Supplementary information

Title: The prevalence of pre-diabetes and diabetes and their associated factors in Northeast China: a cross-sectional study.

RuiWang[a] Peng Zhang[b] Zhijun Li[d] Xin Lv[c] Hongfei Cai[a] Chunshi Gao[c] Yuanyuan Song[c]Yaqin Yu [c] **Bo Li[c*] Youbin Cui[a*]**

[a] Department of Thoracic Surgery, the First Hospital of Jilin University, Changchun 130021, China.

[b] Department of Neurology, Stroke Center, the First Hospital of Jilin University, Chang Chun130021, China.

[c] Department of Epidemiology and Biostatistics, Jilin University School of Public Health, 1163 Xinmin Street, Changchun, Jilin 130021, China.

[d]Department of Epidemiology and Biostatistics, Beihua University School of Public Health,

[*]Corresponding author:

Youbin Cui, Ph D

Department of Thoracic Surgery,

the First Hospital of Jilin University,

71 Xinmin Street, Changchun, Jilin 130021, China.

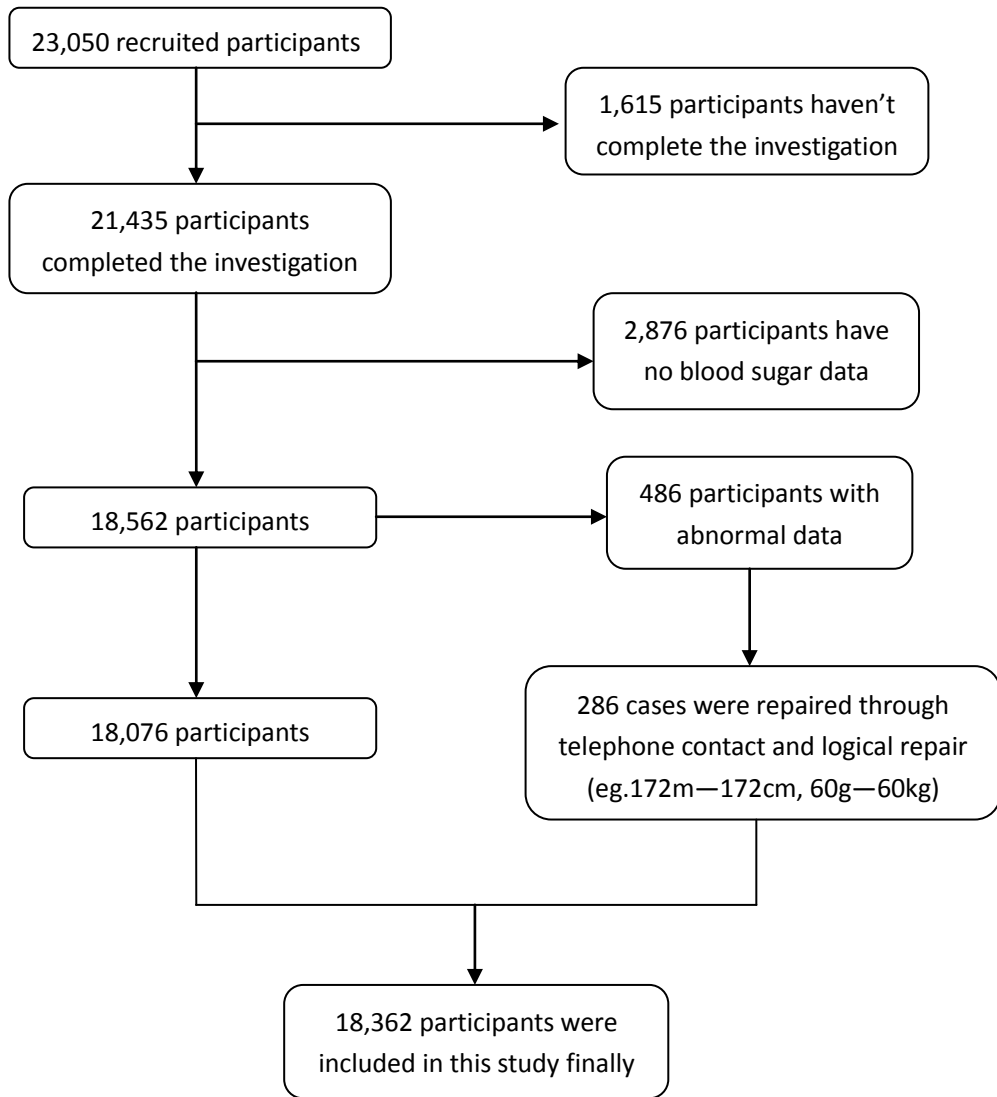Tel:+86 81875310

E-mail: cuiyb@jlu.edu.cn

Bo Li, Ph D.

Department of Epidemiology and Biostatistics,

Jilin University School of Public Health,

1163 Xinmin Street, Changchun, Jilin 130021, China

Tel: ＋86 043185619451

E-mail: li_bo@jlu.edu.cn

```
┌─────────────────────────────┐
│ 23,050 recruited participants│
└─────────────────────────────┘
              │              ┌──────────────────────────────┐
              │─────────────▶│ 1,615 participants haven't   │
              │              │ complete the investigation   │
              ▼              └──────────────────────────────┘
┌─────────────────────────────┐
│ 21,435 participants          │
│ completed the investigation  │
└─────────────────────────────┘
              │              ┌──────────────────────────────┐
              │─────────────▶│ 2,876 participants have      │
              │              │ no blood sugar data          │
              ▼              └──────────────────────────────┘
┌─────────────────────────────┐   ┌──────────────────────────┐
│ 18,562 participants          │──▶│ 486 participants with    │
└─────────────────────────────┘   │ abnormal data            │
              │                    └──────────────────────────┘
              │                                 │
              │                                 ▼
              │                    ┌──────────────────────────────────┐
              ▼                    │ 286 cases were repaired through  │
┌─────────────────────────────┐   │ telephone contact and logical    │
│ 18,076 participants          │   │ repair (eg.172m—172cm, 60g—60kg) │
└─────────────────────────────┘   └──────────────────────────────────┘
              │                                 │
              └──────────────┬──────────────────┘
                             ▼
              ┌──────────────────────────────┐
              │ 18,362 participants were      │
              │ included in this study finally│
              └──────────────────────────────┘
```

Figure 1: Sample processing flow chart

Personal health questionnaire

Code : ☐☐ ╱ ☐ ╱ ☐☐ ╱ ☐☐☐ ╱ ☐

（**District ╱ Street ╱ Investigation point ╱ Surveyed family ╱ Investigator**）

Name ： _____

Tel. number： _____

District / county: _____

Township / street / functional units: _____

Village / neighborhood committee / group： _____

Health Department of Jilin Province

College of public health, Jilin University

Jilin Center for Disease Control and Prevention

June 2012

Informed consent

The investigation of adult chronic diseases and its risk factors in Jilin province was led and coordinated by the Department of health of Jilin province. The school of public health of Jilin University and the Center for Disease Prevention and Control of Jilin Province has been jointly organized. The purpose is to grasp the distribution of the related risk factors of chronic diseases in different regions and different populations of the whole province. It provides a scientific basis for health departments to formulate and evaluate health policies and interventions. Your participation in this survey is the random selection we have chosen in the whole province. The survey includes questionnaire survey, anthropometry, blood pressure measurement, and electrocardiogram and blood biochemical examination. The blood biochemical examination required 3~5ml blood (empty stomach). All of the investigations and tests we have carried out are free of charge. If you agree to take part in the survey, we will give you the physical examination and test results as soon as possible after the completion of the investigation. Meanwhile, we guarantee that all the questions that may be related to your personal and family privacy in the investigation are strictly confidential. This survey will take about half an hour. Please forgive us for the inconvenience. If you have a problem that you don't understand, or if you have any suggestions, please bring it up and we will try our best to solve it.

If you agree to take part in our investigation, please sign it below. Thank you！

Signer's signature (cannot write by the index finger):

_____

Date of filling:

_____

Health Department of Jilin Province

College of public health, Jilin University

Jilin Center for Disease Control and Prevention

Part 1: Demographics

A1   Date of birth：_____Year_____Month_____Day

A2   Sex：   1. male   2. female

A3   Nation：l. Han 2. Man   3. Mongolian 4. Korean   5.other_____

A4   Education level：1. Primary school and below   2. Junior middle school   3. High school   4. undergraduate   5. graduate students and above

A5   Marital status：1. married or cohabiting   2. single or separated   3. widowed or divorced   4. other_____

A6   Occupation：   1. students 2. manual workers 3. mental workers 4. retirees 5. Others

A7   Per capita monthly income of the family (Yuan)：1. <1000   2. 1000~   3. 2000~   4. 3000~   5. 5000~   6. unclear

Part 2: Smoking situation

Active smoking

B1   Do you smoke now? 1. yes   2. no

B2   You smoke average of_____ cigarettes a day, a total of _____ took years

B3   If you have quit smoking, how many years have you been smoking cessation? _____ years

Passive smoking (Note: smokers jump to C1)

B4   Whether there is a passive smoking (Smoke inhaling smoke from other people for more than 15 minutes)? 1. almost no (jump to C1) 2. occasionally 3. often   4. everyday

B5   Passive smoking places (Multiple choices) 1. home 2. workplace 3. restaurants 4.entertainment places 5. other _____

Part 3: Drinking situation

C1   Do you drink now？？   1. yes   2. no

C2 The frequency of drinking is：   1. <1 /week   2. 1~2 times/week   3. 3~5 times/week   4. 6~7 times/week

C3 Drinking type：   1. liquor 2. beer   3. wine 4. other_____

Part 4: Diet situation

D1   Whether the diet is regular？   1. yes   2. no

D2   What is the taste of the diet？   1. salty   2. light   3. moderate

D3   Eating habits: 1. meatarian diet 2. vegetarian diet   3. balanced diet   4. other

D4   What kind of staple food is the main type？   1. rice   2. coarse cereals   3. flour 4. other_____

D5   How many staples are eaten on an average day?   _____g

D6   Do you have breakfast every day？   1. yes   2. no

D7   Food consumption frequency

    D7a. Fresh Vegetables   1. eat regularly or almost every day 2. Sometimes   3. seldom or never eat

    D7b. Fresh fruit   1. eat regularly or almost every day 2. Sometimes   3. seldom or never eat

    D7c. Meat and poultry   1. eat regularly or almost every day 2. Sometimes   3. seldom or never eat

    D7d. Aquatic product   1. eat regularly or almost every day 2. Sometimes   3. seldom or never eat

    D7e. Eggs and bean products   1. eat regularly or almost every day 2. Sometimes   3. seldom or never eat

    D7f. Milk and dairy products   1. eat regularly or almost every day 2. sometimes   3. seldom or never eat

Part 5: Physical activity

E1 What kind of transportation do you often use?？ 　1. Bicycles, 2. Walking, 　3. Bus or driving

E2 Does you often take exercise？ 　　1. Never 　　2. Sometimes 　　　3. Often

E3 where do you take exercise？ 　　1. Home 　　2. Around the place of residence

　　3. to a special site (gym, etc.)

Part 6: Health condition

Number	System	Disease
F1	Infectious and parasitic diseases	1. hepatitis 2. Tuberculosis 3. other _____
F2	Tumor	1. liver cancer 2. lung cancer 3. gastric cancer 4. colon cancer 5. breast cancer 6. cervical cancer 7. prostate cancer 8. thyroid cancer 9. leukemia in 10. other _____
F3	Blood system and immune related diseases	1. anemia 　　2. rheumatism 　　3. other _____
F4	Endocrine, nutritional and metabolic diseases	1.diabetes 2.hyperlipidemia 3.hyperthyroidism 4. Osteoporosis 5. Gout 6. other _____
F5	Mental and behavioral disorders	1.schizophrenia 2.depressio 3. other_____
F6	Nervous system disease	1. cognitive impairment 2. epilepsy 3. Parkinson's 4. other _____
F7	Ophthalmic and appendage disease	1. cataract 2. Glaucoma 3. other _____
F8	Circulatory disease	1. hypertension 2. cerebrovascular disease 3.angina pectoris 4. acute myocardial infarction 5. cor pulmonale 6. varicose veins of lower extremity 7.

		other _____
F9	Respiratory diseases	1. chronic obstructive pulmonary emphysema and 2. asthma 3. nasopharyngitis
		4. chronic bronchitis 5. other _____
F10	Digestive system disease	1. gastric and duodenal ulcers, 2. fatty liver and 3. liver cirrhosis 4. cholecystitis, 5. gallstones 6. abdominal hernia 7. other _____
F11	The musculoskeletal system and connective tissue diseases	1. rheumatoid arthritis 2. intervertebral disc disease in 3. other _____
F12	Diseases of genitourinary system	1.nephritis 2.urolithiasis 3.prostatitis 4.gynecologic inflammation 5. breast disease 6. other _____
F13	Injury, poisoning, etc	1. injury (trauma, burn) 2. Poisoning 3. other _____
F14	Other	1. _____ 2. _____

Hypertension control

F15 How long is the last time to measure the blood pressure distance? (Excluding the survey in this survey)

1. Within 30 days 2. Over 30 days 3. Never measured 4. Not clear

F16 Do you take measures to control your blood pressure? 1. yes 2. no

F17 What measures are taken to control blood pressure? (Multiple choices)

1. take medicine according to doctor's advice 2. control diet 3. moderate exercise

4. other, please specify _____

Blood glucose control

F18 How long is the last time to measure the blood sugar distance? (Excluding the survey in this survey)

1.Within 30 days 2. Over 30 days 3. Never measured 4. Not clear

F19 Do you take measures to control your blood sugar?

1. yes 2. no

F20 What measures are taken to control blood sugar? (Multiple choices)

1. take medicine according to doctor's advice   2. control diet   3. moderate exercise   4. other, please specify _____

Blood lipid control

F21   How long is the last time to measure the blood lipid distance? (Excluding the survey in this survey)

1.Within 30 days   2. Over 30 days   3. Never measured   4. Not clear

F22   Whether is your dyslipidemia diagnosed by a district or more hospital?

1. yes   2. No

F23   Do you take measures to control your blood lipid?

1. yes   2. no

F24   What measures are taken to control blood lipid? (Multiple choices)

1. take medicine according to doctor's advice   2. control diet   3. moderate exercise   4. other, please specify _____

Family history of major chronic diseases

F25   Did your grandparents, parents, and brothers and sisters have been diagnosed with the following chronic diseases by a county (District) or above hospital? (Multiple choices)

1. had not been diagnosed with any chronic disease

2. circulatory system diseases (hypertension, angina, myocardial infarction, cerebrovascular disease, etc.)

3. diabetes

4. respiratory system diseases (such as chronic bronchitis, emphysema, asthma)

5. tumor

6. hyperlipidemia

7. other, please specify _____

8. unclear

Menopause   (only for 35 years old and above)

F26   Do you have a menopause?   1. Yes, age of menopause:_____   2. no

The end time of the survey:_____

Part 7: Anthropometric results

G1   Height：   _____ cm

G2   Weight：   _____ kg

G3   Waist：   _____ cm

G4   Hipline：   _____ cm

G5   Somatic activity：   1. freely   2. Inability or involuntary tremor   3. paralysis   4. Limited activity

G6   Blood pressure：   _____/_____ （mmHg）

G7   Heart rate：   _____times/min

G8   Electrocardiogram：   1. normal   2. Roughly normal   3. abnormal _____

G9   Blood biochemistry：   1. Blood sugar：_____mmol/L

                               2. TG：_____mmol/L

                               3. TC：_____mmol/L

                               4. LDL：_____mmol/L

                               5. HDL：_____mmol/L

Surveyor's signature：_____   **Date**：_____

Quality controller's signature：_____   **Date**：_____