

# Gender Differentials on Health: Bring back the household context effect



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Evidence from the Taiwan 2002 Social Development Survey

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# Research Questions

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- Does gender difference on self-rated health still exist after controlling for personal resources and burdens?
- How gender difference interact with household characteristics, such as household income level, and the extent of care-giving in household?

# Data



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## 2002 Social Development Survey on Health and Safety

- (1) **Sampling population:** registered households.
- (2) **Sample Size:** approximately **50,354** people in **13,066** households.
- (3) **Sampling method:** 2-stage stratified sampling: village or neighborhood and household.



# Sample included

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- **Including Persons Aged  $>21$   
 $<65$** 
  - **Excluding students**
    - **12,009 families**
  - **29,312 respondents**



# Statistical Methods

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- **Hierarchical Linear Models (multilevel framework)**
- **Taking both individual and household level of variables into account**



# Dependent Variable: Self-rated Health

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**Respondents' assessment about own health condition over last three months**

<b>1. Poor and not capable in self-care</b>	<b>0.8%</b>
<b>2. Poor but still capable in self-care</b>	<b>7.4%</b>
<b>3. Fair</b>	<b>41.7%</b>
<b>4. Good health</b>	<b>50.1%</b>



# Gender Distribution

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**Women 49.5%**

**Men 50.5%**



# Individual Resources and burdens (IVs)

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**Level-1 variables**



# Education and Employment

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- **Education**

Elementary	44.5%
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Junior	32%
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Senior	21.6%
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University & Above	1.9%
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- **Employed** 70.6%



# Personal Income

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<b>Under 20K</b>	<b>41.7%</b>
<b>20K-30K</b>	<b>17.1%</b>
<b>30K-40K</b>	<b>15.3%</b>
<b>40K-60K</b>	<b>14.4%</b>
<b>60K-80K</b>	<b>6.9%</b>
<b>Above 80K</b>	<b>4.6%</b>

in NT\$



# Marital Status

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- **Married**      **70.5%**
- **Single**        **22.4%**
- **Divorced**     **3.7%**
- **Widowed**      **3.4%**



# Household Head, Disability and Accidents

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- **Household Head** 38.6%
- **Disabled** 3.5%
- **Accidents over last 3m** 4.1%

# Household Resources and Responsibility (IVs)



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**Level-2 variables  
(n=12,009 households)**



# Household Size

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<b>Under 2 people</b>	<b>8.1%</b>
<b>2 people</b>	<b>13.1%</b>
<b>3 people</b>	<b>17.6%</b>
<b>4 people</b>	<b>24.9%</b>
<b>5 people</b>	<b>18.2%</b>
<b>Above 5 people</b>	<b>18.2%</b>

Mean (SD): 4 people (1.95)

# Household Income Sources



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- **85.4% of households have income sources**
  - mean (SD): 2.34 people employed per household (1.52)
- **90.6% of households have working members**
  - mean (SD): 1.82 people worked per household (1.2)



# Household Top-Income Level

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■ Under 20K	14.6%
■ 20K-30K	17.5%
■ 30K-40K	20.4%
■ 40K-60K	24.0%
■ 60K-80K	13.6%
■ Above 80K	9.8%

in NT\$



# Household Responsibilities

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- **24.9% of households have elderly aged above 65 yrs.**
  - mean (SD): 0.32 elderly (0.61)
- **47.8% of households have young members aged under 15 yrs.**
  - mean (SD): 0.88 young members (1.13)



# Household Responsibilities

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- **8.6% of households have members disabled**
- **7% of households have members in accidents**




# Multilevel Modeling

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## Findings

# Gender Gap in Self-rated Health



	Woman
<b>Baseline Model</b>	-0.232**
<b>Level-1 Variables controlled</b>	-0.116**
<b>Level-2 Variables controlled</b>	-0.231***
<b>Cross-level effect controlled</b>	-0.213***

\* $p < 0.05$  \*\*\*,  $p < 0.001$ .

Baseline model includes gender and age.

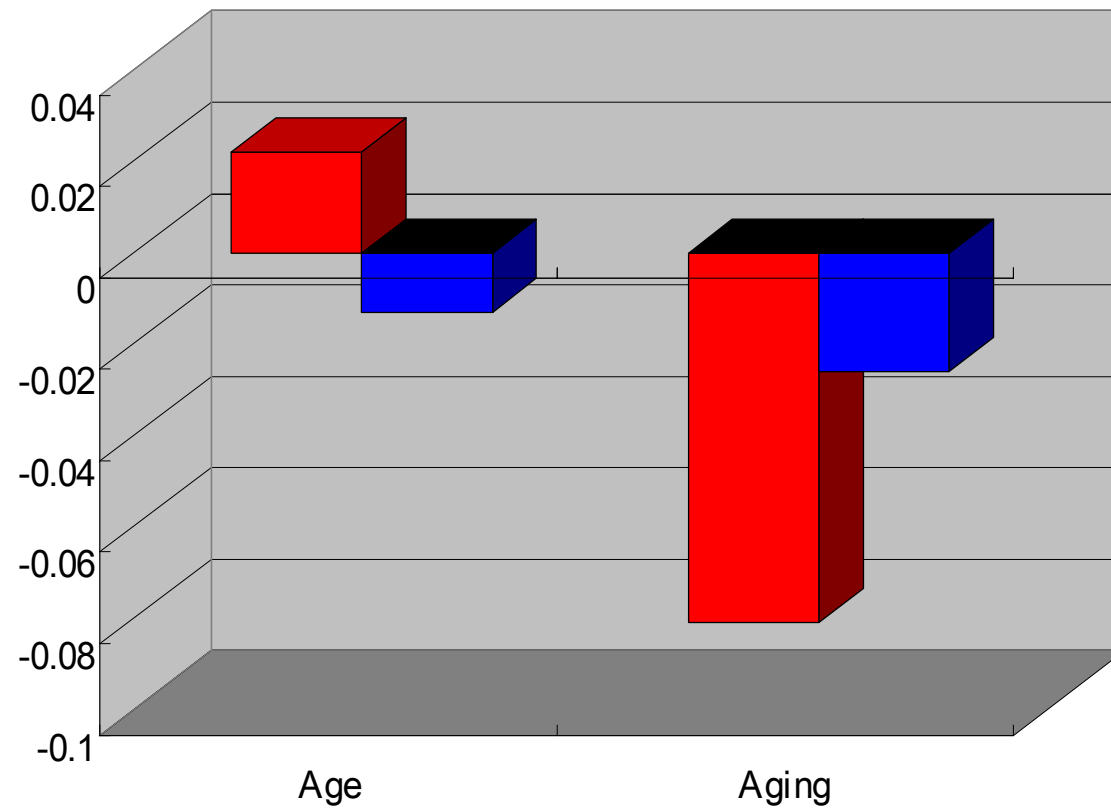
# Individual Resources and burdens



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**LEVEL 1**

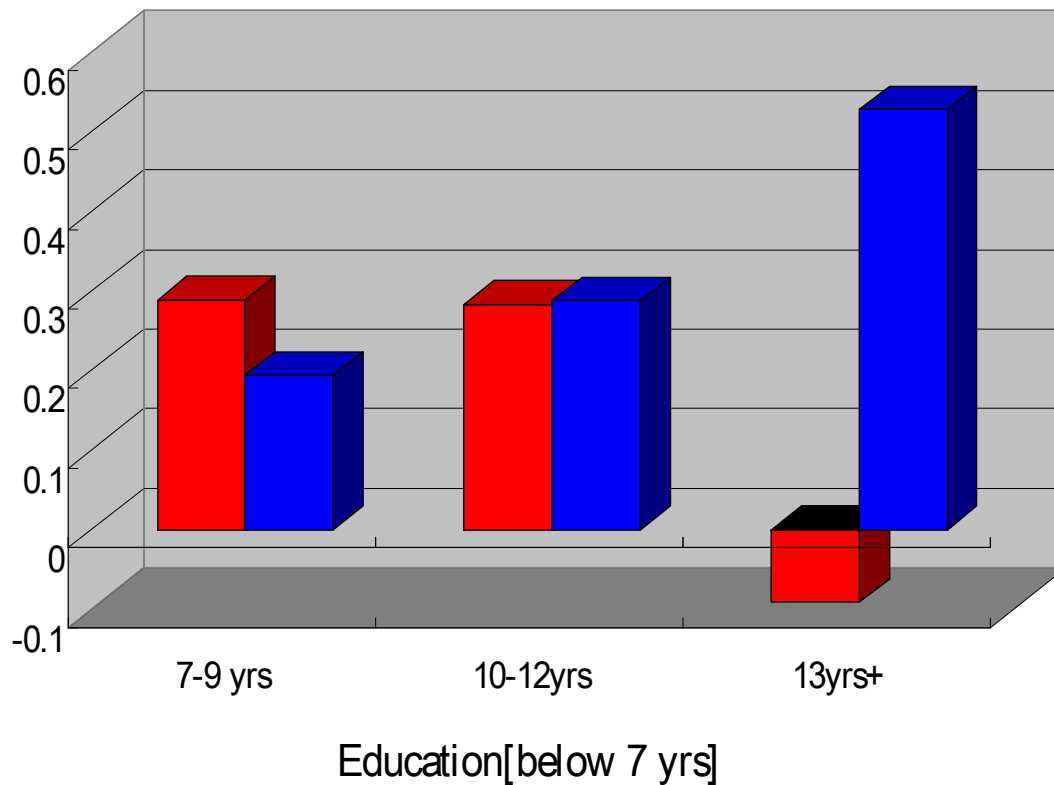
# Age Effect



Aging effect is significant only for women

Women  
Men

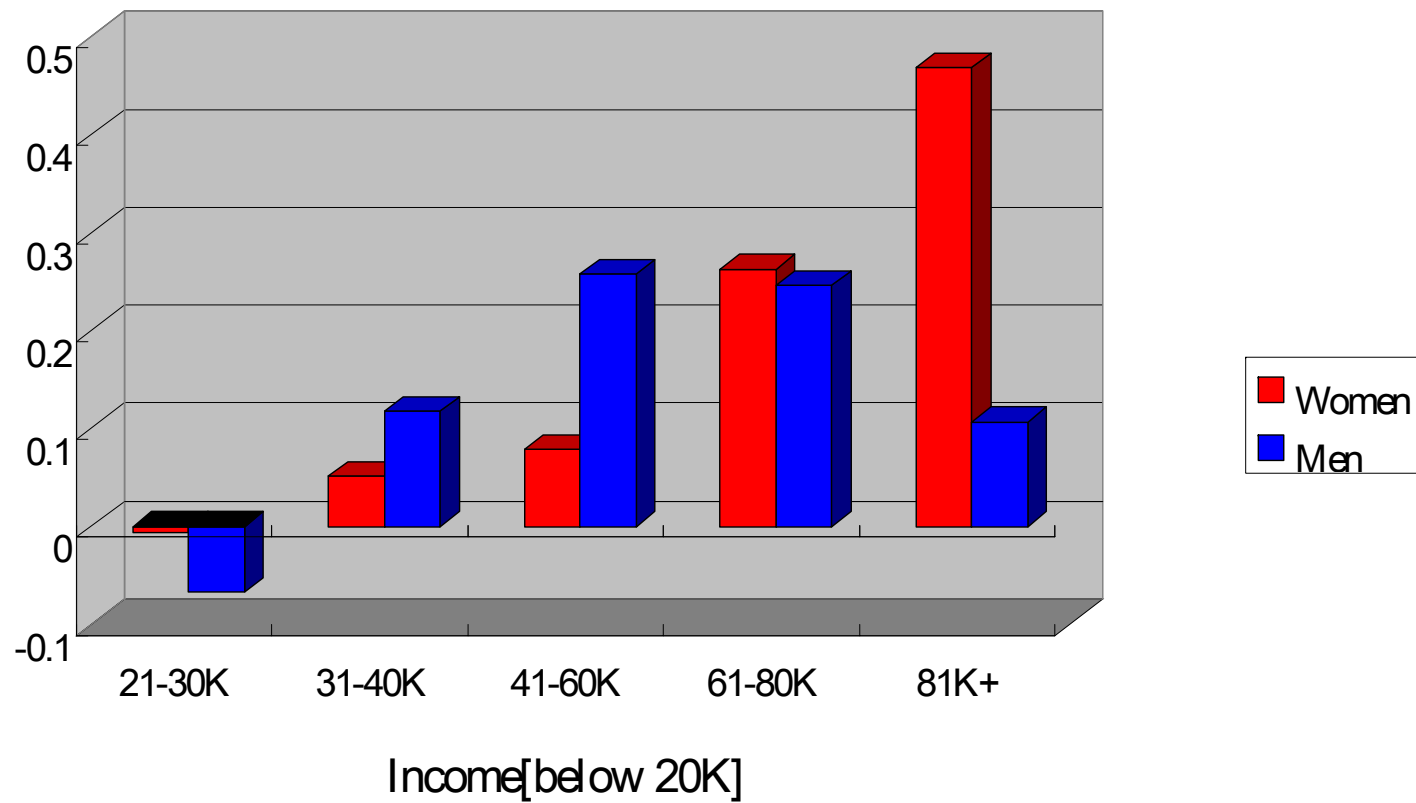
# Education effect



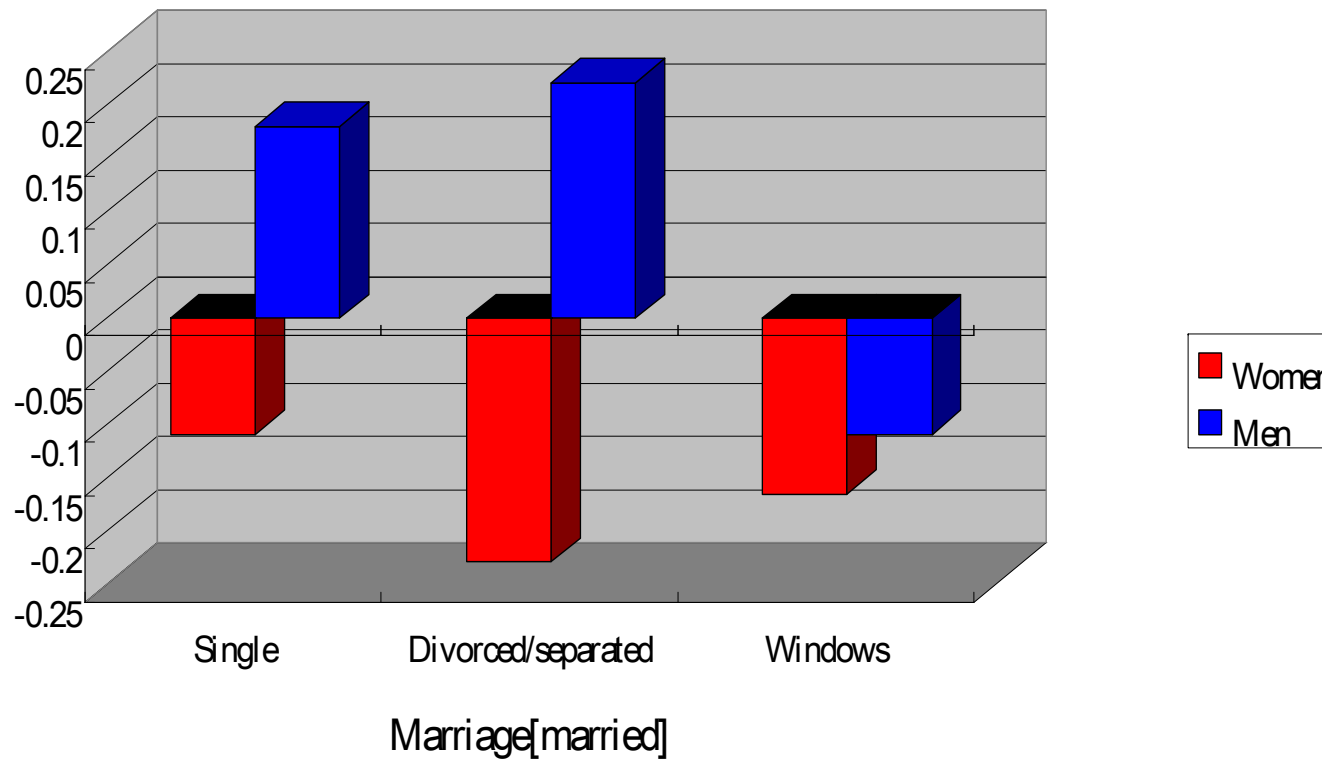
Education effect is consistently significant for men

Women  
Men

# Income effect (ns)

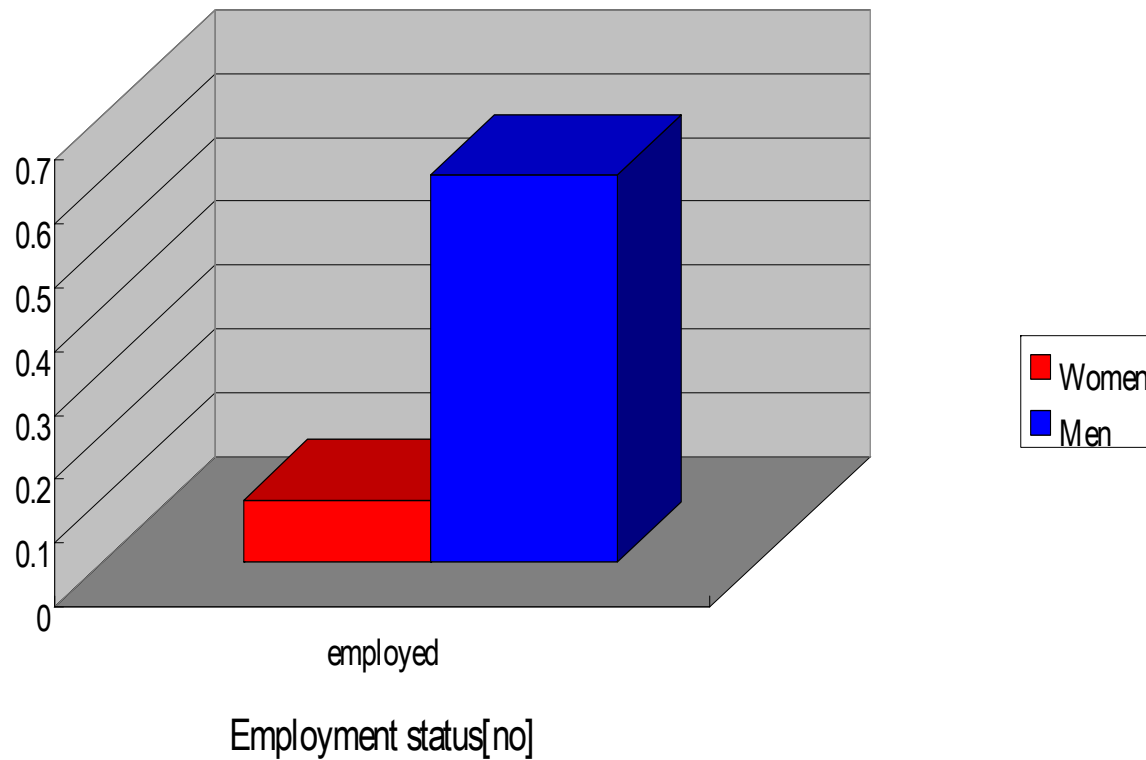


# Marital Status Effect



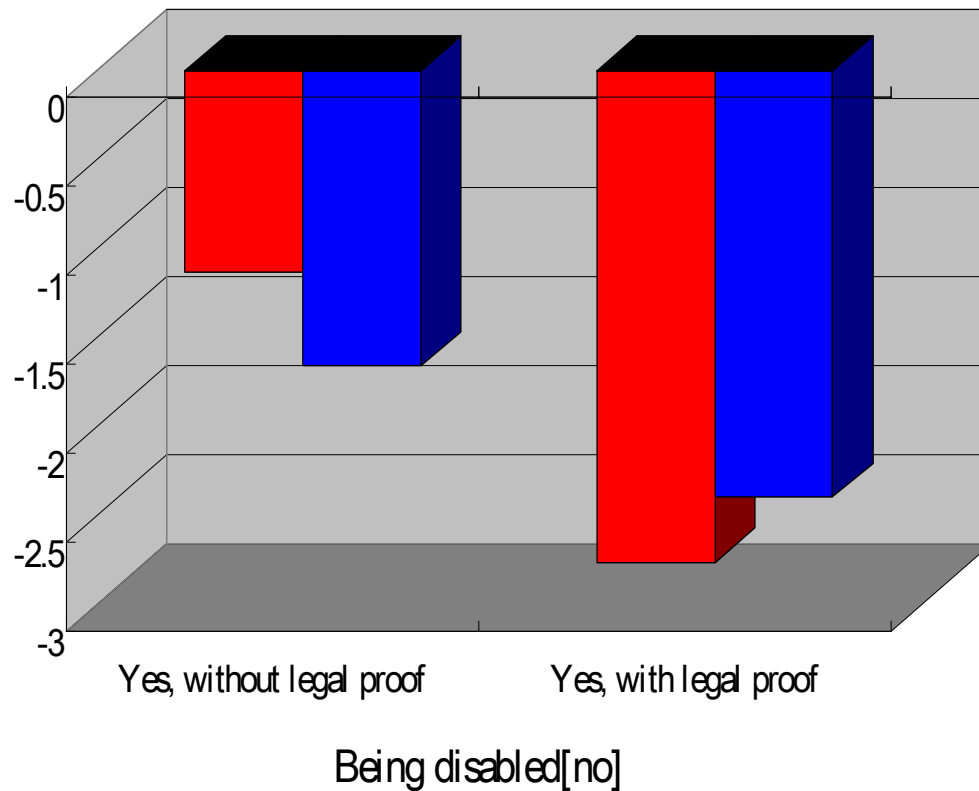
Single status  
is significant  
for men

# Employment Effect



It is  
significant  
only for  
men

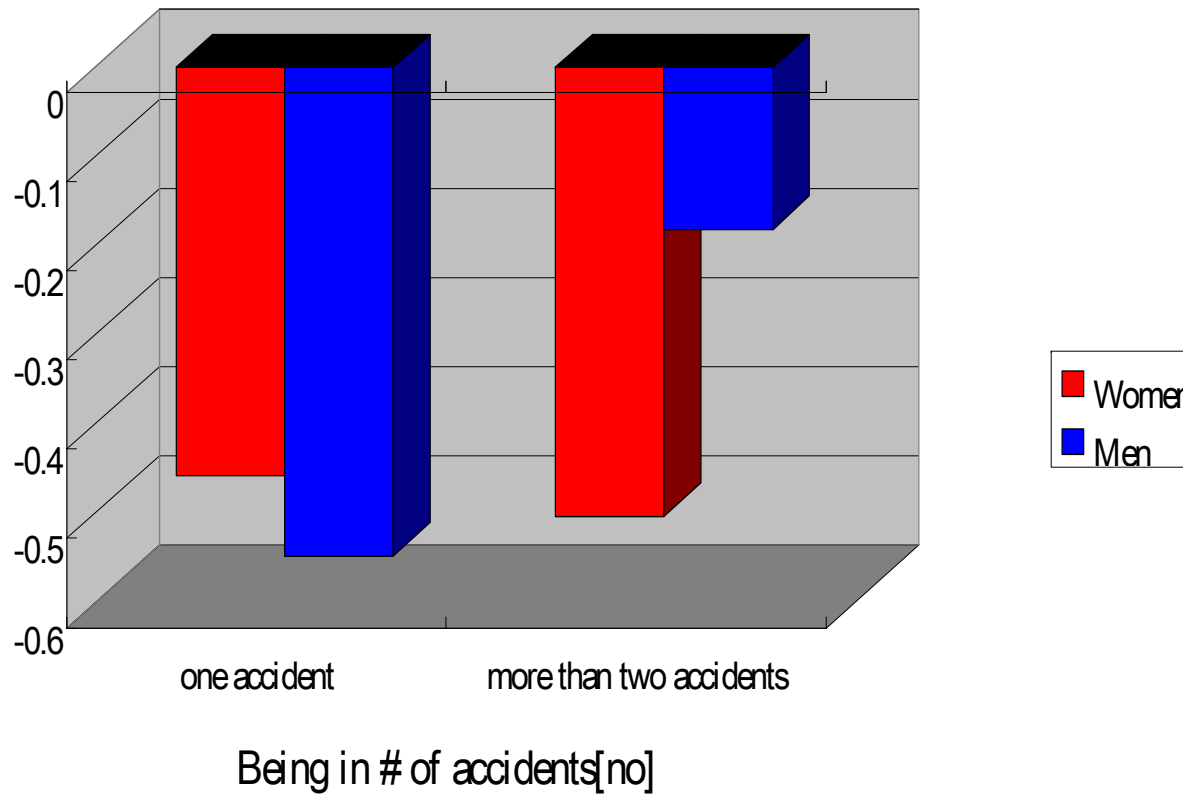
# Disability & Accidents Effect



Significant  
for both  
women and  
men



# Disability & Accidents



Significant  
for both  
women and  
men

# Household

# Characteristics

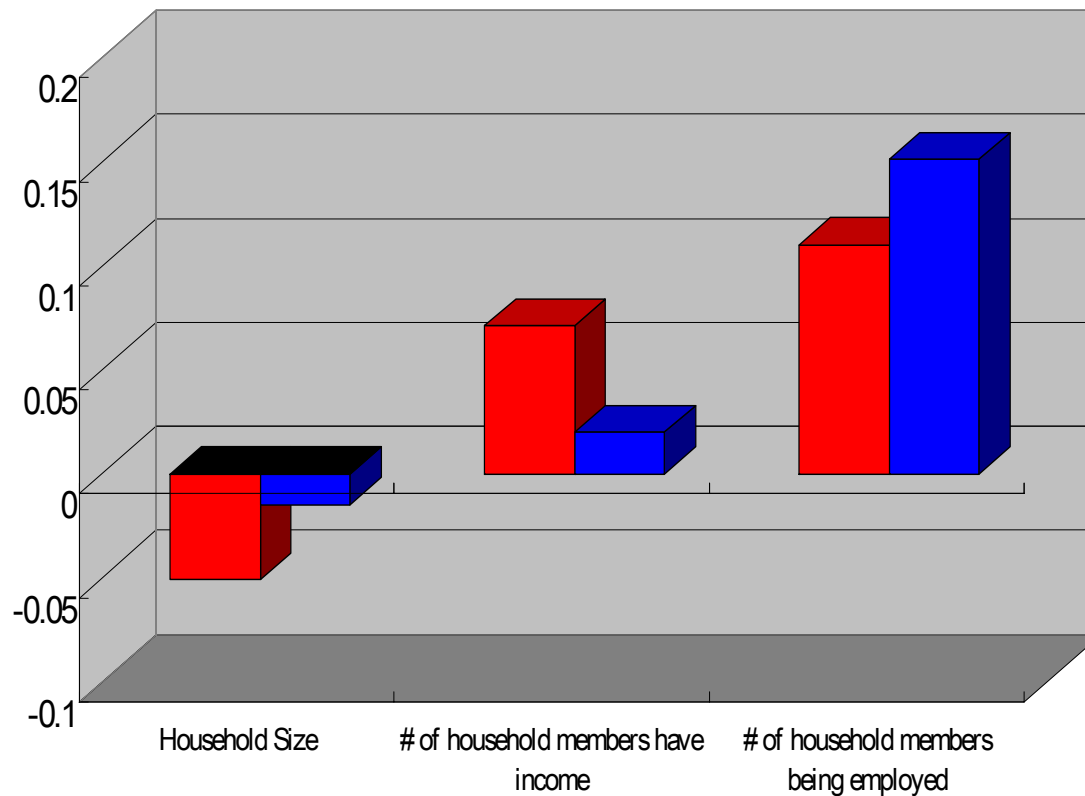


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**LEVEL 2 :**

**Resources and Responsibility**

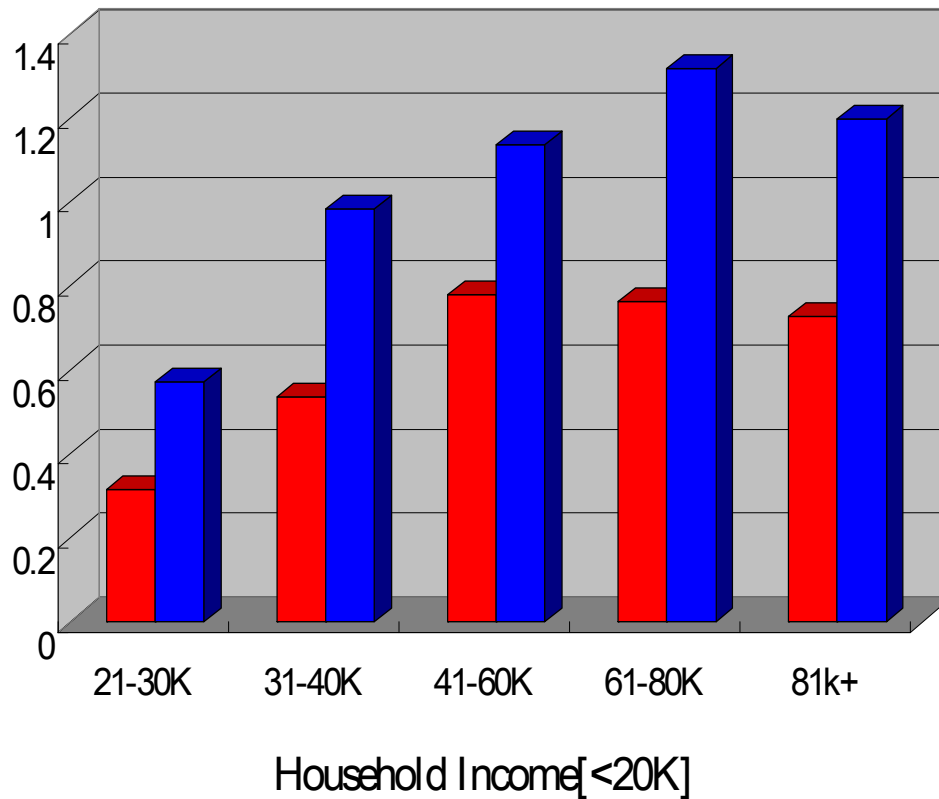
# Household Size & Composition Effect



Significant  
for both  
women and  
men

Women  
Men

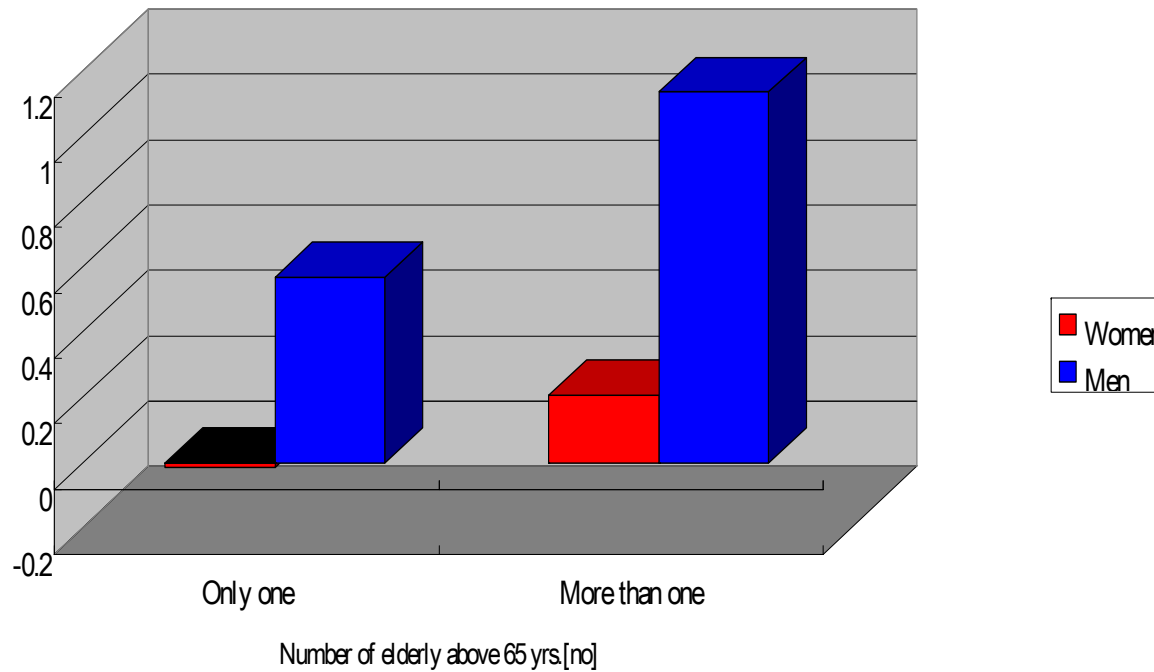
# Household Income Effect



Significant  
for both  
women and  
men

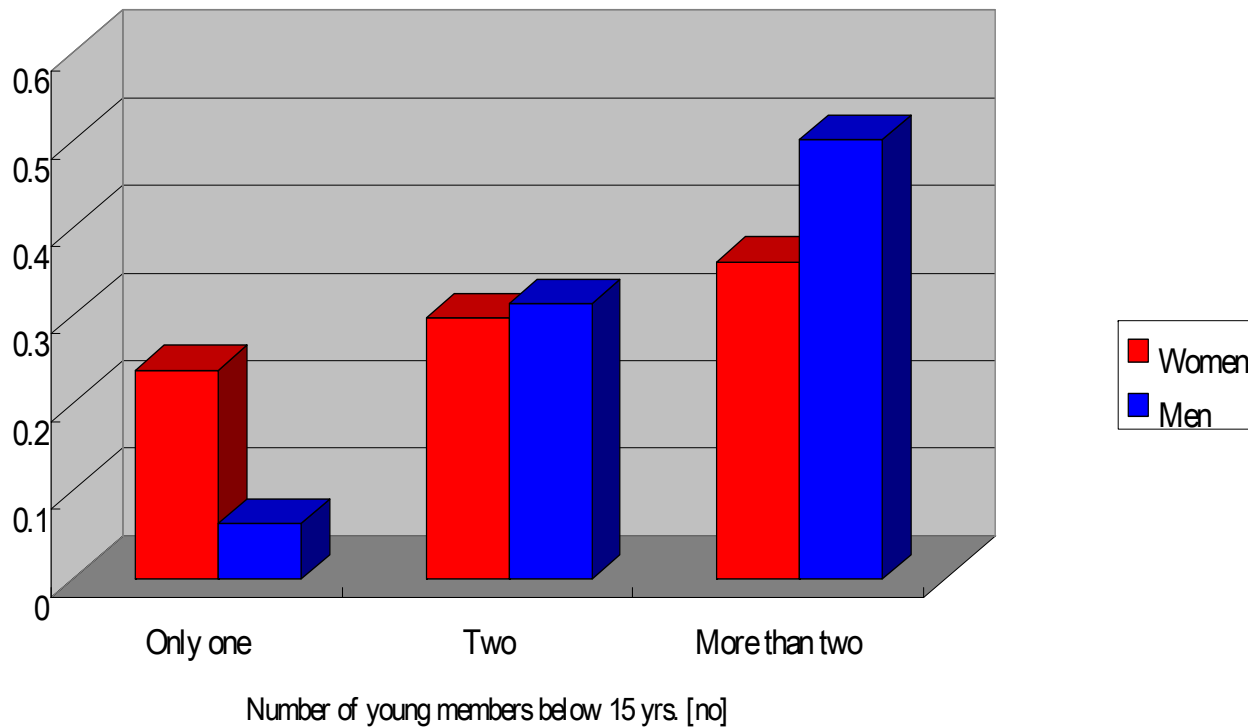


# Household Care-Giving: Elderly



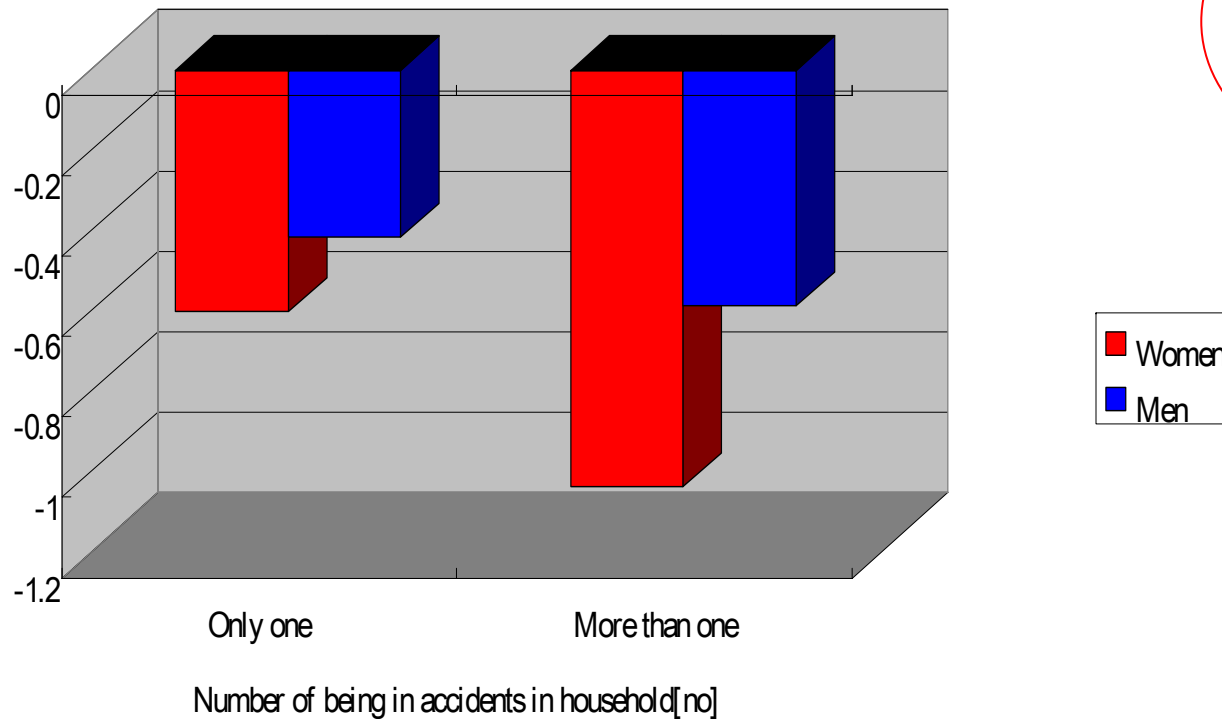
Significant  
for both  
women and  
men

# Household Care-Giving: Young members



Significant  
for both  
women and  
men

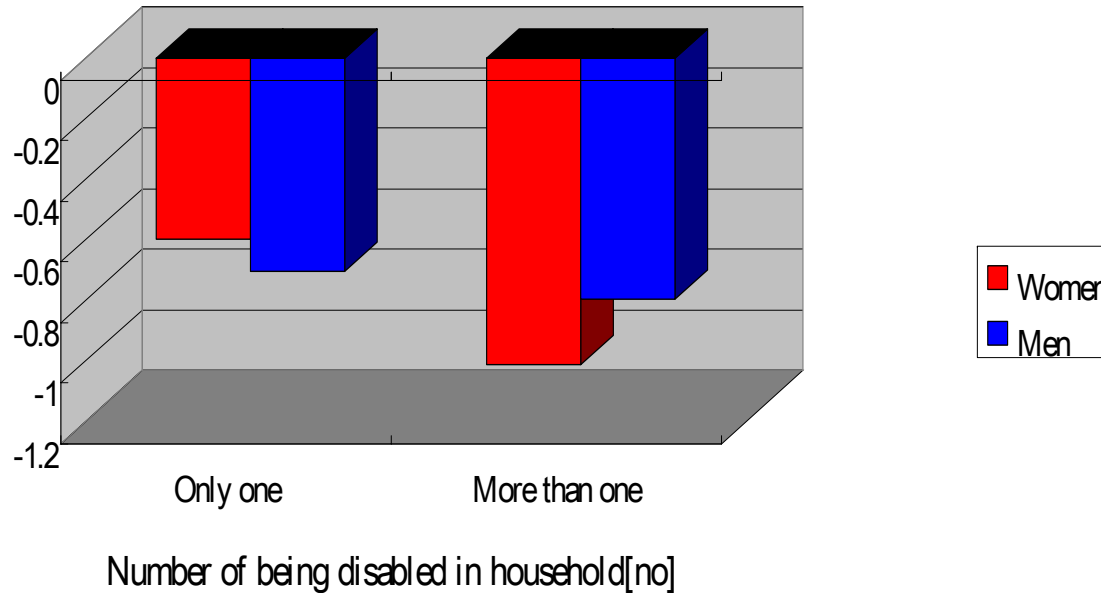
# Household Care-Giving: Injured Members



Significant  
for both  
women and  
men

# Household Care-Giving: Disabled Members

Significant  
for both  
women and  
men





# ONE MORE TWIST

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**Cross-Level Effect** : How does household characteristics interact with gender difference on health?

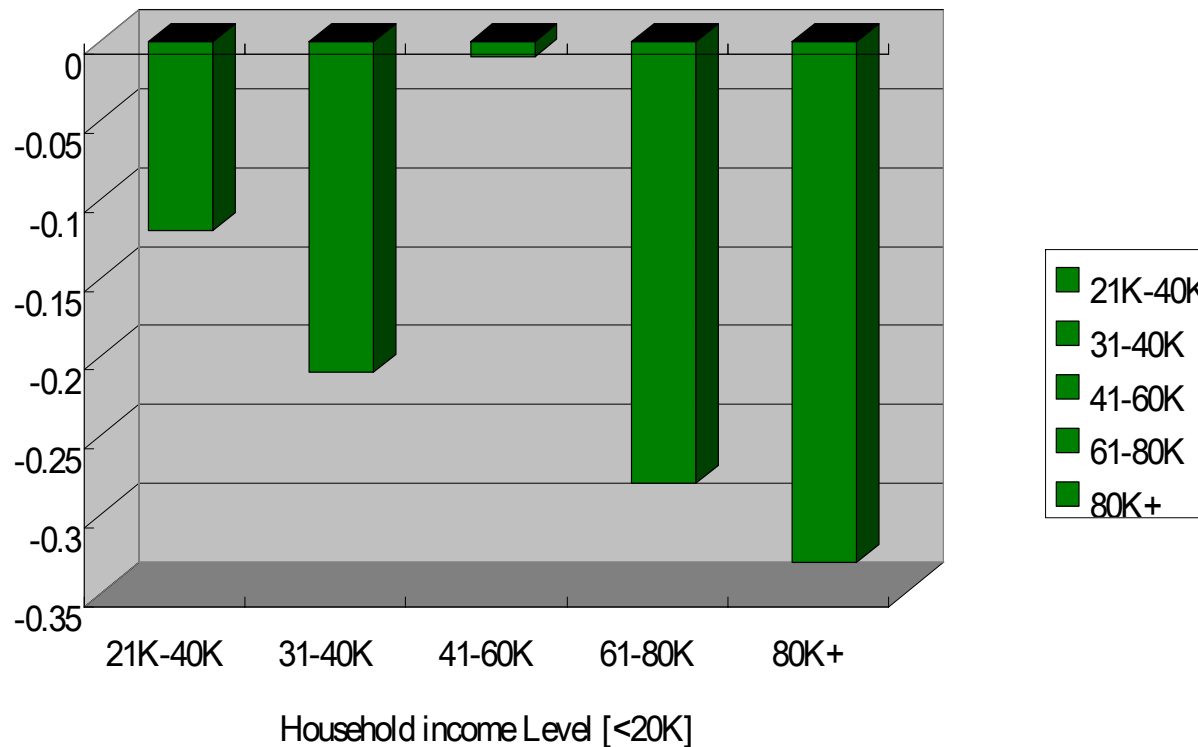


# Questions

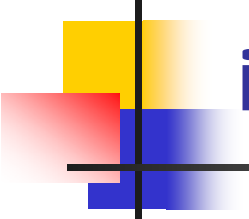
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- Would gender gap decrease when women in high level of household income? (H1: not supported)
  
- Would gender gap increase when women in household that is in need of care for elderly, young members, disabled and injured member? (H2: partly supported)

# Answer for 1: Decrease in Self-rated Health in Different Levels of Household Income for Women (as compared to men)



Significant for two higher levels of household income



## Answer for 2: Gender difference on health increases when household is in need of care-giving

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- Woman reported good health when household has only one young member aged below 15 yrs. (0.15) as compared no younger member, but men reported worse health (-0.16).



# Conclusions (1)

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- Gender gap still exists when considering personal and household characteristics.
  - Importantly, gender effect is suppressed when household context is not considered.
- Women and men may experience different health benefit from personal resources, yet suffer similarly from personal burdens.
- Women and men are affected similarly by households that have elderly, disabled and injured members.



## Conclusions (2)

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- Women and men react differently when having young members in the household. Women have health benefit, but men don't.
- Women do not benefit from living in high level of household income.
  - Gender status differentials and women's lack of autonomy may be two possible explanation.