# Gender differences in conversations that play roles in preventing dementia among the elderly in Japan

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# 1. Purposes of this study

(1) We would show that by statistical evidence conversation might play different roles for men and women in reducing a risk of dementia.

(2) By showing it, we would argue that interventions of Japanese local governments may be partly ineffective for old men.

# 2. Theoretical background

- It's pointed out that involvement with social networks may reduce a risk of dementia (e.g., Fratiglioni et al. 2000)

Fratoglioni L, Wang H, Ericsson K, Maytan M, Winblad B, Influence of social network on occurrence of dementia: a community-based longitudinal study. The Lancet 2000; 355: 1315-9.

- In more focused context, it's shown that "**conversation**" can play an important role in reducing a risk of dementia (e.g., Otake 2007).

Otake M, Development of support service for prevention and recovery from dementia and science of lethe. The 21st Annual Conference of the Japanese Society for Artificial Intelligence 2007

# 3. Our point

However, we speculate that this may be NOT simply true similarly among men and women.

There is not much research of the role of conversation in preventing dementia especially focusing on **gender** difference.

**Does conversation play an important role for both men and women?**

# 4. Data, methods, & variables

- AGES project, cohort data (N=3,771)

  wave1 in 2000, wave2 in 2003 (& 2004)

- Multiple logistic regression models

Dependent V:

Suffering from dementia (=**1**), or not (=**0**) in wave2

# 4. Data, methods, & variables

Independent V: conversation in wave1

a) Talk with family or friends(=**1**), or not(=**0**)

b) Talk to young people(=**1**), or(=**0**)

- Control V:

Self-rated health, Education, Income

Ages (65-69=**1**, 70-74=**2**, 75-79=**3**, 80-84=**4**, 85+=**5**)

# 5. Results

Table 1 Logistic regression model (Reduction of risk of dementia)

| | women | men |
|---|---|---|
| (a) Talk with family & friends | 1.077 (.215)*** | |
| (b) Talk to young people | .151 (.230) | |
| Intercept | -4.098 (.357)*** | |
| Nagelkerke $R^2$ | .051 | |

Finding 1:

"Talking with family and friends" is significantly related to the reduction of a risk of dementia among WOMEN (Odds Ratio=2.9)

Finding 2: However, it's NOT true among MEN

Table 2 Logistic regression model (Reduction of risk of dementia)

| | women | men |
|---|---|---|
| (a) Talk with family & friends | .497 (.237)* | -.126 (.307) |
| (b) Talk to young people | -.047 (.243) | -.085 (.284) |
| Age | .623 (.083)*** | .385 (.094)*** |
| Self-rated Health | .063 (.212) | .304 (.249) |
| Education | .165 (.149) | -.012 (.161) |

Another question:

**Variable (b) among women** is NOT significantly related to reduction of a risk of dementia?

Table 3 Logistic regression model : Women (Reduction of risk of dementia)

| | 1 | 2 |
|---|---|---|
| (a) Talk with family & friends | --- | |
| (b) Talk to young people | .585 (.210)** | |
| Age | --- | |
| Intercept | -3.189 (.294)*** | |
| Nagelkerke $R^2$ | .012 | |

1. Without (a) => (b) is significantly related.
2. Inserting "Age" => **makes a change** !

Considering 1 & 2,

=> create an **interaction term**

<Age> * <Talk to young people>

Table 4 Logistic regression model : Women (Reduction of risk of dementia)

| | Women |
|---|---|
| (a) Talk with family & friends | .470 (.235)* |
| (b) Talk to young people | 1.311 (.589)* |
| Age | 1.143 (.233)*** |
| Self-rated Health | .087 (.212) |
| Education | .157 (.149) |

**=> (b): talking to young people works more strongly, when the elderly are younger.**

Interaction is statistically significant.

(b) is also significant.

Age1 (65-69 yrs old) => coefficient = .928x
Age2 (70-74 yrs old) => coefficient = .545x
…Age3, Age4, …

# 6. Policy implication

- Many salons (chances to have conversation) are provided by local governments in Japan. People complain “Old men are not active to participate!”

- But such an intervention may NOT work for health promotion for men.

- In recent Japan, typical old men are not talkative. (typical old women are very active and talkative)

Therefore, other types of interventions should be provided for men? (e.g., betting, chess)

# 7. Conclusion

This study may suggest the importance of considering gender difference in public health studies.

This may not be just the story of Japan, the elderly, or conversation and dementia.