

Supplementary Material

An mHealth-based school health education system designed to scale up salt reduction in China (EduSaltS): A development and preliminary implementation study

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1 Supplementary Table 1

Design of the EduSaltS and the unpinned studies

Content	School-EduSaltS study ^{1,2}	AIS study ^{3,4}	EduSaltS study
Full name of the study	A school-based education programme to reduce salt intake in children and their families	An application-based programme to reinforce and maintain lower salt intake	School-based education programme to reduce salt: Scaling-up in China
Study purpose	Determine whether a school-based education programme targeted at schoolchildren could lower salt intake in children and their families	Develop a new approach via App to reinforce and maintain lower salt intake in schoolchildren and their families for long term	Refine scale-up package to lower salt intake in both children and families and achieve sustainability by integrating the package into the existing school health education system
Study design	Cluster Randomized Controlled Trial (cRCT)	cRCT	Implementation study with mixed-method process evaluation and before-after effectiveness comparison
Name of intervention	School-EduSalt	AppSalt	EduSaltS
Key feature of the intervention	Offline intervention package for salt reduction delivered by research team during the school's usual health education lessons	mHealth-based salt reduction intervention embedded in a routine health education course, delivered by school under close support and supervision by research team	mHealth-based system supporting scaling up in real world, with relatively more flexible and interesting intervention components, establishment of facilitating policies and environment, clear role-setting and performance evaluation, etc.
Setting	Primary schools in a prefecture-level city in China (Changzhi)	Primary schools in one provincial capital and two prefecture-level cities in China (Shijiazhuang, Luzhou and Yueyang)	Primary schools in three prefecture-level cities in China (Zhenjiang, Ganzhou and Qinhuangdao)
Study population	Grade 5 students (aged 10-11 years) & adult family members	Grade 3 students (aged 8-9 years) & adult family members	Grade 3 students (aged 8-9 years) & family members
Participants and sample size	280 children & 560 adult family members from 28 schools (10 children and 20 adults per school, 2 adults per child)	594 children & 1188 adult family members from 54 schools (11 children and 22 adults per school, 2 adults per child)	Intervention: All about 80k students at grade 3 and their family members Effectiveness evaluation: 520 children & 520 adults from 20 schools, 26 children and 26 adults each school)
Randomization	1:1 school randomization into intervention and control	1:1 school randomization into intervention and control in each city	Intervention: no randomization Effectiveness evaluation: sampling from Zhenjiang and Ganzhou, 10 schools each.
Intervention duration	1 school term (≈ 3.5 months)	2 school terms (≈ 1 year)	2 school terms (≈ 1 year)
Primary outcomes	The difference between groups in the change in salt intake measured by 24-hour urinary sodium excretion	The difference between groups in the change in salt intake measured by 24-hour urinary sodium excretion	Implementation: registration rate, completion rate for each online class, and before-after change in KAP. Effectiveness: Before-after change in KAP and salt intake measured by 24-hour urinary sodium excretion
Study period	2013 - 2014	2017 - 2021	2019 - 2023
Comparative effectiveness	Salt reduction: 1.9 g/day (1.3-2.6, P<0.001) in children; 2.9 g/day (2.2-3.7, P<0.001) in adults. SBP lowering: 0.8 mmHg (-1.5-3.0, P=0.51) in children; 2.3 mmHg (0.04-4.5, P<0.05) in adults.	Salt reduction: 0.25 g/day (-0.12-0.61, P=0.18) in children; 0.82 g/day (0.4-1.24, P<0.001) in adults. SBP lowering: 0.76 mmHg (-0.86-2.37, P=0.36) in children; 1.64 mmHg (0.27-3.01, P=0.02) in adults.	/

¹ He FJ, Wu Y, Ma J, et al. A school-based education programme to reduce salt intake in children and their families (School-EduSalt): protocol of a cluster randomised controlled trial. *BMJ Open* 2013; 3(7).

² Li X, Jan S, Yan LL, et al. Cost and cost-effectiveness of a school-based education program to reduce salt intake in children and their families in China. *PLoS One* 2017; 12(9): e0183033.

³ He FJ, Zhang P, Luo R, et al. An Application-based programme to reinforce and maintain lower salt intake (AppSalt) in schoolchildren and their families in China. *BMJ Open* 2019; 9(7): e027793.

⁴ He FJ, Zhang P, Luo R, et al. App based education programme to reduce salt intake (AppSalt) in schoolchildren and their families in China: parallel, cluster randomised controlled trial. *Bmj* 2022; 376: e066982.

2 Supplementary Table 2

Framework of EduSaltS following the WHO conceptual framework for developing a scaling-up strategy

Components	Definition in WHO conceptual framework	Key points in EduSaltS
Five core elements		
Innovation	<p>Refer to scaling-up interventions and/or other practices</p> <p>Attributes:</p> <ul style="list-style-type: none"> • Credibility • Observability • Relevance • Relative advantage • Ease of transfer/installation • Compatibility • Testability 	<p>The innovation (EduSaltS) is an mHealth-based primary school health education system which can (semi-)automatically deliver a routine health education course by engaging all the schools, students and their families in the course and parallel online/offline activities with the purpose of improving their healthy knowledge and behaviours including salt reduction in China.</p> <ul style="list-style-type: none"> • Credibility: Based on evidence (e.g. findings from previous studies) and official guidelines, all the education materials and algorithms should pass rigorous review by authorities or tested by pilot and continuous use. • Observability: All intervention activities are visible and participatory with a real-time performance evaluation, which can help the progress management and performance review. • Relevance: Integrating salt reduction into routine health education. Not only promoting health education in schools, but also benefiting children's and parents' health. • Relative advantage: Delivering a standardized and quality health education course in the absence of qualified health education teachers and textbook. Being implemented as a school course, and supported by the empowered schoolchildren, health knowledge and skills can be disseminated to all the children's families in short term. Being equipped with abundant materials, tools and features to facilitate knowledge learning, behaviours change and scale-up. • Ease of transfer/installation: The online platform will be developed based on WeChat, the most popular social network platform in China, so that it can be easily installed by scanning QR code or searching the Chinese name of the application on WeChat without considering issues regarding operating system compatibility and mobile phone brand and version adaptation. The system upgrade can complete automatically without re-installation and active update. All the materials and sample designs supporting offline activities should be available online. The education materials should be applicable to different users. • Compatibility: EduSaltS will meet the needs of all stakeholders as long as it is easy and not too much time-consuming. WeChat application can adapt to both Android and iOS in almost all devices. Various materials should be developed for different scenes (campus, canteen, classes, and families) and different populations, especially for those who have difficulty in using smartphone or WeChat applications. • Testability: The correctness of the algorithms of EduSaltS, the operation of the system, and the effectiveness in improving the knowledge and skills should be testable.
User organizations	<p>Refer to the organization(s) or institution(s) that seek to or are expected to adopt and implement the innovation</p> <p>Attributes:</p> <ul style="list-style-type: none"> • Perceived need • Implementation capacity • Timing and circumstances 	<p>User organizations include schoolchildren and families, schools, education/health authorities at different levels in different regions.</p> <p>Perceived need:</p> <ul style="list-style-type: none"> • Both children and their (grand-)parents need to develop a healthy lifestyle, including eating less salt, for themselves and for their parents and children. • Schools are required by government to deliver high quality health education course but lack standard textbook, qualified teachers, and performance evaluation. The innovative course can help complete this task with high quality and minimum input and improve the healthy image of the schools. • Education/health authorities are responsible for the implementation and effect of the health education course. <p>Implementation capacity:</p> <ul style="list-style-type: none"> • Education/health authorities are responsible for implementation of school health education and will make the decision if EduSaltS could be used to deliver a health education course. If yes, they would like to issue a notice/document instructing the subordinated region or schools to launch a mandatory use of EduSaltS. • The capacity needed for a school in delivering EduSaltS is low. Classroom and bulletin board are necessary; loudspeaker, video players and computers are preferable and available for most schools even in rural areas. However, an manager client named EduSaltS Manager should be developed to support government officers, schoolmasters and headteachers in supporting and supervising the implementation of the innovative course. There is no difficulty in using a WeChat application for the potential users of the manager client. • Nowadays, nearly all the parents of grade-three primary school students possess a smartphone and can use WeChat applications, but this is not the case for grandparents, especially in rural area. For schoolchildren who live with their grandparents may have some difficulties in using a smartphone, but this is turning not to be a problem as more and more schools can only provide online classes during the epidemic of COVID-19. However, backup plan of providing offline lessons should be available for two reasons: meeting the needs of (grand-)parents who cannot

		<p>use WeChat application and providing schools an opportunity to deliver the course at school in parallel to empower the students better.</p> <ul style="list-style-type: none"> • Grade-three students are the target children who will receive the designated health education and practice through EduSaltS. This is because they are more disciplined and with less study load compared with other age groups. The students will be empowered the role of leading family salt reduction and should be equipped with relevant knowledges learnt in school and/or at home. • The EduSaltS should be embedded with pop-up text, pictures, and videos to improve the capacities of using the app and materials, and clarifying responsibilities, requirements, procedures, and timing for different users.
		<p>Timing and circumstances:</p> <ul style="list-style-type: none"> • Designed as a health education course, the core online/offline lessons together with the ancillary examination and activities are automatically released once a week through EduSaltS app, and last for 2 school terms (one year). • Some offline activities such as poster posting and school/class-level activities will be released/required in the EduSaltS Manager client regularly as mandatory or optional tasks. • Some temporary activities and surveys, such as before-after examination or survey on saltiness of school canteen foods will be issued through an Announcement module occasionally be the national team. • Some functions such as FoodSwitch, Knowledge Competition, and Salt Intake Monitor will be available all the time, but with limited use to avoid watching screen too long for students. • All the activities mainly take place at home and school (classroom, campus, canteen, etc.)
Environment	It refers to conditions and institutions that are external to the user organization but fundamentally affect the prospects for scaling up	<ul style="list-style-type: none"> • School health education is a mandatory course in China. The central government clearly puts forward the requirements of strengthening talent training, clarifying health education content, ensuring curriculum hours and establishing a sound performance evaluation through “Guidelines for Health Education in Primary and Secondary Schools” (http://www.gov.cn/gongbao/content/2009/content_1310690.htm), “Opinions on Comprehensively Strengthening and Improving School Health and Health Education in the New Era” (http://www.gov.cn/zhengce/zhengceku/2021-09/03/content_5635117.htm), and other documents. However, the dilemma faced by school health education still exists: usually taught by music or physical education teachers who have not received systematic health education training; using nonuniform textbook or materials; often replaced by mathematics, Chinese and other courses because it is not a subject of entrance examination; and there is no systematic performance and effectiveness evaluation. • Meanwhile, excessive salt intake is the first dietary risk which leads to over 1.5m death in China. Action should be taken to shift the taste for salt from childhood and cover all families. • In addition, the ultimate purpose of school health education is to cultivate healthy behaviours of children, which obviously needs the support and engagement of their families and schools due to many behaviours or habits like eating salty foods are determined by their parents. • The disciplined and cooperative structure of schools make it more likely for students’ parents to comply with the requirements of school for knowledge learning and behavior change. In China, children seem to have bigger influence on their families due to the implementation of one-child policy for many years.
Resource team	It refers to the individuals and organizations that seek to promote and facilitate wider use of the innovation Attribute:	<ul style="list-style-type: none"> • Leadership and credibility: The EduSaltS programme will be led by Chinese Centre for Health Education (CCHE) and The George Institute for Global Health (TGI) China office. CCHE is the unique national agency in charge of public and school health education, while TGI China team is experienced in salt reduction and deliver intervention through mHealth technology. The steering consultant committee covers experts from salt reduction, hypertension and cardio-cerebrovascular diseases, epidemiology, public health, food and nutrition, health education and promotion, biostatistics, and health economics. • Skills: Equipped with skills in the development of mHealth-based intervention, training, management, research, advocacy, etc. • Experience: Many years of experience in carrying out school-based health education programmes and developing health education materials. • Size and resources: This programme also involve different level administrative agencies and people (e.g. national, provincial, municipal, district) from health and education sectors including schools in the development, implementing and evaluation process. They are also stakeholders of school health education and have many experiences and resources. • Stability: More than 5 years close collaboration between TGI and CCHE, and with the IT developing team - Beihang university
Scaling-up strategy	It refers to the plans and actions necessary to fully establish the innovation in policies, programmes and service delivery	<ul style="list-style-type: none"> • The strategy for scaling up is to institutionalize the EduSaltS programme as a routine school health education, at least for grade-3 students, starting from 3 cities and expanded to the whole nation. To expand the innovative health education to all school students at different grades, the education contents should be updated as required by the Guidelines for Health Education in Primary and Secondary Schools and a special content targeting a leading risk factor, like salt reduction for grade 3, should be considered. • In EduSaltS programme, the strategy to cover the public is “small hands leading big hands” or “children to parents” model. As an innovative one-year health education course, EduSaltS will

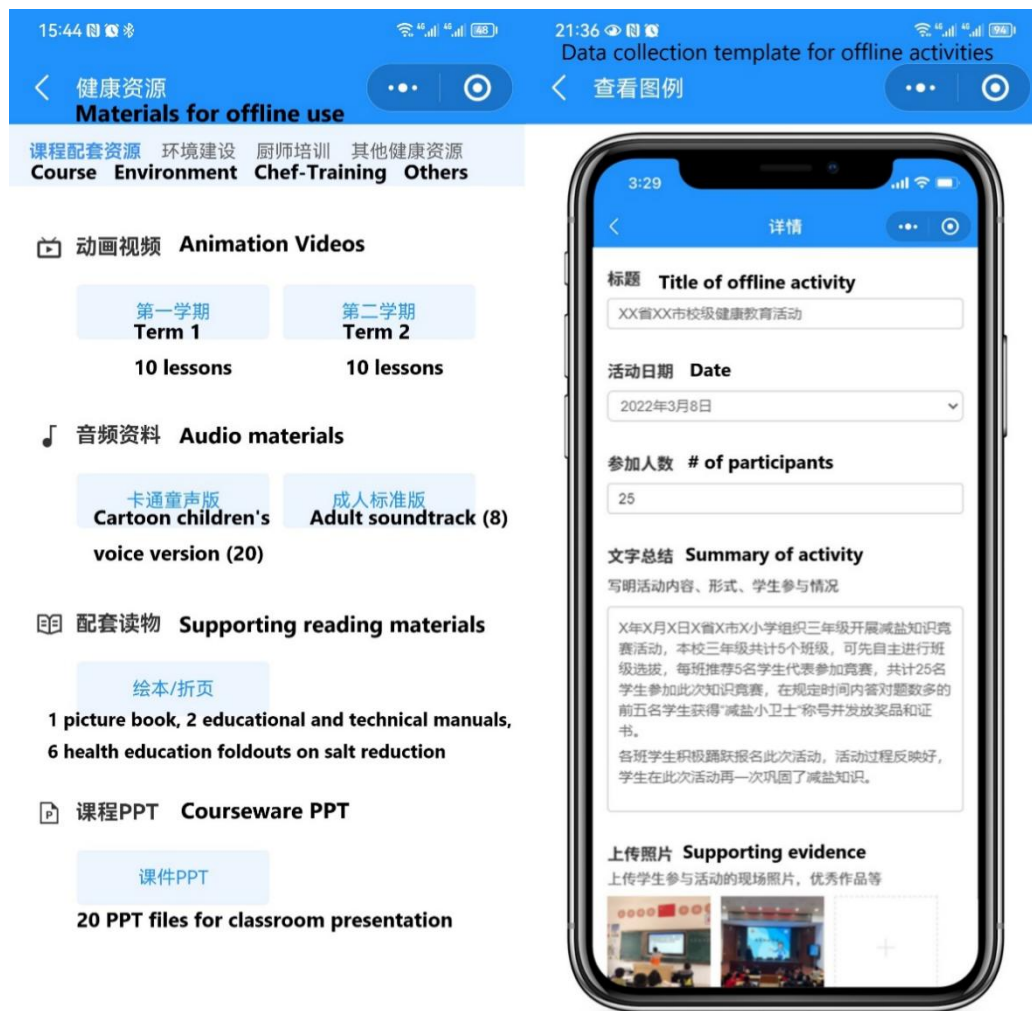
target grade 3 (8-9 years old) schoolchildren and their families from 300 primary schools in 3 prefecture-level cities from South China (Ganzhou, Jiangxi Province), Central China (Zhenjiang, Jiangsu Province) and North China (Qinhuangdao, Hebei Province) in order to cover different settings including urban and rural areas. It will follow a four-phase model of implementation spanning preparation, pilot, scale-up and sustainment.

- The innovative course will be delivered through a mHealth platform with different user clients.

Five strategic choice areas

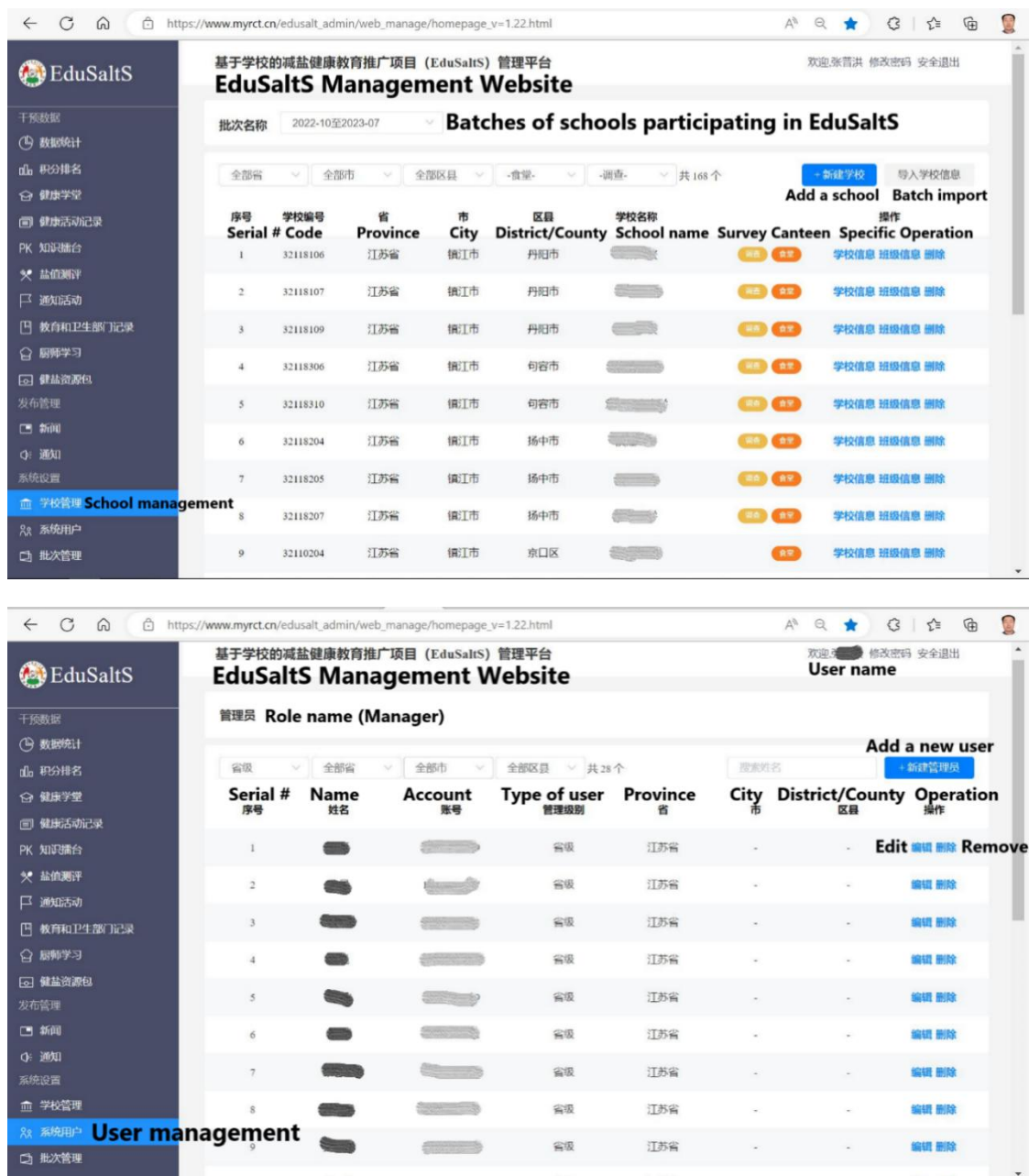
Type of scaling up	<ul style="list-style-type: none"> • Vertical scaling up • Horizontal scaling up • Diversification • Spontaneous scaling up 	<ul style="list-style-type: none"> • At early stage, we adopted a vertical scaling up strategy to institutionalize the EduSaltS through policy and other changes in education and health sectors in 3 pilot cities. This type is also supported by a national health-promoting school development programme led by CCHE. • In the national scaling-up phase, the type of scaling up will depends on the decision of Education Ministry. If regarded as a national health education platform and supported by designated policy, it could be rolled out in a top-down manner, otherwise, diverse strategies will be the only choice including vertical scaling up in some regions, and horizontal and spontaneous use in other regions.
Dissemination and advocacy	<ul style="list-style-type: none"> • Personal: training, technical assistance, policy • Impersonal: web sites, publications, policy briefs 	<p>Will maximize the influences of EduSaltS by using all methods mentioned in the guideline. Specially, will invite the officers in charge of school health education in Education Ministry to participate in site visits in the piloting cities to showcase the system and its achievements, and to participate in expanded steering committee meetings to convince them the effectiveness and scalability of the system. CCHE will lead these activities. In addition, as funded by Global Alliance for Chronic Diseases (GACD) which has awarded over \$240 million in implementation science research grants since 2011, the EduSaltS programme could inform the efforts of NCD control among GACD-supported countries and researchers through GACD's platform and network.</p>
Organizational process	<ul style="list-style-type: none"> • Scope of scaling up • Pace of scaling up • Number of agencies involved • Centralized or decentralized • Adaptive or fixed process • Participatory or donor/expert-driven 	<ul style="list-style-type: none"> • As a four-year programme, the programme will be implemented step-by-step in the 3 chosen cities: Pilot and update (2 schools, 6 months), phase 1 scaling up and update (20 or more schools in each city, 12 months), city level scaling up (remaining 80 or more schools in each city, 12 months). • Based on the cooperation with both health/education authorities at different levels, the programme will be implemented centralized but also with some adaptations in motivation and implementation strategies based on local strength and policies.
Cost/resource mobilization	<ul style="list-style-type: none"> • Assessing cost • Linking scaling up to macro-level funding mechanisms • Ensuring adequate budgetary allocation 	<ul style="list-style-type: none"> • The cost and mobilization resources have been considered and budgeted during grant application. Most budget will be used in the development and maintenance of the EduSaltS system, effectiveness evaluation, and personal cost at different level. • Future mobilization will rely on central or local policy made by Education Ministry or local Education Bureaus. Featured by automatic delivery of a quality health education course and activities, and supported by automatic organization and performance evaluation, the system may cost very little except for cost on system maintenance and potential upgrade of system in order to cover different education contents and age groups as required by government. • It is encouraged to integrate the performance score at class, school, district level into routine performance evaluation and incentive system set for teachers and schools.
Monitoring and evaluation	<ul style="list-style-type: none"> • Special indicators to assess the process, outcome and impact of scaling up • Service statistics • Special studies • Local assessments • Environment analysis 	<ul style="list-style-type: none"> • Registration rate, completion rate for each online class, and before-after KAP change are the key indicators of scaling up at student/family level. A general performance score for each student/family, class, school and district is also adopted to reflex the users' fidelity to the required online or offline activities by automatically activity recording and scoring. Except the before-after KAP change, all the other indicators mentioned above and their components will be shown real-time in EduSaltS Manager client and/or EduSaltS management website. • A sample (780 children and 780 parents) randomly selected from the participating students and parents will be assessed before and after the implementation of EduSaltS to show the change in more detailed KAP and 24h urinary sodium excretion. • Process evaluation will be conducted based on quantitative data routinely collected by EduSaltS system and qualitative findings by individual and focus-group interviews to assess the uptake rates of the scale-up package as well as the facilitators and barriers to implementation.

3 Supplementary Figure 1



Supplementary Figure 1. Example screenshots of online and offline connection in EduSaltS (materials for offline use and data collection template for offline activities)

4 **Supplementary Figure 2**



Supplementary Figure 2. Example screenshots for users and school management supported by EduSaltS website

5 Supplementary Figure 3



Supplementary Figure 3. Example screenshots of optional or mandatory tasks set for teachers in charge of a class

6 Supplementary Figure 4



7 Supplementary Table 3

Key components of the health education materials used in EduSaltS

Key components	Materials
Health education course	<p>20 cartoon health education lessons, covering two topics - salt reduction and other health education. Names of each class are shown below:</p> <p>Salt reduction: Know the salt, Salt and hypertension, Source of salt, Low-sodium salt, Misunderstanding in salt reduction, Salt reduction on prepackaged food, Salt reduction in family cooking, and Salt reduction when eating out</p> <p>Health education: Eyesight protection, Healthy lifestyle, Healthy sleeping, Healthy eating, Healthy body, Sport and health, Teeth protection, Mental health, Food safety and sanitation, Personal Hygiene Habits, Rabies prevention and control and COVID-19 prevention and control</p> <p>Lecture notes and PPT courseware matched with each cartoon class</p>
Health education activities	<p>Activity organization description</p> <p>Audio play for children</p> <p>Salt reduction handbook, leaflets</p> <p>Salt reduction children's picture book</p> <p>Health knowledge question bank</p>
Health environment building	<p>Posters</p> <p>Promotional videos for programme</p> <p>Audio play for children</p>

8 Supplementary Text 1

Interview Outlines Evaluating the Feasibility and Scalability After Pilot Use of EduSaltS

8.1 Individual Interview: With Head Teacher

Theme 1: Health Education in Schools

1. Before this program, were there any health education courses and activities in the class or school?
 - Content? Frequency? Form? Lead responsible person? Lecturing teacher? Source of teaching materials?

Theme 2: Implementation of salt reduction intervention in class

2. Please briefly introduce the development of salt reduction health education in your class in the past two months.
 - Do you think the students and parents in your class are interested in this project? Probably why?
3. Have you ever heard parents or students tell you about the difficulties in using small programs? If so, do you remember exactly what the difficulty was?
4. Do you think the function design of the WeChat applet "Jianyan Management" is reasonable? Do you have any other needs?
5. In the project plan, there are some offline activities that teachers need to carry out in the class, such as theme class meetings, lectures, salt reduction knowledge competitions and other activities. Do you think this way is feasible for you?
 - Does the school's hardware and software support your offline activities? Does the school have multimedia equipment?
 - What support and training do you think you need to carry out offline activities?
 - Do you prefer to prepare the PPT you need or would you like the project team to provide you with a PPT that you can use directly?
If you like to provide PPT for direct use, what are your needs and suggestions?
6. From your experience, what practices do you think can improve the enthusiasm of students to participate in the project?
7. What are the reasons for the level of parental involvement? What approaches have you taken to increase parent engagement?

Theme 3: General comments and observations

8. Judging from the development of the past two months, what difficulties and challenges do you think are there for teachers to promote this salt reduction project?
 - How do you think the project team can help you and other teachers overcome these challenges?
9. Teachers need to invest a lot of time and energy in the promotion of this project. What kind of incentives do you think can fully reflect your workload and effectiveness in this project?

- The project team plans to develop a teacher management integration mechanism, through the background algorithm, to give teachers points for various online and offline activities carried out in the project. These points can also be used as the basis for later selection. Do you have any comments or suggestions on this practice?
- 10. In order to better carry out salt reduction and health education, what support and help do you think you need?
- 11. If this project will continue to be implemented in your class for 10 months, would you like to continue to promote it in your class?

8.2 Individual Interview: With Schoolmaster

Theme 1: School Health Education

1. Please briefly introduce the development of school health education curriculum in the past one or two years?
2. What do you think are the difficulties and challenges for schools to carry out health education for primary school students and offer health education courses?
3. If our school wants to carry out salt reduction health education regularly, what support and help do we need?

Theme 2: Participation and Promotion of Salt Reduction

4. Could you briefly introduce what salt reduction work the school has carried out in the previous two months?
5. According to your understanding, what is the overall situation of the school's participation in the project? What's the effect?
6. What difficulties did the school encounter during the organization of the salt reduction project? How is it solved? What support work has the school management done?
 - What kind of support do you think the project team can provide to the school to help the school solve these difficulties?
7. Do you have any suggestions and opinions on how to improve the enthusiasm and participation of teachers in salt reduction projects?
8. What ideas and suggestions do you have for carrying out health education on salt reduction in schools?
 - Form of organization
 - Activity mode
 -
9. If the salt reduction project will continue to be carried out in schools for more than half a year, would you still like to promote it in schools?
 - If not, why not?

10. What concerns, experiences or suggestions do you have if you want to promote the salt reduction health education project in all primary schools in Zhenjiang in the later period?
11. Is there anything else you would like to add? Or do you have any questions to ask me about this project?

8.3 Individual Interview: With Health Leader

Note: the health leaders include officer from Zhenjiang Health Bureau and specialist from Jiangsu Provincial CDC and Zhenjiang CDC.

Theme 1: Status and needs

1. Would you please introduce the current situation, difficulties and problems of health education and health promotion in primary schools in this city?
2. Please tell us what role you play in the project and what tasks you undertake?
3. Please introduce the overall development of the school salt reduction project in the region.
 - Administrative support
 - Motivation and involvement of school management
 - The enthusiasm and promotion of school teachers
 - Student and parent motivation, engagement, and acceptance
 - Overall learning effect
4. If we promote salt reduction health education in primary schools in our city, what support and help do we need from the national project team?

Theme 2: Facilitators and barriers

5. In your opinion, in the process of project implementation, how should the health sector and the education sector work together to better promote the development of the project?
 - How to cooperate?
 - What tasks should the health sector undertake?
 - What tasks should the education sector undertake?
6. What difficulties have you encountered during the implementation of the project? How did you overcome these difficulties?
7. Can policy advocacy such as Healthy China Action and the establishment of health promotion schools promote salt reduction health education in schools? In addition, from the perspective of social environment, what other factors can promote school salt reduction health education?

8. How do you think you can make better use of the existing functions and resources to promote the implementation of the school salt reduction project in the local area?
9. If the salt reduction health education project is promoted in all primary schools in Zhenjiang in the later period, what investment, support and help are needed?

Theme 3: Promotion of recommendations and suggestions

10. Reviewing the design and implementation of the pre-pilot project, what adjustments and improvements are needed before the formal promotion?
11. What concerns, experiences or suggestions do you have if you want to promote the salt reduction health education project in all primary schools in Zhenjiang in the later period?
12. Is there anything else you would like to add? Or do you have any questions to ask me about this project?

8.4 Individual Interview: With Education Administrative Officer

Theme 1: Current Status of School Health Education

1. Would you please introduce the current situation, difficulties and problems of health education and health promotion in local primary schools?
2. What support and help are needed to promote health education and health promotion for primary school students?
3. What support did the Municipal Education Bureau/Education Commission provide during the salt reduction project?
4. What do you know about this project? How do you feel and evaluate this project? Which places do well? What is not good enough and needs to be improved?

Theme 2: Facilitators and barriers

5. In your opinion, in the process of project implementation, how should the education department and the health department work together to better promote the development of the project?
 - How to cooperate?
 - What tasks should the health sector undertake?
 - What tasks should the education sector undertake?
6. Can policy advocacy such as Healthy China Action and the establishment of health promotion schools promote salt reduction health education in schools? In addition, from the perspective of social environment, what other factors can promote school salt reduction health education?

7. According to the current resources and conditions of the city, what factors do you think may not be conducive to the promotion of school salt reduction projects? What should we do to overcome these disadvantages in the following project promotion?

Theme 3: Promotion of recommendations and suggestions

8. What concerns, experiences or suggestions do you have if you want to promote the salt reduction health education project in all primary schools in Zhenjiang in the later period?

9. If this salt reduction project is to be promoted through the education administration department in the future, what ideas and suggestions do you have?

10. Do you have anything else to add? Or do you have any questions to ask me about this project?

8.5 Focus Group Interview: With Students

Interview Introduction:

Good afternoon, everyone! I am XXXX and I am currently working at XXXX. We recently organized a salt reduction health education program in the third grade of your school. I believe all the students here should have participated in this project. Today I would like to invite you to participate in a focus group discussion on this salt reduction project. Before the formal start, we will play a game first, and after the game, we will enter into a formal discussion. In the discussion, I will ask you what you think about this salt reduction project and your experience in the process of participating in this project. In this discussion, there is no right or wrong answer. What we want to know is your real thoughts and opinions.

Informed consent:

Students and your parents should have received informed consent prior to this interview. Your parents have agreed to allow you to participate in today's interview. If you are willing to participate in the discussion, we will continue the following session. If you don't want to participate in today's discussion or want to withdraw in the middle, you can also tell me that you can leave here at any time.

Privacy protection:

In this interview, I will use a recording pen to record today's interview process. At the same time, the recorder will take notes and try to record the main points of today's discussion. The main purpose of recording and taking notes is to record the content of today's discussion more completely. We will not disclose your personal information to anyone when reporting the results of the discussion.

Next, there will be a group warm-up game ~

Group warm-up game:

1. Introduce yourself

I would like to ask the students to introduce themselves in turn, say your name, make a brief self-introduction, what kind of food or snacks do you like best? You can also briefly talk about the most impressive content or activities in the process of participating in the salt reduction project? Let's start with the classmate on my left.

2. Seasoning Solitaire

According to the seating order from left to right, the children say the names of the condiments commonly used at home in turn. Let's see which children speak faster and more. Let's try it together.

3. Select a game

The host asked the children three questions. The children chose the two options A and B according to their own ideas, and held up the white paper with options in their hands.

Question 1: Which of the following two seasonings is "the first of 100 flavors"?

- A. Table salt
- B. Soy sauce

Question 2: Does salt affect our health?

- A. Have
- B. No

Question 3: Is it necessary for everyone to reduce salt?

- A. Have
- B. No

After the above game, we have a general understanding of the topic of today's interview. The topic of today's interview is mainly based on the condiment salt, which is the "head of Baiwei". Before the formal start, we will talk about the rules of group discussion.

Rules for group discussion:

Please don't talk to each other while others are speaking. Don't interrupt others during the group discussion. If you want to speak, you can wait for the previous speaker to finish speaking and speak on your own. Or speak according to the order of seating.

We would like to hear each panelist's views on each of the issues discussed, and we welcome all of you to speak freely. You can also say "skip" if you don't want to answer a discussion question.

Before we start the discussion, do you have any other questions?

Discussion on Salt Reduction Project

1. In the past two months, what salt reduction activities have you participated in through this project?
(Health Cloud Classroom Online Video Learning, Knowledge Arena, 7-day Salt Value Assessment,

Salt Reduction Lecture, Salt Reduction Handwritten Newspaper, Salt Reduction Blackboard Newspaper)

Which of these activities do you like best?

- Why do you like to take part in this activity?
2. Do you usually use small programs to learn by yourself? Or study with mom and dad?
 - Do you think the small program "Health Cloud Classroom" is easy to use? Have you encountered any problems in the process of using this small program?
 - Which function of the applet do you like best? (Animated video playback,
 3. Do you like to watch animated video lessons on salt reduction?
 - Can you understand the knowledge of salt reduction and health in these animated videos?
 - Do you remember any knowledge about salt reduction and health?
 - If you don't like it, what's the reason?
 4. What do you think is the difference between the salt reduction animation and the animation you usually like to watch? How can improvements attract you?
 5. Do you remember what salt reduction activities were held in the class? Did you attend?
 - Yes, can you ask a classmate to introduce what the activity is?
 - Do other students have anything to add?
 - What kind of activities do you like to participate in or what activities do you find interesting?
 6. After taking part in this project, did you discuss the topic of salt reduction with your parents and grandparents at home?
 - Yes, what kind of salt reduction related topics are generally discussed? (Dining out, home cooking tips)
 - No, why not discuss it? (High academic pressure, busy parents, not interested)
 7. If this program continues in your class for 6 months, would you like to continue to participate in such a program in school and learn about salt reduction and health knowledge? Can you tell me the reason?
 - If so, what is the main motivation for you to learn health knowledge? Why do you like it?
 - If not, why not? Why don't you like it?
 8. In general, do you like to participate in this project?
 - Like → Why like?
 - Don't like → Why don't like? How to improve it so that you like it?

Sum up

That's all for today's panel discussion. Thank you very much for sharing your experience and feelings in the salt reduction education project with me. Your opinions are very important for us to improve the project design. Do you have anything else to add and explain about this project?

Do you have any questions to ask me about this school salt reduction project?

Thank you again for your participation!

8.6 Focus Group Interview: With Parents

Interview Introduction:

Good afternoon, parents! I am XXXX and I am currently working at XXXX. We recently organized a salt reduction health education program in the third grade of the children's school. I believe all the parents here and your children should have participated in this program. Today I would like to invite you to participate in a focus group discussion about this salt reduction project. In the following interview, I will ask you what you think of this salt reduction project and your experience in participating in this project. In this discussion, there is no presupposition of right or wrong answers. We just want to know your real thoughts and opinions.

Informed consent:

Before the start of the interview, all parents should have received the informed consent from the teacher in charge of the class. Before we begin, I'd like to tell you a little bit more about the purpose of today's interview. You should also know that our class has launched a salt reduction health education project. In two months, we have participated in many courses and activities related to salt reduction. This two-month intervention is actually a pre-test, mainly to see the feasibility of this program and provide a basis for wider implementation in the future. Parents are all direct participants in this project, and your feelings and suggestions are the basis for our future formal experiments, improvements and improvements. In today's panel discussion, I hope you can speak freely about this project and help us find problems in the process of scheme and implementation.

Today's panel discussion has a total of 10 questions, which may take 60 to 90 minutes. If parents are willing to participate in today's interview, please sign the last page of the informed consent form in your hand, in duplicate, one for each of us.

Privacy protection:

In this interview, we will use a recording pen to record today's interview process. At the same time, the recorder will also take notes and try to record the main points of today's discussion. The main purpose of recording and taking notes is to record the content of today's discussion more completely. We will not disclose your personal information to anyone when reporting the results of the discussion. Please also keep the content of today's group interview confidential and do not tell anyone who is not present about today's discussion.

Rules for group discussion:

Attention, everyone: Please don't talk to each other while others are speaking. Please don't interrupt others during the group discussion. If you want to speak, you can wait for the previous speaker to finish speaking and speak on your own. Or speak according to the order of seating.

We hope to hear the views and opinions of each group member on each issue discussed, and we welcome everyone to speak freely. You can also say "skip" when you are not willing to answer a discussion question.

Before we start the discussion, do you have any other questions?

Panel presentation

1. First of all, I would like to ask parents to introduce which classmate's parents they are, and briefly introduce what activities you and your children have participated in this salt reduction project in the past two months, and what have you learned?

Participation in salt reduction interventions

2. Will you take your children or let them watch video lessons on the "Health Cloud Classroom" small program?
 - "Yes" → So, are you and your child satisfied with the content and form?
 - "Didn't see" → So, why didn't see? Are there any difficulties or dissatisfaction?
3. In addition to the release of health courses, there are other functions on the small program, such as "knowledge arena", "salt value evaluation", "excellent food optimization" and so on. Do parents have any impression of these functions? Which function is used most often?
 - What are your feelings and opinions about the design of the applet (function, appearance, content, etc.)?
4. Which form (small program, paper material, lecture form) do you like best to learn salt reduction health knowledge? Which form of activity is the most helpful for you to learn about salt reduction? Most interesting?

Family salt reduction status

5. Has the salt reduction project in these two months helped and changed you? For example, when cooking at home, have you started to put less salt?
 - If so, which activities helped the most? Why?
 - If not, why not?
6. In your family, what is the general attitude of family members towards salt reduction?
 - "Support salt reduction" → Have you started to reduce salt? Please give an example.
 - "Do not support salt reduction" → Who is the least active person? What is her/his reason for not supporting salt reduction?

General comments and recommendations

7. Overall, what are your feelings about this salt reduction project? Interested?
 - Interested → Why interested?
 - Not interested/not significant → Why interested/not significant?
8. Before we start this project, do you know what the school has done in terms of health education for students?

- Do you think the health education before school can meet your and your children's wishes and needs for healthy growth?
 - What are the needs and ideas of children and you in terms of health education for students?
9. If the salt reduction intervention will continue to be carried out in schools for more than half a year, will you still be willing to participate?
- If not, why not?
 - Willing to participate, what is the motivation to participate?
10. What are you satisfied with the project? What is not done well enough? How to improve?

Sum up

That's all for today's panel discussion. Thank you very much for sharing your experience and feelings in the salt reduction project with me. Your opinions are very important for us to improve the project design. Do you have any other items to add?

Do you have any questions to ask me about this school salt reduction project?

Thank you again for your participation!

8.7 Focus Group Interview: With Health, Education and School Leaders

Date: September 30, 2020

Venue: Conference Room of Zhenjiang CDC

Participants:

- Provincial Institute: Director Li Xiaoning, Associate Research Librarian Jiang Fan
- Zhenjiang City: Ma Zhenghan, Director of Municipal Education Bureau; Liu Gang, Director of Municipal Health and Health Commission; Zhang Minghui, Deputy Director of Municipal Center for Disease Control and Prevention; Qian Haiyang, Deputy Chief Physician
- Schools: The 2 schoolmasters and 2 teachers from the 2 pilot schools
- George Institute: Deputy Director Zhang Puhong, Project Director Li yuan, Researcher Guo Chunlei, Research Assistant Sun Jingwen

Theme 1: Status of project implementation

1. Please introduce what work Zhenjiang has done in health education and health promotion for primary school students? How do the education and health departments maintain good cooperation in student health education?
2. We know that the pre-test of the school salt reduction project is progressing smoothly, so what are the main tasks of each department at the specific implementation level? How do the health and education departments cooperate on this project?

3. How to mobilize school participation? How about the enthusiasm of the headmaster and teachers? How about the participation of students and parents?
4. What are the differences between the implementation of Yaoqiao Primary School (rural) and Xuefu Road Primary School (urban), and what are the possible reasons?
5. How were interventions such as salt reduction lectures in schools organized during the pilot period?
6. What are the problems in the implementation of mobile health interventions?
7. Is the salt reduction resource package at the health salt management end used?
8. What difficulties have been encountered in the implementation of the project? How is it solved? What is the effect of the solution?

Theme 2: Facilitators and barriers

9. Considering the current resources and conditions of Zhenjiang City, what factors do you think may be conducive to the promotion of school salt reduction projects? (For example, the establishment of health cities, the establishment of healthy cities, the evaluation of health promotion schools, three reduction and three health activities, etc.) What factors may not be conducive to the promotion of school salt reduction projects? (For example, school vision, primary school curriculum, lack of health education teachers, etc.)

Theme 3: Recommendations and suggestions for further promotion

10. Do you have any considerations or suggestions for promoting the school salt reduction project in all primary schools in Zhenjiang in the future? What specific support can each of the education and health administrations provide? What kind of input, support and help are needed?
11. What specific recognition can the education department provide to the participating schools and teachers?
12. What support and assistance is required from the National Project Team? Manage Web site support?
13. How can the national, provincial and municipal project teams communicate better?
14. Is there anything else you want to add? Or do you have any questions about this project?

9 Supplementary Text 2

Solutions to the key challenges found by qualitative study at the end of the pilot use of EduSaltS in Zhenjiang (Oct 15, 2020)

1. Some parents think that this innovative course is just a task that a teacher has to complete, and they do not fully understand the importance of this course for children and family health, so they are not very active or perfunctory.

Solution: There are mainly four methods to solve this problem: explain the programme to the parents during system registration; encourage the head teacher to make full use of the regular parent meeting and WeChat group to introduce and exchange this course; design publicity videos to explain the purpose, method and authority of the course; and invite children to explain to parents.

2. In order to complete the health education courses well, in addition to the cloud courses, the EduSaltS system also provides a large number of online auxiliary functions, offline activity designs, and a large number of health education materials. Many people feel very confused, do not know whether to complete them all, and feel very stressed.

Solution: We outlined the key responsibilities for each role of student/family, teacher and administrator, and clearly marking activities as mandatory or optional to reduce the burden and increase the flexibility of the programme.

3. The effect of health education may not be good if knowledge learning is only relying on children and parents to watch online courses and answer a few questions at home every week. Children need to receive more education and practical exercise.

Solution: In order to empower the children's role of guidance and supervision, we encourage the teachers to give parallel health education courses at school (optional but with score). Standardized slide and video courseware will be developed and be available for download. In addition, the children should be encouraged to make full use of the knowledge they have learned to influence their parents' behaviors and eating habits for their own health and that of their families. In particular, children should be encouraged to actively participate in the cooking process in order to understand the ways of adding salt and supervise the implementation of salt reduction.

4. Big gap was found for the students' performance scores between Xuefu Road Primary School and Yaoqiao school. After discussion, it was found that the reasons seemed to be there were some special children (mentally retarded) in Yaoqiao Primary School's classes. They are left-behind children. Their parents are working in other places, and only grandparents accompany them at home, while some grandparents do not have smart phones or do not know how to use Wechat (or can only use Wechat to send messages, not to use WeChat-based applications - applets), and some families do not have WIFI, and mobile data is not enough. All in all, there are different barriers to interfering with the use of applets. (Yaoqiao Primary School is a rural primary school, and it is difficult to avoid such a situation in the 100 schools formally tested.). It was suggested that the offline classes should be an option to deliver the health education courses, and hardcopies of some key materials should be available for such families.

Solution: We developed PPT courseware. Together with the video courses, they can be downloaded for offline use with teacher's assistance. We also recommend the schoolteachers to print out some key photographic materials for those students to take home for their grandparents.

5. The CDC staff who are responsible for the scaling-up should have the same authority as the head teacher so as to supervise the progress of the schools.

Solution: The user architecture has been designed following the China's administrative divisions, which enable the upper level managers to set authority of system access for lower level managers through both EduSaltS manager and Management website, but only the statistical data subordinated classes and schools can be seen to protect personal information.

6. There is no electronic screen in Yaoqiao Primary School, and there is no TV or multimedia equipment in the class, so it is difficult to use video intervention materials in the school. I am afraid that the same situation would be found in the 100 schools formally tested.

Solution: Only the offline activities such as poster posting, school level lectures or knowledge contest, and management of canteens for salt reduction are mandatory and have been provided with supporting materials and designs. All other education or activities which must be facilitated with audio or video players are set as optional but these modern measures are strongly encouraged by allocating points although a little bit lower than those of the mandatory tasks.

7. There are only 15 seconds to answer each question in the Knowledge Competition. The time is too short for the third-grade students, it is likely that they have just finished reading the questions and have no time to think about them.

Solution: Extended to 30 seconds.

8. The topic of the Knowledge Competition is a little bit difficult for third-grade students. If the score is very low after a competition, it will greatly dampen the enthusiasm of the students. In addition, there are 10 questions in each competition. The 10 questions are a little too much for the third-grade students, which will consume their enthusiasm and not concentrate on the answers.

Solution: The number of questions has been reduced to 5. In addition, all the questions have been classified into easy or difficult groups. The competition will start from easy ones, if 4 or 5 of the questions were answered correct for both competitors, 1 or 2 difficult ones will be released.

9. At present, the only way to get the points is the cloud health education courses and the Knowledge Competition. In addition, students can only see the place they rank in the class, but they can't see how many points they are behind the people in front of them. Students hope to see the details of the ranking, which can better motivate students. It is recommended to increase the number of ways to get points, such as punching in to get points, reading articles, watching videos, etc., and show the ranks among different populations.

Solution: The scoring algorithm has cover virous online and offline activities. The rules can be seen in the EduSaltS Manager end. Its screenshot is shown in the *right figure*. Now the users can see their rank among their class, school, and city. However, only the nicknames of top 10 classmates are listed out.

10. Two twins are in the same intervention class, and the account of the intervention applet is currently shared by two people. If in the formal test, how to solve it? Especially when two twins are in the same intervention class or assessment class, but there is only one eligible parent, what should we do? Even if there are two eligible parents, is intervention or assessment based on parent 1 and twin 1 as a group and parent 2 and twin 2 as a group?

Solution: We adopted the last option to support both children to learn the courses separately. But if the family has only one cellphone number, we will encourage the twins learning together and only one child can be registered in the system.

11. It may need a lot of time to advocate a local government to adopt the system. It is better to draft a standardized document introducing the programme and system, the significance, and the way to participate in.

Solution: Based on the protocol of EduSaltS, we prepared a set of materials to support the advocacy work, including documents, slides, videos, documents, and a school notice in the name of local education bureaus for their reference. The content of the draft school notice include: (1) Background and purpose – specially clarifying that the purpose of fulfil the task of school health education required by the nation, and this innovative health education system can provide automatic high quality health education in lack of quality health education teachers and teaching materials. Attention should be paid that EduSaltS can provide all the required health education courses by the nation, not only for salt reduction. (2) The general time schedule and methods of the activities. (3) The responsibilities and basic requirements of all parties: the school should ensure the "basic" environmental construction like loudspeakers or video broadcasting, put forward basic requirements for the participation rate of the whole course, and formulate the performance evaluation and reward measures of the school. Teachers in charge of classes should ensure the construction of the class environment during the activities. Every Friday, they should remind students to study courses and practices with their family members on weekends. They should focus on cultivating children's sense of responsibility and love by caring about the blood pressure and weight health of their parents and grandparents. At the same time, they should let their children go home with a series of promotional folders with the theme of "For the health of children and themselves, salt reduction starts from me". With the help of parents' meetings and other opportunities, children and their families are mobilized to complete various class meetings or practical activities as required. School chefs or catering units carry out "necessary" publicity, regularly cooperate with the completion of the evaluation of the degree of saltiness and greasiness of dishes, and adjust the amount of salty and oily condiments according to the evaluation results, encourage chefs to monitor and quantify the use of salty condiments, to ensure the health of children's lunch. (4) Performance evaluation of the whole district or the whole city: according to the system records, specify the evaluation and reward methods (such as regular monthly assessment and ranking; positive case recognition and publicity, competition activities and awards, various excellent titles, etc.). Of course, the national team should ensure that the system can provide sufficient and reliable support.

12. Although the EduSaltS is developed based on previous apps and has developed many features to support e-learning, offline activities, social network, performance evaluation and user management, there may be some other issues appearing during the scaling up in a larger scale and in different settings. So it would be better to scale up step by step, rather than cover all the 300 schools for one time.


Solution: We agree to consider roll out the project in batches, for example, each city starts 20/50 schools first, and then expands to 100 schools, so as to further find problems and improve. The course will last for one year (two school terms), but the main course will be completed in one semester in order to make the starting time more flexible.

10 Supplementary Table 4

Materials supporting the mHealth platform and offline activities

Materials	Illustration
Programme implementation plan & guideline	  <p>(Implementation plan) (Process evaluation plan)</p>
Health education cartoon lessons (examples)	  <p>(Salt reduction health education) (Health education)</p>
Posters	 <p>Pre-packaged food Home cooking Eating out Take-out 'Hidden' salt</p>
Salt reduction handbook	   <p>Partly display</p>
Foldouts	 <p>Salt reduction at home</p>

Materials	Illustration
	<p>减盐问答</p> <p>1 食盐的种类很多 是不是越贵的盐越好?</p> <p>食盐按来源分海盐、岩盐、湖盐、井矿盐等。海盐是天然海盐经日晒蒸发而成，岩盐是天然岩盐经日晒蒸发而成，湖盐是天然湖盐经日晒蒸发而成，井矿盐是天然井矿盐经日晒蒸发而成。海盐、岩盐、湖盐、井矿盐都属于天然盐，其成分都是氯化钠，只是来源不同。海盐的含碘量通常高于岩盐、湖盐、井矿盐。海盐的含碘量通常高于岩盐、湖盐、井矿盐。海盐的含碘量通常高于岩盐、湖盐、井矿盐。</p> <p>2 健康人 需要低盐饮食吗?</p> <p>健康人也需要低盐饮食。食盐摄入过多会导致高血压、心脏病、肾脏病等。低盐饮食有助于降低这些疾病的风险。健康人也需要低盐饮食。食盐摄入过多会导致高血压、心脏病、肾脏病等。低盐饮食有助于降低这些疾病的风险。健康人也需要低盐饮食。食盐摄入过多会导致高血压、心脏病、肾脏病等。低盐饮食有助于降低这些疾病的风险。</p> <p>3 低盐饮食 会不会影响食物的美味?</p> <p>低盐饮食不会影响食物的美味。通过合理的烹饪方法，可以保持食物的美味。低盐饮食不会影响食物的美味。通过合理的烹饪方法，可以保持食物的美味。低盐饮食不会影响食物的美味。通过合理的烹饪方法，可以保持食物的美味。</p> <p>4 为什么有的人吃得咸 价值也不高?</p> <p>吃得咸并不意味着吃得健康。高盐饮食会导致高血压、心脏病等。吃得咸并不意味着吃得健康。高盐饮食会导致高血压、心脏病等。吃得咸并不意味着吃得健康。高盐饮食会导致高血压、心脏病等。</p> <p>5 盐吃多了会使得体力 头发变白?</p> <p>盐吃多了会导致高血压、心脏病等。高盐饮食会导致高血压、心脏病等。高盐饮食会导致高血压、心脏病等。高盐饮食会导致高血压、心脏病等。</p> <p>6 什么是低钠盐?</p> <p>低钠盐是指钠含量较低的食盐。低钠盐有助于降低血压、减少心血管疾病的风险。低钠盐是指钠含量较低的食盐。低钠盐有助于降低血压、减少心血管疾病的风险。低钠盐是指钠含量较低的食盐。低钠盐有助于降低血压、减少心血管疾病的风险。</p> <p>7 使用低钠盐做饭 是不是可以多吃盐?</p> <p>使用低钠盐做饭并不意味着可以多吃盐。低钠盐只是降低了钠的含量，并不意味着可以多吃盐。使用低钠盐做饭并不意味着可以多吃盐。低钠盐只是降低了钠的含量，并不意味着可以多吃盐。使用低钠盐做饭并不意味着可以多吃盐。低钠盐只是降低了钠的含量，并不意味着可以多吃盐。</p> <p>8 高盐食物还能吃吗?</p> <p>高盐食物可以吃，但要适量。高盐食物会导致高血压、心脏病等。高盐食物可以吃，但要适量。高盐食物会导致高血压、心脏病等。高盐食物可以吃，但要适量。高盐食物会导致高血压、心脏病等。</p> <p>温馨提示</p> <p>为了健康，请减少食盐摄入量。每日食盐摄入量应控制在6克以内。为了健康，请减少食盐摄入量。每日食盐摄入量应控制在6克以内。为了健康，请减少食盐摄入量。每日食盐摄入量应控制在6克以内。</p> <p>食盐与健康</p> <p>食盐与健康密切相关。适量的食盐摄入有助于维持身体的正常功能。食盐与健康密切相关。适量的食盐摄入有助于维持身体的正常功能。食盐与健康密切相关。适量的食盐摄入有助于维持身体的正常功能。</p>
	<p>Frequently asked question(FAQ)</p> <p>1 认识食盐</p> <p>食盐是日常生活中不可或缺的物质。适量的食盐摄入有助于维持身体的正常功能。食盐是日常生活中不可或缺的物质。适量的食盐摄入有助于维持身体的正常功能。食盐是日常生活中不可或缺的物质。适量的食盐摄入有助于维持身体的正常功能。</p> <p>2 人的生命活动 离不开食盐</p> <p>人的生命活动离不开食盐。食盐是维持生命活动所必需的物质。人的生命活动离不开食盐。食盐是维持生命活动所必需的物质。人的生命活动离不开食盐。食盐是维持生命活动所必需的物质。</p> <p>3 吃盐多的危害</p> <p>吃盐过多会导致高血压、心脏病等。高盐饮食会导致高血压、心脏病等。高盐饮食会导致高血压、心脏病等。高盐饮食会导致高血压、心脏病等。</p> <p>4 推荐食盐摄入量</p> <p>推荐食盐摄入量应控制在6克以内。每日食盐摄入量应控制在6克以内。每日食盐摄入量应控制在6克以内。每日食盐摄入量应控制在6克以内。</p> <p>5 注意营养成分表 尽量选择低钠食品</p> <p>注意营养成分表，尽量选择低钠食品。低钠食品有助于降低血压、减少心血管疾病的风险。注意营养成分表，尽量选择低钠食品。低钠食品有助于降低血压、减少心血管疾病的风险。注意营养成分表，尽量选择低钠食品。低钠食品有助于降低血压、减少心血管疾病的风险。</p> <p>6 粗略估计 每日食盐摄入量</p> <p>粗略估计每日食盐摄入量。每日食盐摄入量应控制在6克以内。粗略估计每日食盐摄入量。每日食盐摄入量应控制在6克以内。粗略估计每日食盐摄入量。每日食盐摄入量应控制在6克以内。</p> <p>7 警惕“藏起来”的盐</p> <p>警惕“藏起来”的盐。高盐食品往往隐藏在加工食品中。警惕“藏起来”的盐。高盐食品往往隐藏在加工食品中。警惕“藏起来”的盐。高盐食品往往隐藏在加工食品中。</p>
Salt & Health	
Salt reduction education radio show for children	<p>第1讲 认识食盐的危害</p> <p>第2讲 高盐食品少吃</p> <p>第3讲 患了高血压，更要少吃盐</p> <p>第4讲 认识食盐的种类</p> <p>第5讲 低钠盐也不能多吃</p> <p>第6讲 巧用限盐勺</p> <p>第7讲 盐勺盐罐齐上场</p> <p>第8讲 高盐调味品要少放</p> <p>第9讲 天然香料代替盐</p> <p>第10讲 健康烹饪方式好</p> <p>第11讲 腌制食品少吃</p> <p>第12讲 减盐小技巧：咸了倒碗开水调一调</p> <p>第13讲 预包装食品挑选</p> <p>第14讲 原味薯片也含盐</p> <p>第15讲 减盐小技巧：阅读“营养成分表”</p> <p>第16讲 餐馆点餐，放一半盐就好</p> <p>第17讲 点外卖时，要求少放盐</p> <p>第18讲 减盐冷知识：挂面、面包也含盐</p> <p>第19讲 减盐冷知识：甜蛋糕也含盐</p> <p>第20讲 减盐冷知识：喝淡盐水不排毒</p>
(20 lessons of radio broadcasting contains key messages of salt-related knowledge)	
Salt reduction education radio show for adult users	<p>1大喇叭广播：第一讲_吃盐多的危害</p> <p>2大喇叭广播：第二讲_盐的推荐量和实际...</p> <p>3大喇叭广播：第三讲_家庭减盐诀窍</p> <p>4大喇叭广播：第四讲_认识营养食品</p> <p>5大喇叭广播：第五讲_认识营养标签</p> <p>6大喇叭广播：第六讲_在外就餐主动要求...</p> <p>7大喇叭广播：第七讲_纠正减盐误区</p> <p>8大喇叭广播：第八讲_减盐要点汇总</p>
(8 lessons of radio broadcasting contains key messages of salt-related knowledge)	
Promotional videos	<p>减盐大家谈</p> <p>减盐公益广告 (餐馆篇)</p> <p>减盐公益广告 (超市篇)</p> <p>减盐公益广告 (家庭篇)</p> <p>减盐公益广告-30秒</p> <p>学校减盐2021修改 (无字幕) -1</p>
(6 promotional videos)	

Materials	Illustration		
Chef training materials			
	《减盐干预技术手册 - 餐馆减盐篇》 (Handbook)	1-认识烹饪中的盐 (Video courses)	2-减盐不减味（厨房篇）

11 **Supplementary Figure 4**



‘Health Cloud Classroom’

‘EduSaltS manager’

Supplementary Figure 4. Ranking interface on different WeChat applications