



# The contribution of health behaviors to educational inequalities in gastric high-grade dysplasia and gastric cancer

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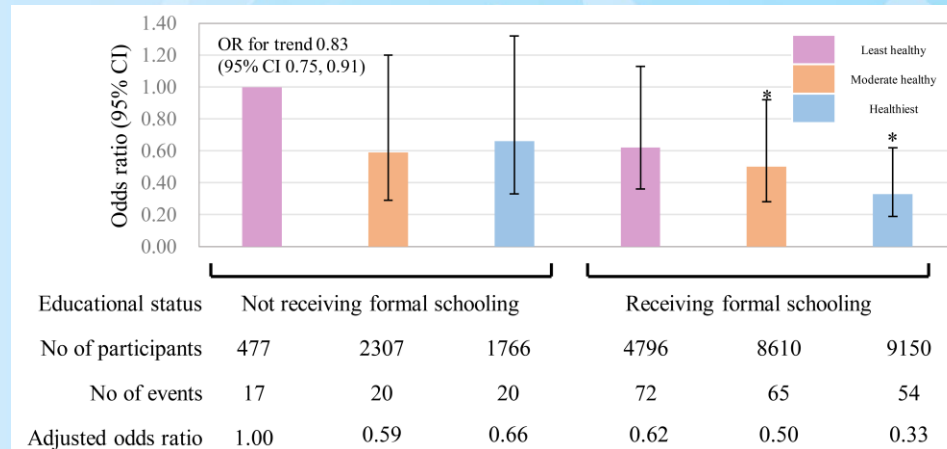
## Introduction

- Educational inequalities in gastric cancer (GC) have been well established and seen as a typical case of social disparities in cancer prevention.<sup>1</sup>
- A recent study in the Canadian population indicated that modifiable risk factors could explain 45.6% of socioeconomic inequalities in overall cancer morbidity and mortality.<sup>2</sup>
- It is plausible to expect that healthy lifestyle promotion could reduce gastric cancer burden from educational inequalities.

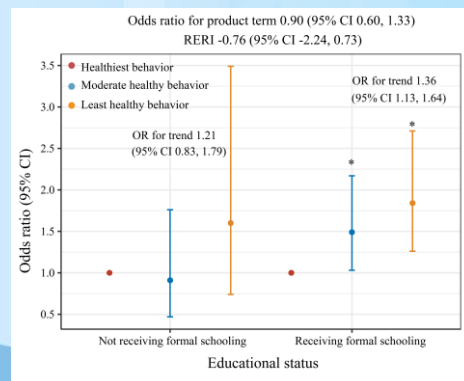
## Methods

- We used the baseline data from the intervention arm of a community-based, cluster-randomized endoscopic screening trial in China, totaling 27106 participants aged 40-69.
- A weighted score was constructed to measure health behaviors based on four lifestyle factors (smoking, alcohol drinking, fruit consumption, and foods preserved by salting).
- Logistic regression models were used to estimate the odds ratio (OR) with 95% confidence intervals (CIs) for the relationships among education, health behaviors, and HGD and GC.
- We included a product term of educational status and the category of health behavior score to estimate the multiplicative interaction. To quantify the additive interaction, we calculated the relative excess risk due to interaction and its 95% CI using the R "interactionR" package.
- We conducted causal mediation analysis using the method proposed by Imai et al.<sup>3</sup> in the R "mediation" package to quantify the mediation effect of health behaviors

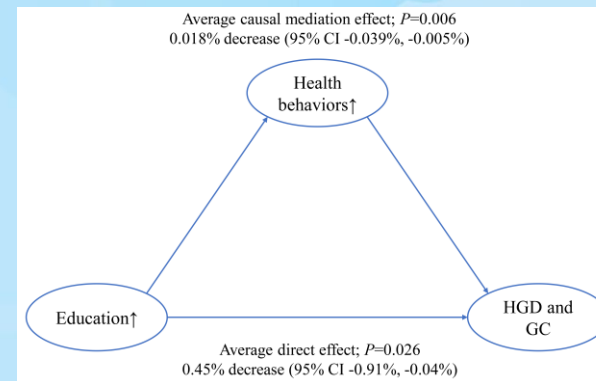
## Results



**Fig. 1 Joint associations of health behavior score and educational status with high-grade dysplasia and gastric cancer.** Error bars indicate confidence intervals. The asterisk indicates to be statistically significant. The OR for trend indicates the change in OR by one combined category change towards the healthiest in participants with formal schooling. No, number; OR, odds ratio; CI, confidence interval.



**Fig. 2 Associations of health behavior score with high-grade dysplasia and gastric cancer by educational status.** Error bars indicate confidence intervals. The asterisk indicates to be statistically significant. RERI, relative excess risk due to interaction; OR, odds ratio; CI, confidence interval.



**Fig. 3 The mediation model of the associations among educational status, health behavior score, and the diagnosis of high-grade dysplasia and gastric cancer.** HGD, high-grade dysplasia; GC, gastric cancer; CI, confidence interval.

## Conclusion

- Health behaviors mediated a small proportion of the educational inequalities in gastric high-grade dysplasia and gastric cancer.
- Living a healthy lifestyle could reduce the risk of gastric cancer. However, healthy lifestyle promotion alone might not reduce the educational inequalities in GC. This template has been configured to be the correct size for your poster display.

## Acknowledgments

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## References

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## Summary

- This study conducted interaction analysis and mediation analysis using baseline data from an endoscopic screening trial in China
- Health behaviors mediated a small proportion of the educational inequalities in gastric high-grade dysplasia and gastric cancer.

