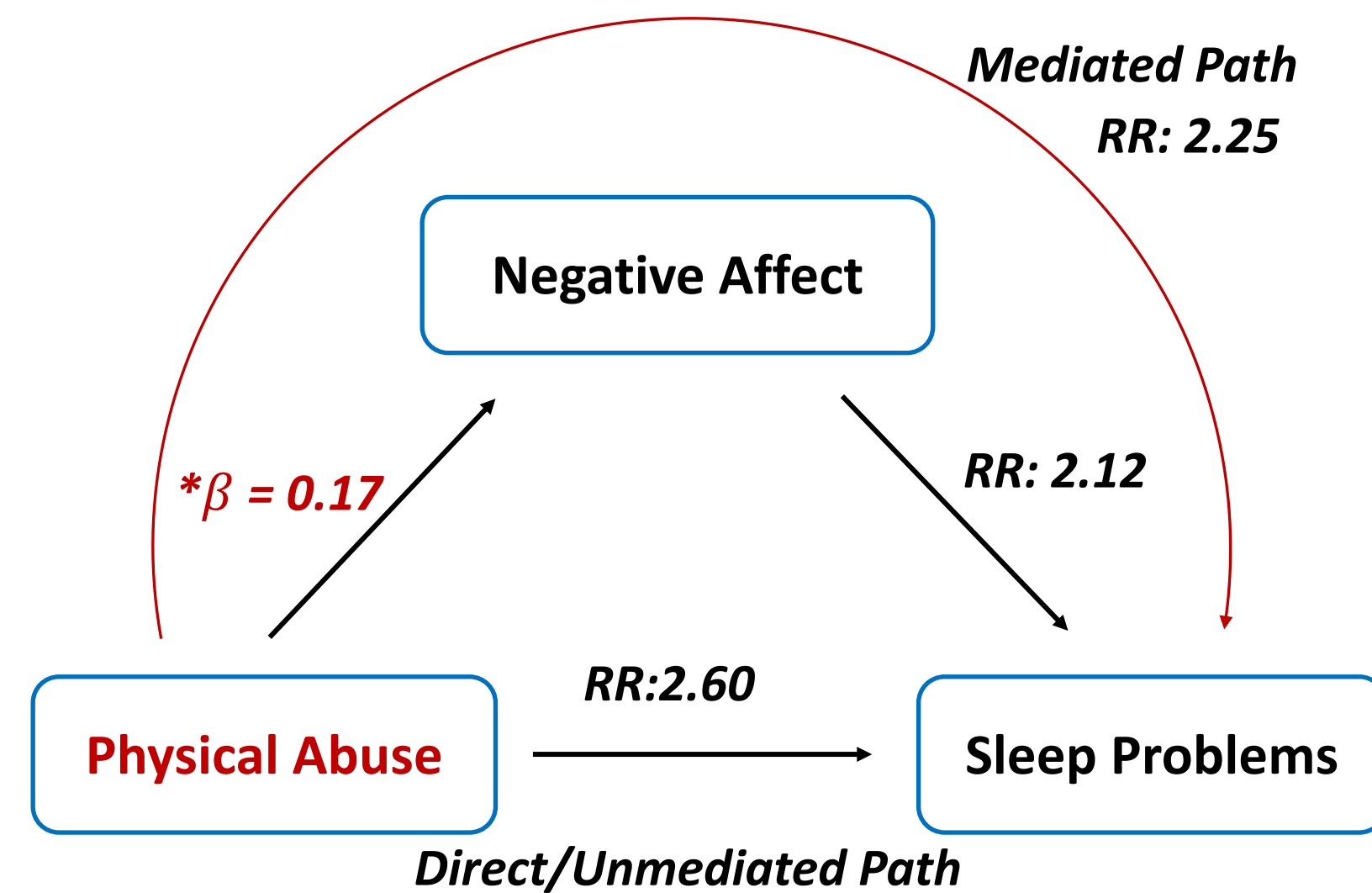
## Statistical Methods

- Three regression equations were estimated to assess for mediation.
- Imai's causal mediation analysis** was used to estimate the proportion of mediation.
- Poisson regression** estimated the risk of sleep problems as a function of abuse.

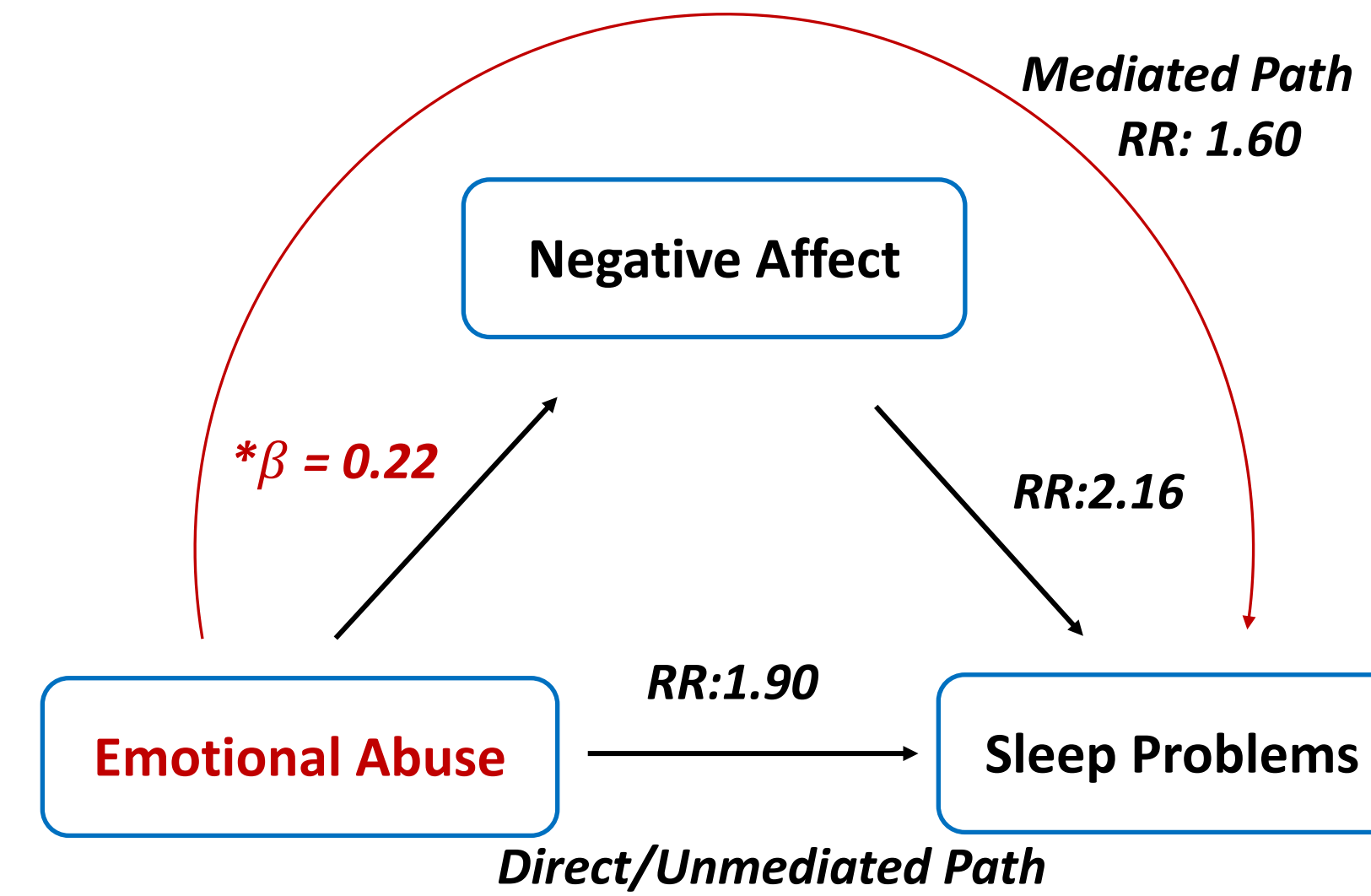
## Results

### Hypothesized Mediation Model with Relative Risks and Parameter Estimates.

**Fig 1a. (Proportion Mediated = 14%)**

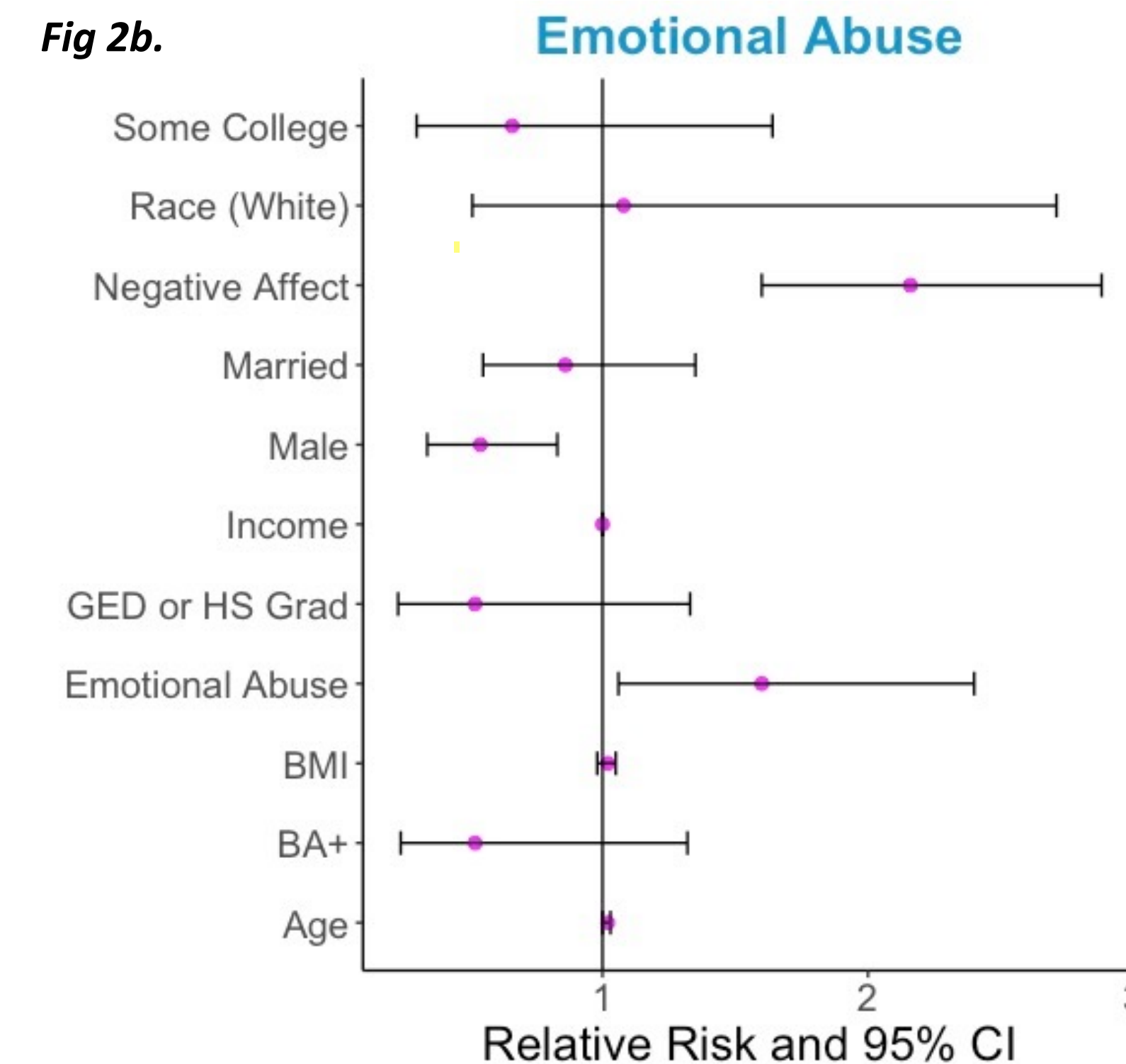
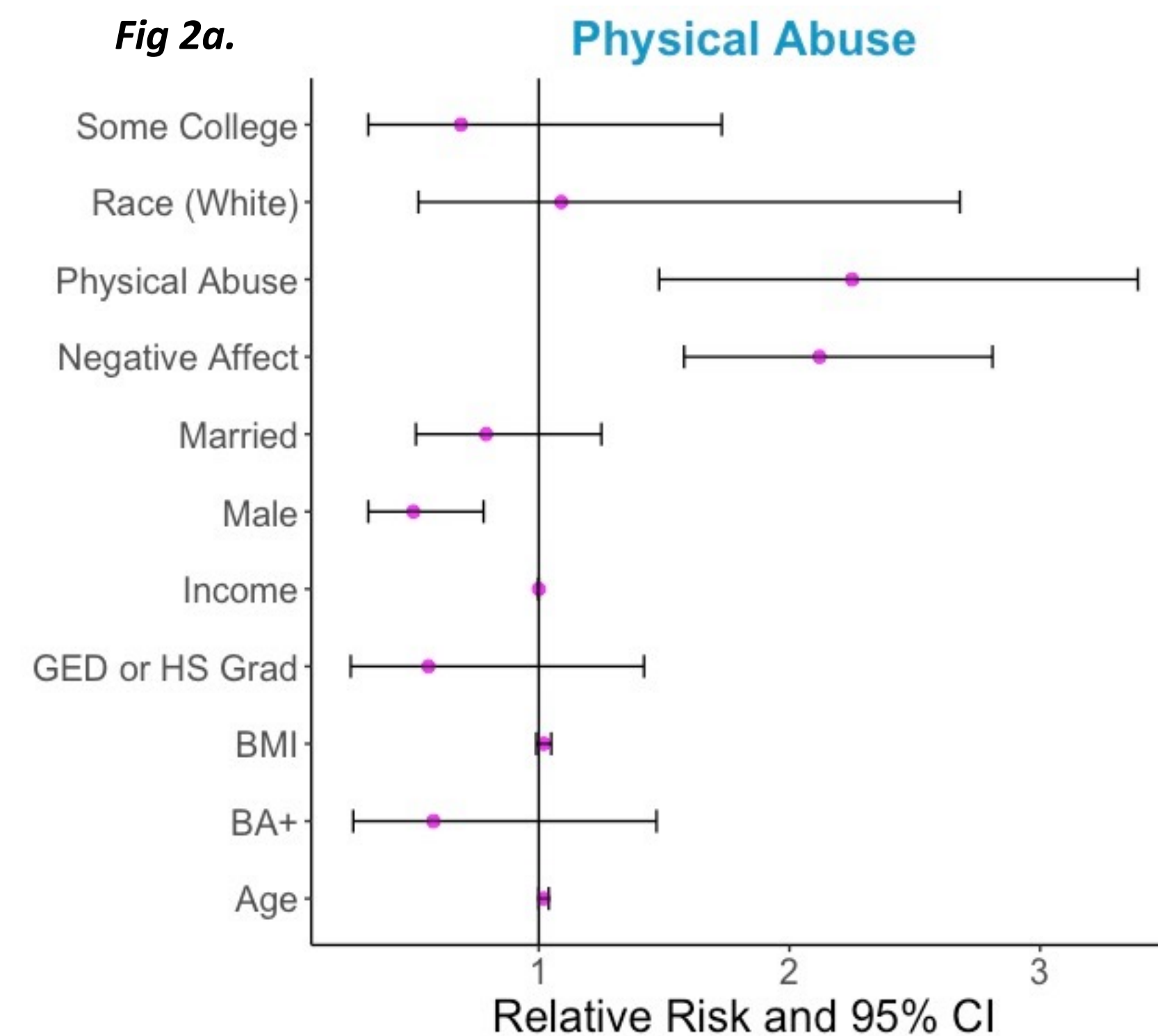


**Fig 1b. (Proportion Mediated = 27%)**



\*(The estimate for abuse predicting negative affect is unstandardized since the outcome is continuous.  $P < 0.05$  for all estimates).

### Relative Risks and 95% CIs for Child Abuse Predicting Sleep Problems in the Presence of Negative Affect



## Discussion

- The **prevalence** of sleep problems at Wave 2 was 11%
- Our study did not yield significant findings for sexual abuse.
- The association between emotional abuse, and physical abuse and sleep problems was **mediated by negative affect**.

## Study Implications

- A "trauma-informed" care should be developed for child abuse survivors<sup>3</sup> which should consider the role of negative affect.
- Adults with sleep problems should be assessed for child abuse, and negative affect.

## Strengths and Limitations

- The outcome variable did not indicate the specific sleep pathology. Further studies should investigate individual sleep problems.
- Longitudinal data** allowed us to establish **temporal ordering** of the exposure and the outcome.
- Our new findings have helped to **advance the extant literature** on adverse childhood experiences.

## Conclusion

- Child abuse is a serious life course event with several long-lasting effects, including sleep problems.
- Negative affect is an important mediator between child abuse and sleep problems.**

## References

- Committee on Sleep Medicine and Research. Sleep Disorders and Sleep Deprivation: An Unmet Public Health Problem. In: Colten HR, Altevogt BM, eds. National Academies Press (US) Copyright © 2006, National Academy of Sciences.; 2006.
- Chapman DP, Wheaton AG, Anda RF, et al. Adverse childhood experiences and sleep disturbances in adults. *Sleep Med.* Sep 2011;12(8):773-9. doi:10.1016/j.sleep.2011.03.013
- Kajeepeeta S, Gelaye B, Jackson CL, Williams MA. Adverse childhood experiences are associated with adult sleep disorders: a systematic review. *Sleep medicine.* 2015;16(3):320-330. doi:10.1016/j.sleep.2014.12.013