The Impact of Peer Effect on Students' Consumption of Sugar-Sweetened Beverages

Ying Zhang, Peiyan Zhao, Yi Cui, Qiran Zhao*

College of Economics and Management, China Agricultural University, email:zhangyingcau@126.com

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Background

◆ The excessive intake of added sugars negatively affects human capital accumulation in children and adolescents. There is increasing evidence that sugar intake is approaching problematic levels among Chinese children and adolescents.

◆ China has begun to explore sugar-sweetened beverages (SSB) consumption interventions targeting children and adolescents in some regions. However, these regulations did not significantly reduce SSB purchases and sugar intake by children and adolescents.

◆ Besides family members, one of the most important social factors influencing children and adolescents' behavior and decision-making are peers.

◆ There is a lack of evidence on this issue among younger groups, highlighting the need to explore whether and how the peer effect influences SSB consumption in children and adolescents.

Objectives

Identify the impact of peer effect on students' consumption of SSB among Chinese children and adolescents:

——How peer's SSB consumption affect personal SSB consumption?
——And what is the mechanism of peer effect on students' consumption of SSB?
——Is there some heterogeneities about different grades and pocket money?

Data resource

☐ This study used the data of Health and Nutrition Panel survey (HNPS) conducted in Jining District, Ulanqab City, Inner Mongolia Autonomous Region in northern China from 2019 to 2020.

☐ After removing outliers and invalid questionnaires, we obtained 4,118 valid samples.

Estimating Model

➢ $Sugar = \beta_0 + \beta_1 \times Sugar_{Peer} + \beta_2 \times Sugar_{Previous\ year} + \beta_3\ C + \beta_4 D + \beta_5 U_j + \varepsilon$

➢ $Sugar_{Peer} = \gamma_0 + \gamma_1 \times NC\_score + \gamma_2\ C + \gamma_3 D + \beta_5 U_j + \nu$

■ We used the nutritional cognition of peers' parents (NC_score) as the IV. Where $Sugar$ is the standardized individual sugar intake from SSBs, while $Sugar_{Peer}$ refers to the standardized sugar intake of peers. $Sugar_{Previous\ year}$ refers to the standardized individual sugar intake from SSBs over the last year to control for past consumption habits. C represents a series of characteristic variables at the individual level, including gender, age, boarding status, number of siblings, and pocket money indicators.

Results

Table1 Estimated effects of peer sugar intake on individual standardized sugar intake from SSBs.

Variable	OLS	2SLS
Standardized peer's sugar intake	0.102***	0.393***
Control variables	Yes	Yes
School effects	Yes	Yes
Observations	4118	4,118

Table2 Estimated effects of peer sugar intake on individual standardized sugar intake from different types of SSBs.

Variable	Carbonated beverages	Juice beverages
Standardized peer's sugar intake	0.460***	0.426**
Control variables	Yes	Yes
School effects	Yes	Yes
Observations	4118	4,118

Table3 Estimates of the peer's sugar intake on student's standardized sugar intake from the more popular peer sample.

Variable	Sugar Intake from all types of SSBs	Sugar Intake from Carbonated beverages
Standardized peer's sugar intake	0.102***	0.393***
Observations	2346	2346

Table4 Estimated effect of peer sugar intake on individual standardized sugar intake for the different school or the amount of pocket money.

Variable	Primary School	Junior Middle School
Standardized peer's sugar intake	0.380**	0.316**
Observations	2,573	1,545
Variable	Have pocket money	Have no pocket money
Standardized peer's sugar intake	0.547**	0.251
Observations	2,016	2,102

Conclusions

● We addressed the endogeneity problem to some extent by examining the data collected in both survey waves and implementing IVs in our analysis. Our findings suggest that peers' SSB consumption behavior is an essential factor influencing sugar intake in children and adolescents.

● Our results support the idea that star peers had more substantial demonstration effects. It has necessary guidance and reference value for implementing the intervention plan in the school. And the interventions based on peer effects start better in lower-grade students.

● The findings confirm the feasibility of home-based cognitive interventions. It is also important to note that parents should restrict the amount and use of pocket money for children and adolescents