SUPPLEMENTAL MATERIAL

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2. The structure of FAST-RIGHT questionnaire with additional 4 questions about stroke awareness [1]

A. FAST-RIGHT

1. Which disease do the following symptoms probably mean? (Facial droop, Arm weakness, Speech disturbance)
    - Correct (Participant should give an answer like “stroke”, “cerebral infarct”, “Cerebral thrombosis”, “ cerebral hemorrhage”, “ cerebral embolism”, “ apoplexy”)
    - Incorrect（none of above）
2. What will you do when encountering above-mentioned symptoms? (Single selection)
    - Self-observation at home (incorrect)
    - Call the family, wait for them, then go to hospital (incorrect)
    - Call emergency phone immediately (correct)
3. Have your relatives or colleagues suffered from these diseases?:Yes/No
4. How do you get such information? (Single selection/multiple Choice)

    Newspaper/TV/Broadcast/Wechat/Internet/popular science and technology (PST) activities

B. The other relative factors in this survey: brief introduction

- Basic Information
    - Demographic information (age, sex, education, family member, marriage, career, living status, annual income, medical insurance)
    - Address (province)

- The status of conducting questionnaire (by self /others/phone)

- Lifestyle
  - Smoking (Yes/No/Quit/Years)
  - Drinking (Yes/No/Quit/Years)
  - Exercise habit (often/less frequency)
  - Dietary habits

- Family history (stroke, coronary artery disease [CHD], hypertension, diabetes mellitus, dyslipidemia]

- Diseases and management during survey (2015-2017)
  - cerebrovascular disease [new stroke, types, Outpatient/Inpatient, mRS]
  - Coronary Heart Disease [new CHD, atrial fibrillation [AF]/drugs]
  - Hypertension [drug adherence, monitoring frequency, qualification rate]
  - Diabetes Mellitus [drug adherence, monitoring frequency, qualification rate]
  - Dyslipidemia [drug adherence, monitoring frequency, qualification rate]

- Physical examination (body mass index [BMI], blood pressure [BP], cardiac auscultation)

- Grade of stroke risk

  Hypertension Diabetes mellitus Dyslipidemia AF

  BMI-Obesity Smoking Lack of exercise

  Family history History of stroke History of transient ischemic attack (TIA)

  Five levels: Stroke TIA High-Risk Moderate-Risk Low-Risk

- EEG, serum test (glucose, lipid, homocysteine), carotid artery ultrasound for new and prior

high-risk, stroke and TIA group.

- Surgery and interventional therapy during this survey
  - Carotid artery [CAS, CEA, Extracranial-Intracranial Bypass]
  - Coronary artery [PCI, CABG]
  - Surgery/Interventional therapy for Intracranial hemorrhage [Yes/No]

3. Definition of Risk Factors for Stroke [1]

Risk factor	**Criteria**
Smoking	≥6 months in life (accumulative or consecutive)
Alcohol drinking	≥100mL spirit alcohol >3 times per week (self report)
Hypertension	1. Systolic BP ≥140mmHg or diastolic BP ≥90mmHg, or taking BP-lowering drugs OR 2. ABPM: 24 h mean BP ≥130/80 mmHg, or daytime BP ≥135/85mmHg, or nocturnal BP ≥120/70mmHg OR 3. Home BP monitoring ≥135/85 mmHg(self report)
Dyslipidemia	LDL-C ≥1.8mmol/L, or HDL-C <1.04mmol/L, or TC ≥6.22mmol/L, or TG≥2.26mmol/L
Diabetes	1. Fasting glucose ≥7.0 mmol/L or non-fasting blood glucose ≥11.0mmol/L with diabetes mellitus symptoms OR 2. Fasting glucose ≥7.0mmol/L or non-fasting blood glucose ≥11.0mmol/L more than two times without typical DM symptoms OR 3 .OGTT (75g glucose): 2 h blood glucose ≥11.0 mmol/L

	OR 3. Taking glucose-lowering drugs
Significant overweight or obese	BMI ≥26.0 kg/m^2
AF	Either a history of persistent AF or supported by past ECG or ECG examination in this survey and confirmed by a cardiologist
Physical exercise	1. ≥ 30 min of medium strength and above exercise every time, >3 times per week OR 2. Moderate or heavy manual workers
Family history of stroke	Any parent or sibling with stroke; further inquiry and confirmation by a neurologist
History of stroke.	Either neurological deficit symptom at onset or symptomatic lacunar cerebral infarction on imaging, confirmed by a neurologist
TIA	Sudden onset focal/global neurological deficit lasting less than 24h, usually alleviating within 30minutes, excluding non-angiogenesis, and confirmed by a neurologist

4. Six Regions of China in FAST-RIGHT study

We also divided the administrative areas into 6 groups based on their geographical locations. North and Northeast China included Beijing, Tianjing, Hebei, and Jilin. East China covered Shanghai, Jiangsu, Zhejiang, Anhui, Fujian, and Jiangxi. Central China included Henan, Hubei, and Hunan. South China included Guangdong, Guangxi, and Hainan. Southeast China included Chongqing, Sichuan, Guizhou, and Yunnan. Northwest China included Gansu, Qinghai, Ningxia, and Xinjiang.

Table S1. Missing data for each variable about cerebrovascular disease survivors

Subgroup	N
Age[a]	0
Sex	0
Site	0
Region	0
BMI[b]	7
Education	0
Personal annual income	3
Living status	3
Children number	5
Stroke amongst people around them	0
Number of avenues taken to participate	0
Smoking status	0
Level of exercise	0
Family history of stroke	4
History of heart disease	0
History of hypertension	1
History of diabetes	3

History of dyslipidemia	2
Number of risk factors	8

[a]Age ≥100 was classified as missing

[b]BMI >50 or <10 was classified as missing

Table S2. Relation of recognition of stroke and correct action after stroke

	Correct action		Incorrect action	
	n/N	(%)	n/N	(%)
Recognition of stroke	3633/5348	(67.9)	1715/5348	(32.1)
Unknown of stroke	482/942	(51.2)	460/942	(48.8)

Table S3. Avenues to learning about acute stroke

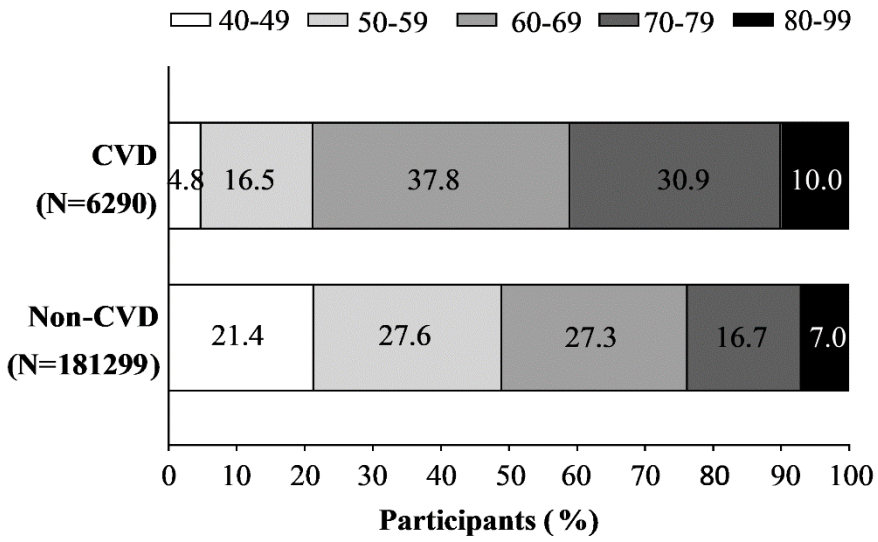
	Non-CVD[a]		CVD	
	n/N	(%)	n/N	(%)
Newspaper	45975/181309	(25.4)	1597/6290	(25.4)
TV	140532/181309	(77.5)	4825/6290	(76.7)
Broadcast	28850/181309	(15.9)	1156/6290	(18.4)
Wechat	14738/181309	(8.1)	302/6290	(4.8)
Internet	12394/181309	(6.8)	267/6290	(4.2)
PST	76693/181309	(42.3)	2901/6290	(46.1)
PST-only[b]	25948/181309	(14.3)	1006/6290	(16.0)

PST denotes popular science and technology.

[a] Those without history of cerebral vascular disease, whose missing data was 31.

[b] Part of participants only selecting PST activities included those who reported no avenue to learn stroke. They were regarded as having a PST activities pathway according to accepting information about stroke in the previous China National Stroke Screening Survey. The real number without any pathways is unknown.

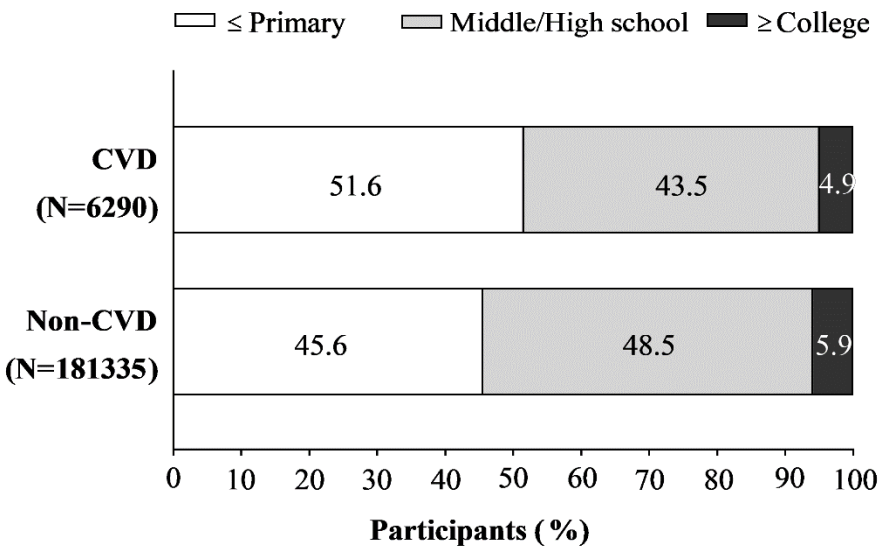
Figure S1. Distribution of age group between CVD survivors and non-CVD population



CVD: CVD survivors, adults with history of cerebral vascular disease

Non-CVD: Adults without history of cerebral vascular disease

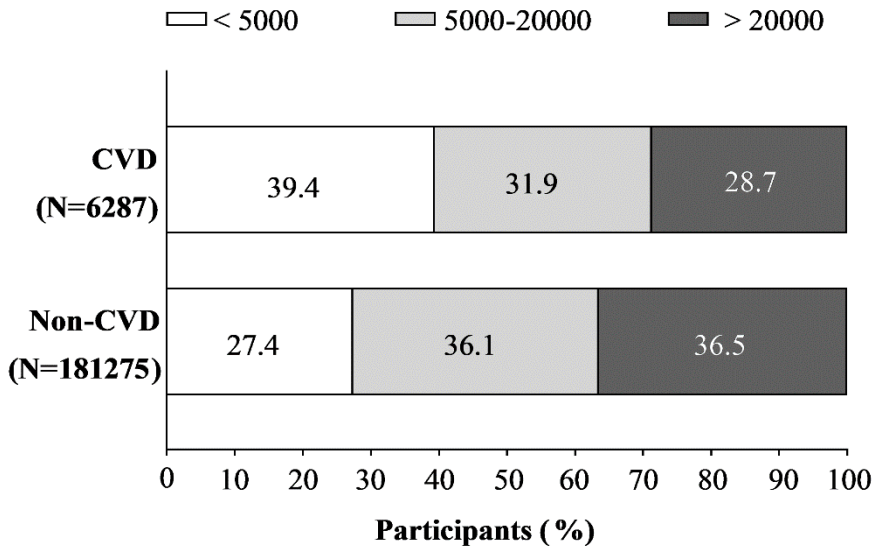
Figure S2. Distribution of education between CVD survivors and non-CVD population



CVD: CVD survivors, adults with history of cerebral vascular disease

Non-CVD: Adults without history of cerebral vascular disease

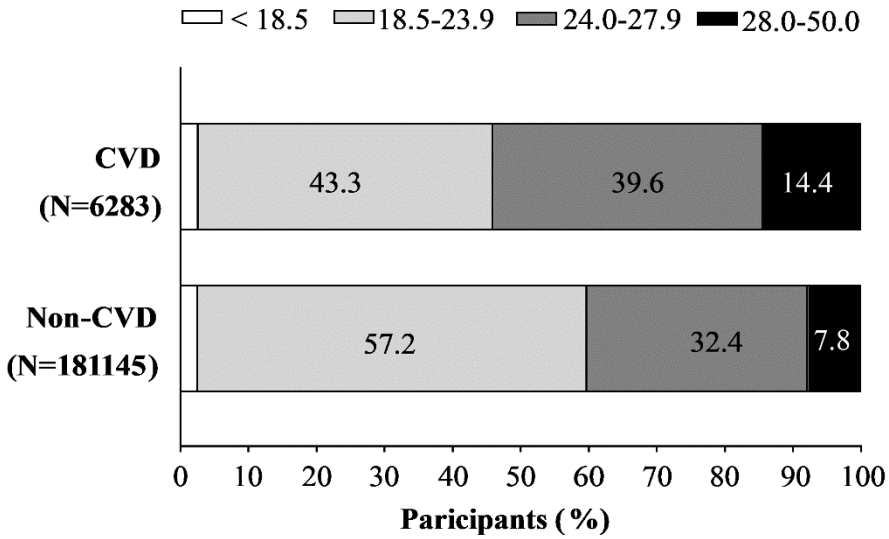
Figure S3. Distribution of personal annual income between CVD survivors and non-CVD population



CVD: CVD survivors, adults with history of cerebral vascular disease

Non-CVD: Adults without history of cerebral vascular disease

Figure S4. Distribution of BMI between CVD survivors and non-CVD population

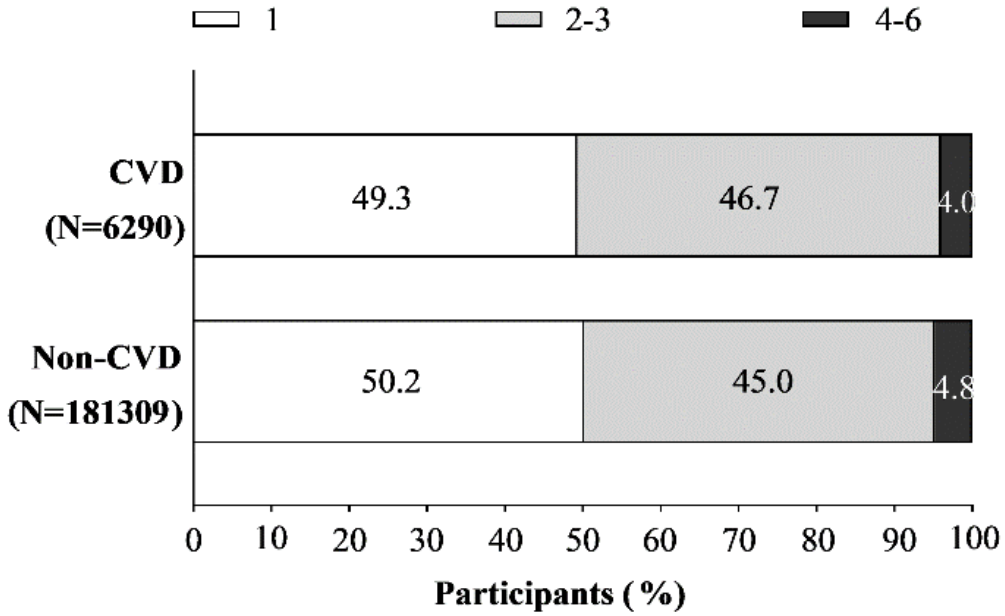


BMI denotes body mass index

CVD: CVD survivors, adults with history of cerebral vascular disease; The proportion of <18.5: 2.7%.

Non-CVD: Adults without history of cerebral vascular disease; The proportion of <18.5: 2.6%.

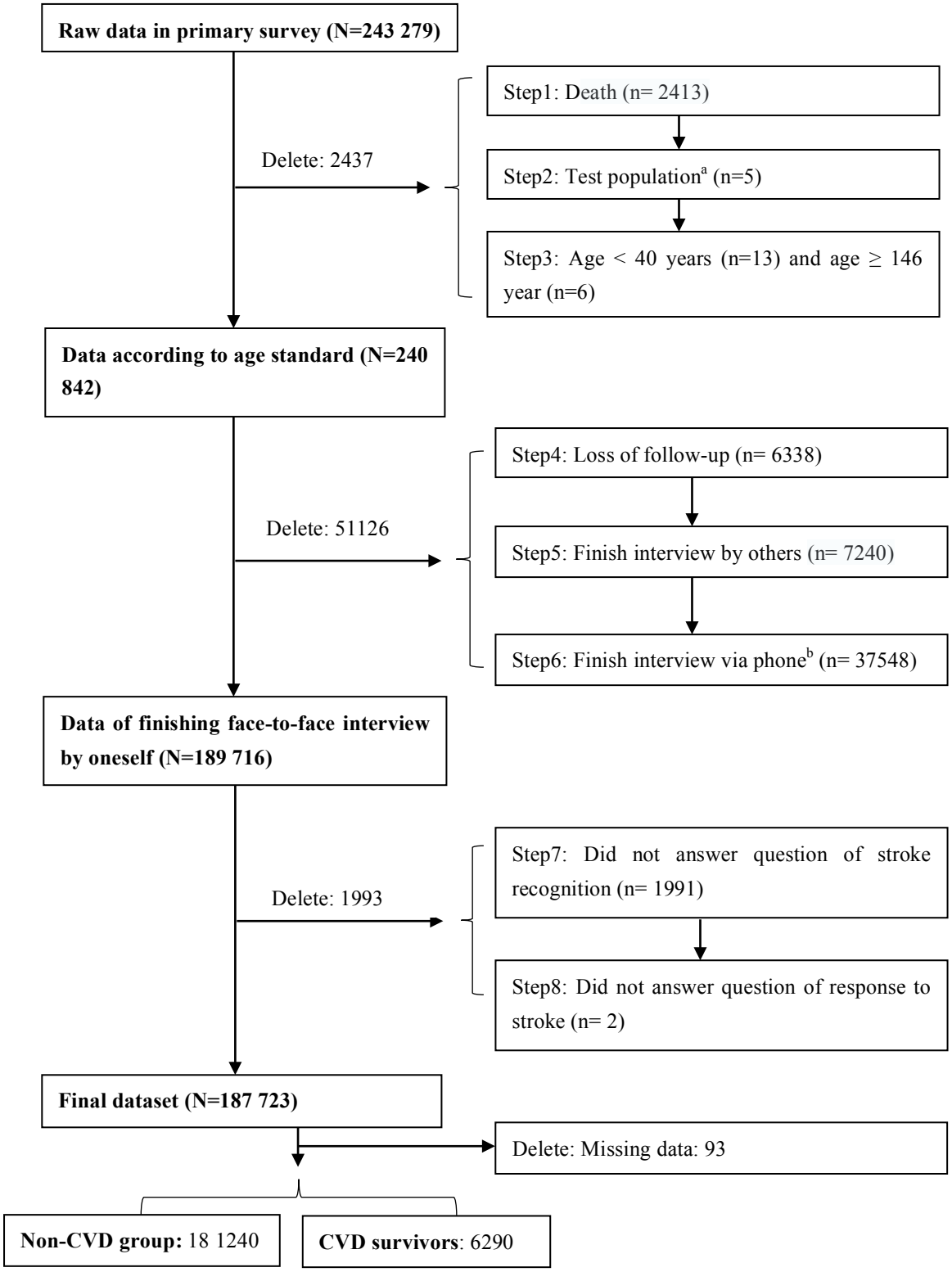
Figure S5. Proportions of the number of avenues to gain knowledge of stroke between CVD survivors and general population



CVD: CVD survivors, with history of cerebral vascular disease

Non-CVD: Adults without history of cerebral vascular disease

Figure S6. Data preparation and cleaning process[1]



[a] Virtual population to test the data management system.

[b] To ensure the accuracy, integrity, and creditability, residents finishing questionnaires via phone in CNSSS was not included in FAST-RIGHT study.

CVD survivors: Adults with history of cerebral vascular disease

Non-CVD group: Adults without history of cerebral vascular disease

Reference

1. Li S, Cui LY, Anderson C, et al. Public Awareness of Stroke and the Appropriate Responses in China: A Cross-Sectional Community-Based Study (FAST-RIGHT). Stroke. 2019;50:455-462. DOI: 10.1161/STROKEAHA.118.023317.