

Can a short video about sugary drinks and nutrition labels help school students in China choose drinks with less sugar?

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Registration date 26/08/2026	Overall study status Completed	☐ Statistical analysis plan ☐ Results
Last Edited 25/08/2026	Condition category Other	☐ Individual participant data ☒ Record updated in last year

Plain English summary of protocol

Background and study aims

Sugary drinks can contribute to high sugar intake among children and adolescents. Young people may also find it difficult to understand how much sugar a drink contains from the information provided on nutrition labels.

This study aims to find out whether a brief school-based educational video about sugary drinks, their possible health effects and nutrition labels could influence students' immediate choice between a full-sugar and a low-sugar fermented milk drink. It also aims to examine which beverage characteristics, prices and sugar-related information students considered when choosing a beverage, whether their stated choices differed from their subsequent actual beverage selections, and how their choices changed across the different stages of the study.

Who can participate?

Students in grades 4 and 5 of primary school and grades 7 and 8 of junior secondary school in selected classes at six participating schools in Ruyang County, Henan Province, China, could take part. Students were generally approximately 9–14 years old, although eligibility was based on school grade rather than a strict age cut-off. Both boys and girls could participate, and no particular medical condition was required.

What does the study involve?

School classes, rather than individual students, were randomly assigned to one of two groups. Twenty-four classes participated, with 12 classes assigned to each group.

Before watching a video, students in both groups stated which of two fermented milk drinks they preferred: a full-sugar drink or a low-sugar drink.

Students in the educational-video group watched a four-minute animated video explaining how to identify sugary drinks, how high sugar intake can affect health, how to understand nutrition labels and how to calculate the approximate amount of sugar in a bottle. Students in the comparison group watched a three-minute animated video about protecting eyesight. The comparison video did not include information about beverages, sugar, nutrition labels, food choices, diet, weight management or purchasing decisions.

After watching the video, students in the educational-video group stated their beverage choice

again. Students in both groups then made an actual beverage selection between the full-sugar and low-sugar fermented milk drinks.

All students subsequently completed instructions, a practice question and ten additional choice questions comparing beverages with different characteristics, prices and sugar-related information. Each question also allowed students to choose no beverage. Students then completed a classroom questionnaire, and a family questionnaire was completed at home with help from a parent or carer.

The selected drinks were distributed only after all classroom study activities had been completed. The supervised classroom session lasted approximately two class periods, or 1.5 hours.

The university ethics board waived active parental consent because the study was considered to involve minimal risk. Under the approved procedure, designated classroom teachers provided written proxy consent for participation and data collection, and each student provided verbal assent before taking part.

What are the possible benefits and risks of participating?

There was no guaranteed direct personal benefit from taking part. The educational video may have helped students understand sugary drinks, the possible health effects of high sugar intake and how to read nutrition labels. Students in the comparison group received information about protecting their eyesight.

The videos, questionnaires and beverage-choice activities were considered to involve minimal risk. Participation required approximately 1.5 hours of classroom time and may have caused minor inconvenience, boredom or tiredness.

The fermented milk drinks were commercially available products. As with other milk-containing products, they might not have been suitable for students with an allergy or intolerance to milk ingredients. No medical tests, blood samples or invasive procedures were involved.

Where is the study run from?

The study was conducted in six primary and junior secondary schools in Ruyang County, Luoyang, Henan Province, China. It formed part of the 2022 Health and Nutrition Panel Survey, which was coordinated by China Agricultural University.

When is the study starting and how long is it expected to run for?

September 2022 to October 2022.

Who is funding the study?

1. The National Natural Science Foundation of China.
2. The 2115 Talent Development Program of China Agricultural University.

Who is the main contact?

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Study information**Scientific Title**

Effects of a brief school-based health literacy video about the harms of sugar-sweetened beverages and interpretation of nutrition labels, compared with an eyesight-protection video, on the actual selection of a full-sugar fermented milk drink and stated preferences for beverage attributes among students in grades four, five, seven, and eight in China: a two-arm class-level cluster-randomised controlled trial

Study objectives

1. To evaluate the effect of a brief school-based health literacy intervention, compared with an eyesight-protection attention control, on the probability that children and adolescents select a full-sugar rather than a low-sugar fermented milk drink in a redeemable actual beverage choice.
2. To examine whether the intervention alters children's and adolescents' stated preferences for beverage attributes in a discrete choice experiment, including the direction and relative importance of attribute preferences and intervention-by-attribute differences.
3. To assess potential hypothetical bias by examining the consistency between stated beverage choices and redeemable actual beverage selections within each trial group.
4. To estimate willingness to pay for the beverage attribute levels included in the discrete choice experiment.
5. To characterise sequential beverage-choice patterns within the intervention group and examine the participant characteristics associated with those patterns.
6. To examine whether intervention effects differ across participant subgroups.

Ethics approval required

Ethics approval required

Ethics approval(s)

Approved 05/04/2022, Clinical Research Ethics Committee of China Agricultural University
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chehuilian@cau.edu.cn), ref: CAUHR-20220405

Primary study design

Interventional

Allocation

Randomized controlled trial

Masking

Open (masking not used)

Control

Active

Assignment

Parallel

Purpose

Prevention

Study type(s)

Health condition(s) or problem(s) studied

Unhealthy sugar-sweetened beverage choices among school-aged children and adolescents.

Interventions

Allocation and setting

This is a school-based, two-arm, cluster-randomised controlled trial with 1:1 allocation. Classes are the unit of randomisation. An independent researcher uses anonymised school identifiers to randomly select six schools from the eligible-school list, stratified by urban-rural location and school level. Within each school, two classes are randomly selected from each of the two target grades. One class per grade is allocated to the intervention group and the other to the control group, producing 24 classes in total, with 12 classes in each group. The independently generated allocation sequence is released to the on-site team only after school and class selection has been completed.

Intervention group

Students in intervention classes watch a single 4-minute animated health literacy video developed for children and adolescents. Using animation and simple language, the video explains how to identify sugar-sweetened beverages, how high sugar intake can harm health, how to interpret nutrition labels, and how to convert sugar content reported per 100 mL into the approximate amount of sugar per bottle. The video is shown without additional instruction, discussion, or local adaptation.

Control group

Students in control classes watch a single 3-minute animated video on eyesight protection. This serves as a school-health attention control and contains no information about beverages, sugar, nutrition labels, food choice, diet, weight management, or purchasing decisions. The video is

shown without additional instruction, discussion, or local adaptation.

Delivery and common study procedures

The procedures take place in supervised classrooms during an ordinary school day. Intervention and control classes within each school complete the procedures in parallel during the same fieldwork visit to reduce opportunities for between-group spillover. Each class is supervised by its classroom teacher and one trained enumerator. Paper-based classroom procedures take approximately two class periods, or 1.5 hours in total.

Before viewing the assigned video, students in both groups make a stated choice between a full-sugar fermented milk drink containing 15.0 g sugar per 100 mL and a low-sugar fermented milk drink containing 1.3 g sugar per 100 mL. After watching the health literacy video, intervention-group students make a second stated choice between the same two products and then make a redeemable actual beverage selection. Control-group students proceed directly from the eyesight-protection video to the redeemable actual beverage selection and do not complete a post-video stated choice.

The real choice experiment and discrete choice experiment are outcome-measurement procedures rather than components of the health literacy intervention. After the actual beverage selection, all students complete standardised discrete-choice instructions, a warm-up task, a standardised cheap-talk script, and ten formal discrete choice tasks. Each task requires a choice between two beverage alternatives and a “No beverage” option. Actual beverage selections are recorded before the discrete choice experiment, but the selected beverages are distributed only after all classroom procedures have been completed. Students then complete an individual questionnaire in class, and a family questionnaire is completed at home with assistance from a parent or carer.

Intervention Type

Behavioural

Primary outcome(s)

1. Selection of a full-sugar fermented milk drink at the redeemable actual beverage selection measured using a participant-level binary outcome coded 1 for the selection of the full-sugar fermented milk drink and 0 for the selection of the low-sugar fermented milk drink at the same supervised classroom session, after the assigned video and before the discrete choice experiment
2. Stated preferences for prespecified beverage attributes in the discrete choice experiment, outcomes comprise mean preference-utility coefficients for beverage profile (combining beverage type and sugar content), price, total sugar label, and the World Health Organization advisory, together with intervention-by-attribute coefficients measured using participants' choices across ten discrete choice tasks, at the same supervised classroom session, after video exposure and the real choice experiment and before distribution of the selected beverages

Key secondary outcome(s)

1. Paired difference between stated choice and redeemable actual beverage selection in the real choice experiment as an assessment of potential hypothetical bias measured using a within-participant comparison of binary full-sugar versus low-sugar fermented milk drink choices at the pre-video stated choice and subsequent redeemable actual beverage selection in the control

group, and the post-video stated choice and subsequent redeemable actual beverage selection in the intervention group, with both paired comparisons conducted during the same supervised classroom session

2. Marginal willingness to pay for beverage attribute levels in the discrete choice experiment measured using the negative ratio of the corresponding group-specific attribute-level coefficient to the group-specific mean price coefficient estimated from the mixed logit model, expressed in Chinese yuan per 500 mL bottle, at completion of all ten discrete choice tasks during the same supervised classroom session, after the assigned video and the real choice experiment and before distribution of the selected beverages

3. Sequential beverage-choice patterns within the intervention group measured using the classification of the eight possible sequences across pre-video stated choice, post-video stated choice and actual beverage selection into six mutually exclusive patterns: sustained healthy shift, stable healthy preference, stable unhealthy preference, unenacted healthy shift, delayed healthy shift and other choice patterns, at the three sequential stages of the real choice experiment during the same supervised classroom session: pre-video stated choice, post-video stated choice immediately after video exposure and subsequent actual beverage selection

Completion date

28/10/2022

Eligibility

Key inclusion criteria

Cluster-level criteria:

1. Primary or junior secondary schools located in Ruyang County, Luoyang, Henan Province, China.
2. Schools with at least 300 enrolled students and sufficient enrolment to provide at least two classes in each target grade.

Participant-level criteria:

3. Male or female students enrolled in grades 4 or 5 of primary school or grades 7 or 8 of junior secondary school at one of the six participating schools.
4. Students enrolled in a randomly selected eligible class.
5. Students in the target grades were approximately 9–14 years old at enrolment; eligibility was determined primarily by school grade rather than by a strict age cut-off.
6. Written proxy consent was provided by the designated classroom teacher under the ethics-approved procedure, and verbal assent was obtained from the student before enrolment.

Healthy volunteers allowed

No

Age group

Child

Lower age limit

9 Years

Upper age limit

14 Years

Sex

All

Total final enrolment

1302

Key exclusion criteria

Cluster-level criteria:

1. Village-level teaching points and schools with fewer than 300 enrolled students were excluded because they generally could not provide at least two classes in each target grade.
2. Schools unable to provide at least two classes in each target grade were not eligible.

Participant-level criteria:

3. Students in grades 1–3 of primary school were not eligible because they were considered too young to complete the questionnaire and choice tasks reliably.
4. Students in grade 6 of primary school or grade 9 of junior secondary school were not eligible because these were final-year grades with heavier academic demands.
5. Students for whom the ethics-approved proxy consent and student assent procedures were not completed were not enrolled.

Date of first enrolment

26/09/2022

Date of final enrolment

27/09/2022

Locations**Countries of recruitment**

China

Sponsor information**Organisation**

China Agricultural University

ROR

<https://ror.org/04v3yww14>

Funder(s)**Funder type****Funder Name**

National Natural Science Foundation of China

Alternative Name(s)

Chinese National Science Foundation, Natural Science Foundation of China, National Science Foundation of China, NNSF of China, NSF of China, National Nature Science Foundation of China, Guójiā Zìrán Kēxué Jījīn Wěiyuánhùi, , NSFC, NNSF, NNSFC

Funding Body Type

Government organisation

Funding Body Subtype

National government

Location

China

Funder Name

2115 Talent Development Program of China Agricultural University

Alternative Name(s)

, , CAU

Funding Body Type

Government organisation

Funding Body Subtype

Universities (academic only)

Location

China

Results and Publications

Individual participant data (IPD) sharing plan**IPD sharing plan summary**

Not expected to be made available