Social Capital and Risk of Tuberculosis in Elderly Population

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Background

- In Japan, two thirds of newly notified tuberculosis (TB) cases were older than 65 years.

- A large part of TB in elderly are attributable to **endogenous reactivation** from past infection of *Mycobacterium tuberculosis.*

- Risk factors of reactivation are not clearly known.

- We explored potential social capital and risk of developing TB in elderly population.

Social Capital

Social capital is defined by the OECD as "networks together with shared norms, values and understandings that facilitate co-operation within or among groups"

Networks as real-world links between groups or individuals.

Networks of friends, family networks, networks of former colleagues, and so on.

Social capital, which seems irrelevant to health, is thought to improve local health standards by sharing health information and reducing stress.

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Glossary

Twenty years of social capital and health research: a glossary

S Moore[1], I Kawachi[2]

Author affiliations +

Abstract

Research on social capital in public health is approaching its 20th anniversary. Over this period, there have been rich and productive debates on the definition, measurement and importance of social capital for public health research and practice. As a result, the concepts and measures characterising social capital and health research have also evolved, often drawing from research in the social, political and behavioural sciences. The multidisciplinary adaptation of social capital-related concepts to study health has made it challenging for researchers to reach consensus on a common theoretical approach. This glossary thus aims to provide a general overview without recommending any particular approach. Based on our knowledge and research on social capital and health, we have selected key concepts and terms that have gained prominence over the last decade and complement an earlier glossary on social capital and health.

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Methods

- Information regarding social capital among the general elderly persons were collected directly from the dataset of the Japan Gerontological Evaluation Study (JAGES) project.

- The same information was collected from the elderly TB patients through a questionnaire survey, which was developed specifically for this study, by extracting 26 questions related to TB and social capital from the original JAGES questionnaire.

- The survey was sent to TB patients who were 65 years old or older and who were not receiving special care for the aged at the time of TB diagnosis.

The Japan Gerontological Evaluation Study (JAGES)

What is JAGES?
The Japan Gerontological Evaluation Study (JAGES) project aims to build a scientific backbone from the viewpoint of preventive medicine to establish a society of healthy longevity.
We have been collaborating with 40 municipalities all over Japan to investigate the living conditions of approximately 300,000 adults aged 65 and above. More than 30 researchers from colleges, universities, and national institutions in Japan are currently conducting a wide variety of studies using our data.

https://www.jages.net/about_jages/
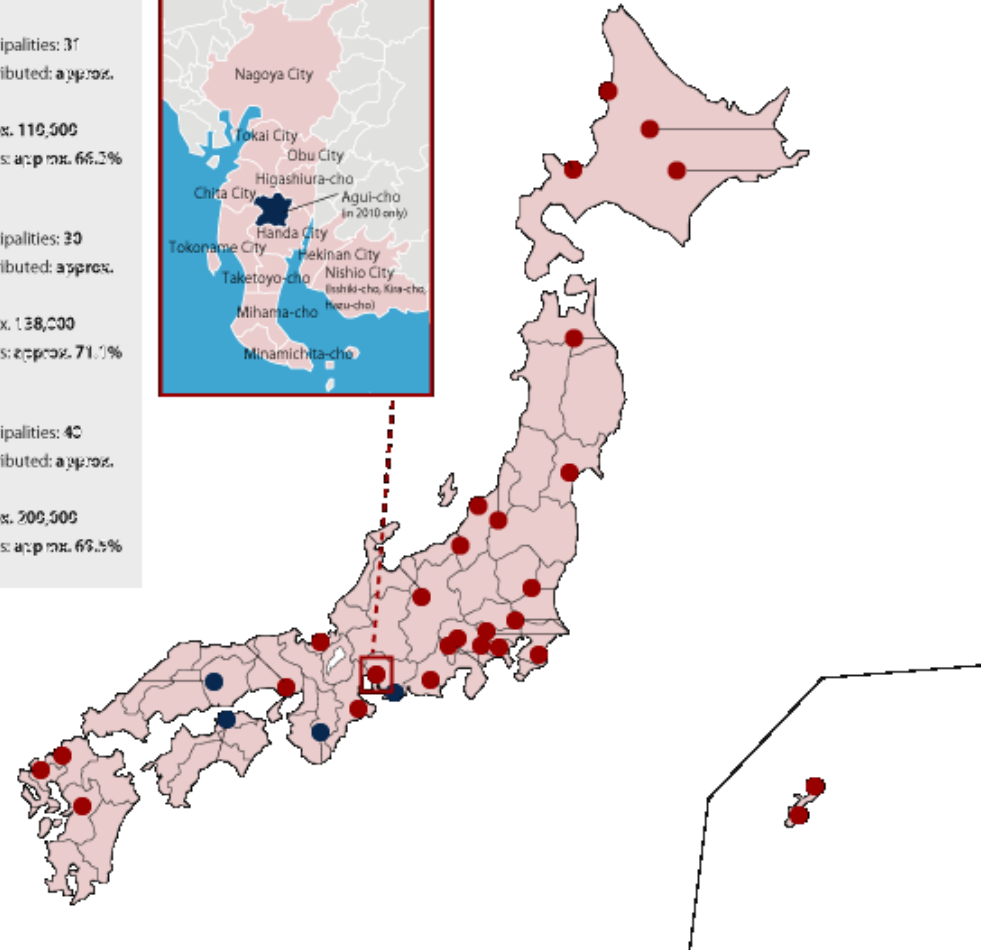

JAGES Survey Fields

JAGES 2010/11
No. of participating municipalities: 31
No. of questionnaires distributed: approx. 170,000
No. of respondents: approx. 110,000
Percentage of respondents: approx. 66.3%

JAGES 2013/14
No. of participating municipalities: 30
No. of questionnaires distributed: approx. 195,000
No. of respondents: approx. 138,000
Percentage of respondents: approx. 71.1%

JAGES 2016/17
No. of participating municipalities: 40
No. of questionnaires distributed: approx. 300,000
No. of respondents: approx. 200,000
Percentage of respondents: approx. 66.5%

Nagoya City
Tokai City
Obu City
Higashiura-cho
Chita City — Agui-cho (in 2010 only)
Tokoname City — Handa City
Taketoyo-cho — Hekinan City — Nishio City
Mihama-cho — (Iisshiki-cho, Kira-cho, Kozu-cho)
Minamichita-cho

Survey items (in the 2016 survey)

A questionnaire booklet consists of 16 pages. Each booklet has two parts: Part 1 "Core items of questions" (10 pages) and Part 2 "Thematic items of questions" (2 pages). The former part is designed for all research subjects and comprises various questions about relevant factors of preventive care and important adjustment factors, while the latter has eight different thematic topics of questions (Versions A-H), and it is intended to be used for analytical purposes. Each research subject receives, at random, one of these eight questionnaire booklets. Eight versions of booklets are assigned and distributed evenly to research subjects in each survey district.

https://www.jages.net/about_jages/

Part 1. Core items of questions	
Physical and functional status	Morbidity, health behavior, body mass index (BMI), experience of fall
Psychology	Depression, happiness
Society	Social networks, social supports
Socioeconomic status	Annual household/family income, size of household, education, employment (longest period of employment), pension, welfare
Participation in social groups	Volunteer activities, sports activities, residential/neighborhood associations, hobbies
Community environment	Trust, reciprocity, social security, festivities, neighborhood gatherings (in local communities)
Going outside	Frequency of going outside, transportation

| Part 2. Thematic items of questions	
Version A	Oral health, community environment, habit of drinking green tea, major life events over the past year
Version B	Sleep and diet, major life events in the past
Version C	Health status, participation in social activities, health conditions of eyes and ears, use of the Internet
Version D	Medical examination/consultation, access to primary care, desire at the time of passing
Version E	Smoking, hobbies, sports activities
Version F	Long-term care, community resources, driver's license
Version G	Functional/health foods, health information
Version H	Community environment, dementia, stress

Results

- As of the end of 2019, we had received responses from 60 TB patients.
- We compared the data from TB patients with JAGES data (N=180,021) as a control.
- Among 60 TB patients, 75% were males, 25% were females.

- After adjustment with age, sex, BMI and smoking status,
  ① having no hobby (OR 2.6, 95%CI 1.4-4.8),
  ② going out less than 3 times a week (OR 2.6, 95%CI 1.4-4.6),
  ③ living alone (OR 2.4, 95%CI 1.2-4.8)
  ④ having started work within a year (OR4.2, 95%CI 1.6-10.8)
  were associated with TB patients.

Characteristics of TB patients and JAGES

		TB patients		JAGES	
Total		60	(%)	180,021	(%)
sex	Male	45	(75)	82,257	(46)
	Female	15	(25)	97,734	(54)
	Unknown			30	(0.02)
average age		77.5		74.2	

Adjusted Odds Ratio
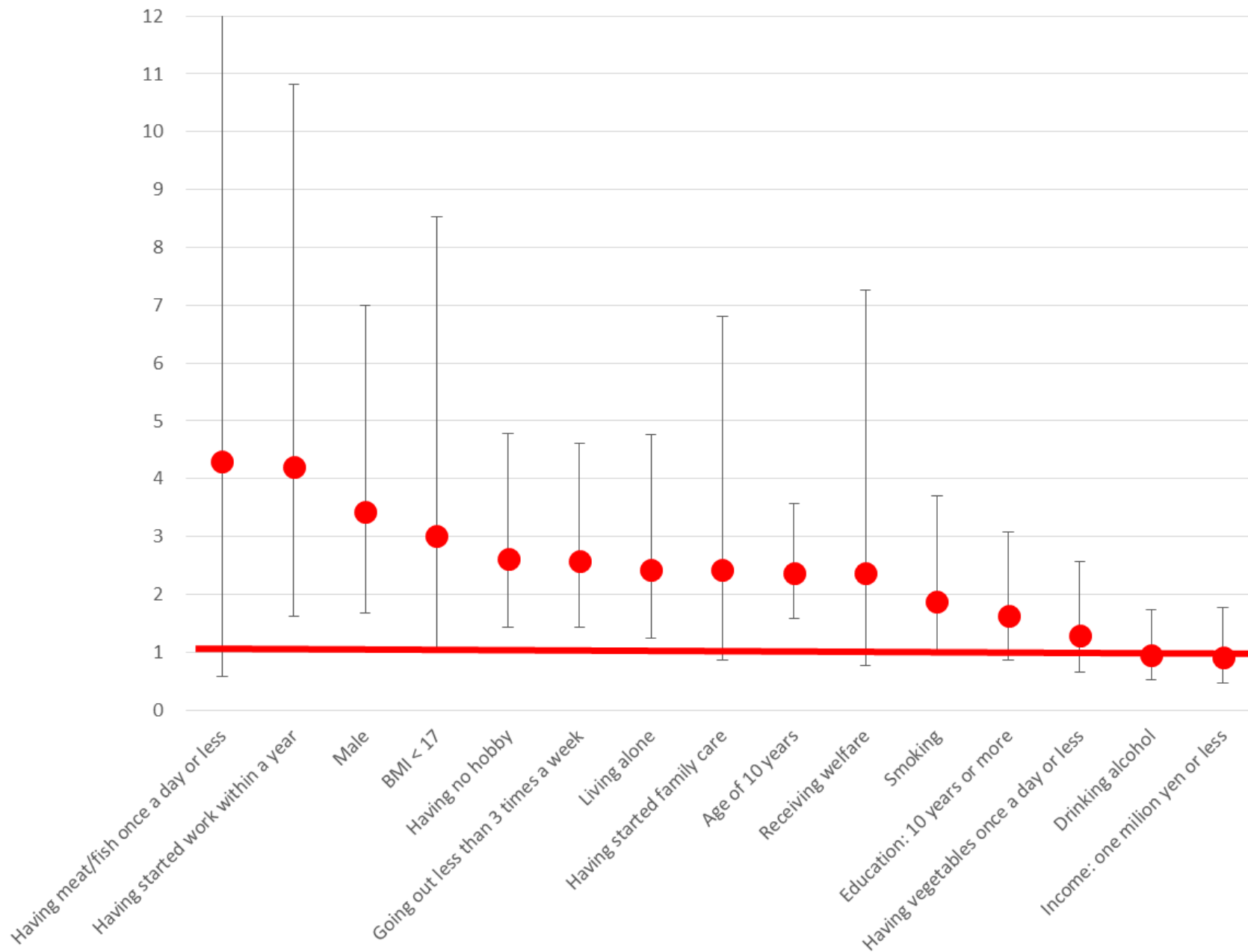
Conclusion

- Gender, age and socioeconomic factors were associated with TB patients group.
- <u>Some factors related to social capital may influence developing TB in elderly population.</u>
- Exercise, basic health status, and even the stress of living may be affected with developing TB in elderly.