Religious activity, life and ADL disability-free life expectancy in Taiwan

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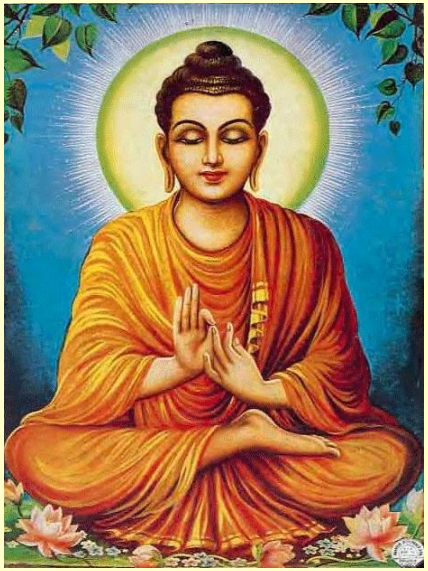


Background

* Religion is an historical determinant of health.

* The last couple of decades have seen a burgeoning of interest in the association.

* Consensus across the health literature that religion is good for your health.

Mechanisms

* Mechanisms often described in terms of social characteristics.

* Does this hold where Judeo-Christian religion is not dominant, such as in Taiwan?

* Buddhism, as an example, is often centered on meditative private solitary activity.

* Only a small percent of the research on religion and health has looked at Asia.

Motivations

1) Determine whether and to what extent the link between religion and health persists in Taiwan.

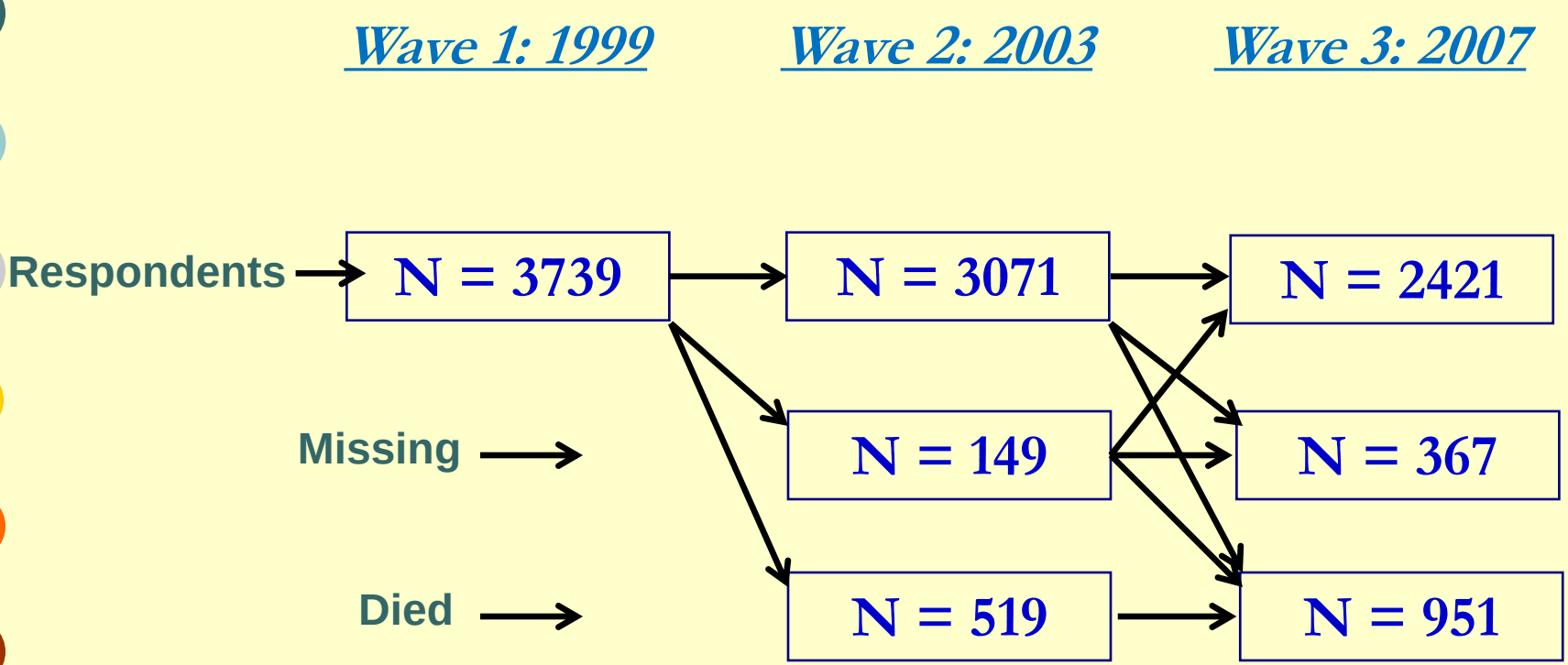
2) Contrast private versus public religious expression.

3) Estimate precise effects of religious activity on total life and healthy life.

Data characteristics

* Survey of Health and Living Status of the Middle Aged and Elderly in Taiwan.
* 1999, 2003 and 2007 waves.
* Age 53+.
* No ‘Mainlanders’.
* N = 3,739.

Data structure



Total response rate = 91%

Method

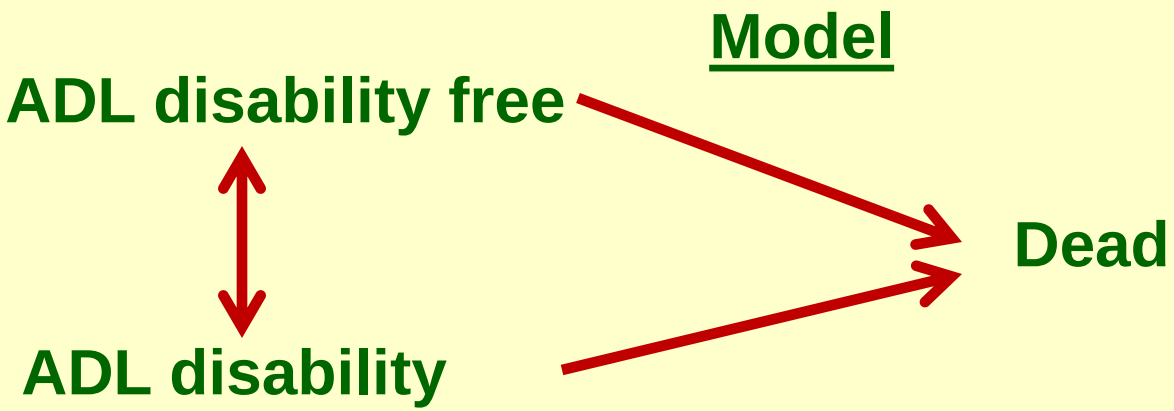
* **Years of life total and free of ADL disability estimated by IMaCh 0.97.[1]**

A multinomial transition model is estimated wherein:

$$\log(p_{ij}/p_{ii}) = a_{ij} + b_{ij}*age + c_{ij}*sex + d`_{ij}* religious\ activity`$$

With coefficients a, b, c and d' used to PREDICT transition probabilities.

Probabilities become input for life expectancies and their variances.



[1] Lievre et al. (2003) Estimating health expectancies from cross-longitudinal surveys. *Mathematical Population Studies. 10(4): 211-248.*

Measuring ADL disability

Bathing
Dressing/undressing
Eating
Getting out of bed
Standing up or sitting in a chair
Moving about inside the house
Using the toilet

Can do all by yourself without help = 0
Has difficulty with at least one = 1

Raw data one year transition probabilities, by sex and baseline status[1]

Baseline status	Follow-up status	Men	Women
Not disabled	Not disabled	.9545	.9557
	Disabled	.0117	.0223
	Died	.0338	.0210
	Total	1.0000	1.000

[1] Assuming one transition per 4 years with equal spacing over time

Raw data one year transition probabilities, by sex and baseline status[1]

Baseline status	Follow-up status	Men	Women
Disabled	Not disabled	.0370	.0465
	Disabled	.7386	.8105
	Died	.2244	.1430
	Total	1.0000	1.000

[1] Assuming one transition per 4 years with equal spacing over time

Measuring religious activity

1. Private: Frequency of praying, burning incense, worshipping or meditating at home.

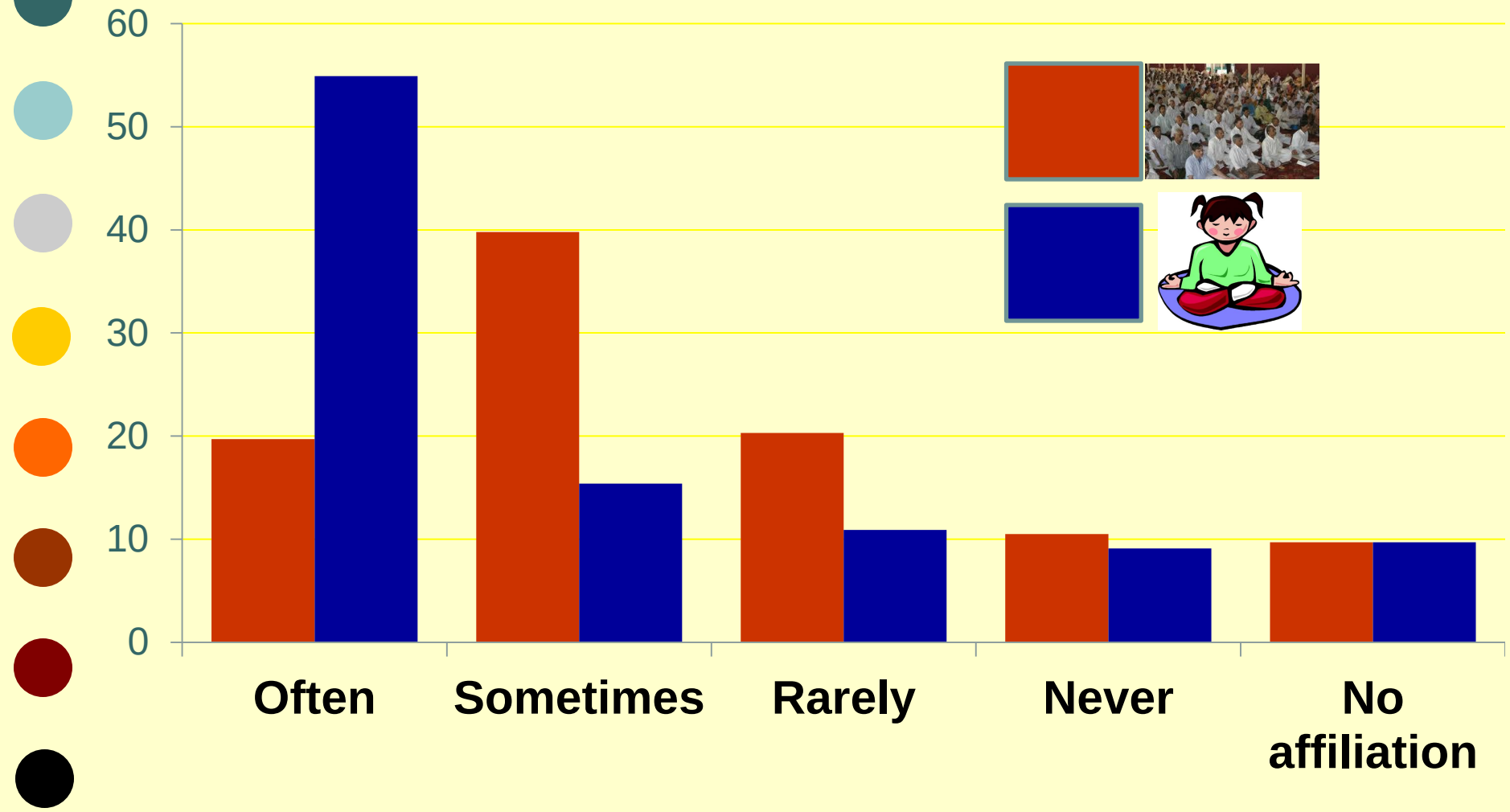
2. Public: Frequency of going to temple or church.

5 response categories entered as 4 dummy variables:

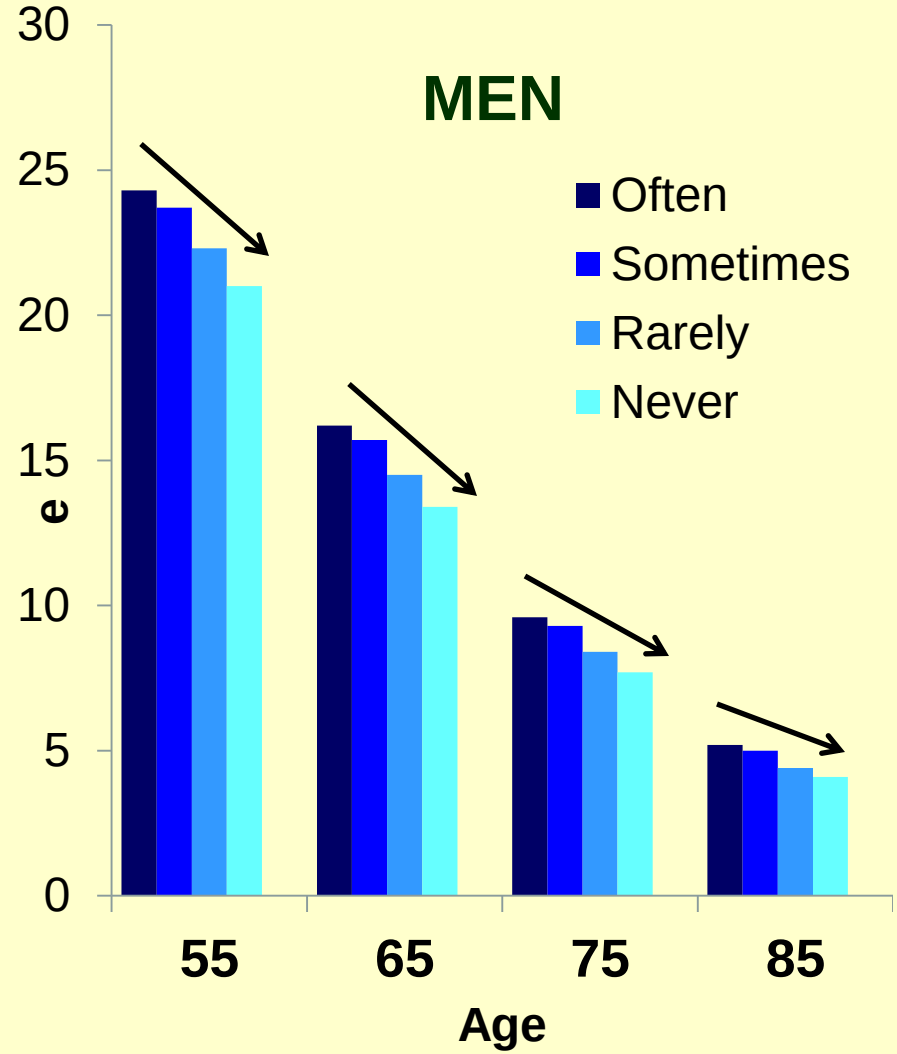
Often // Sometimes // Rarely // Never

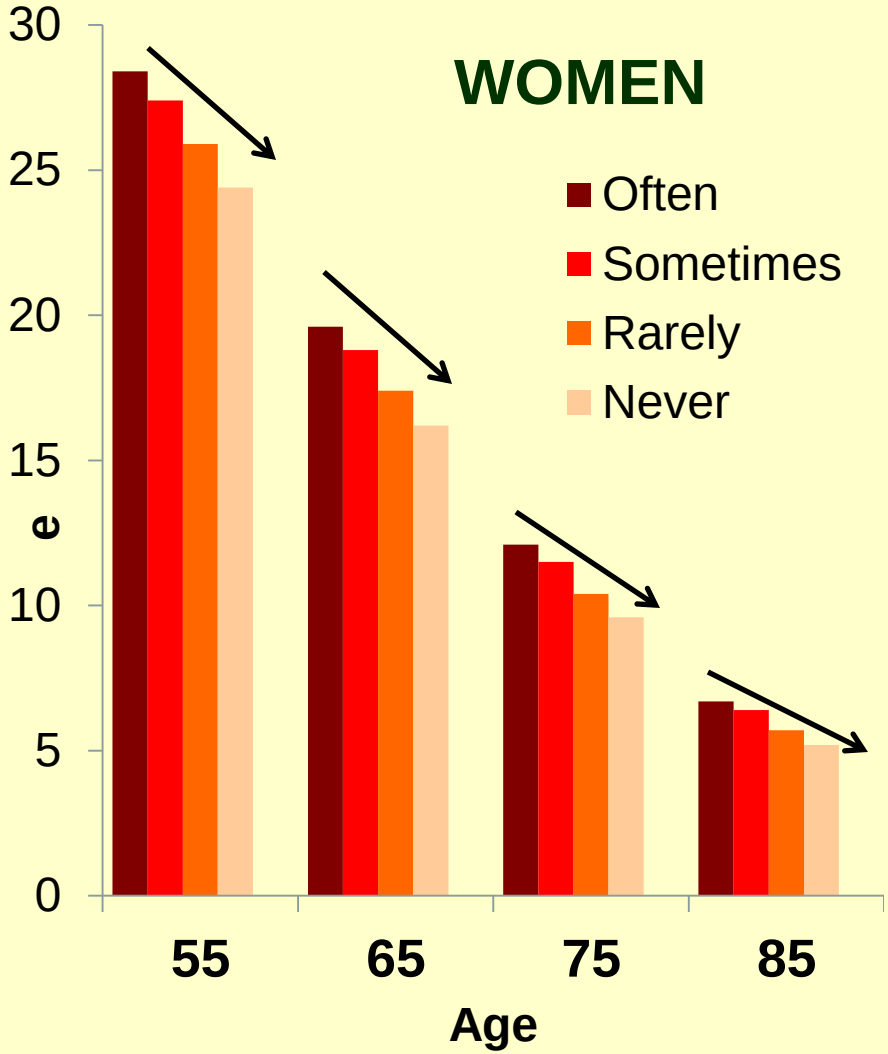
No affiliation

Percent distribution of frequency of private and public religious activity

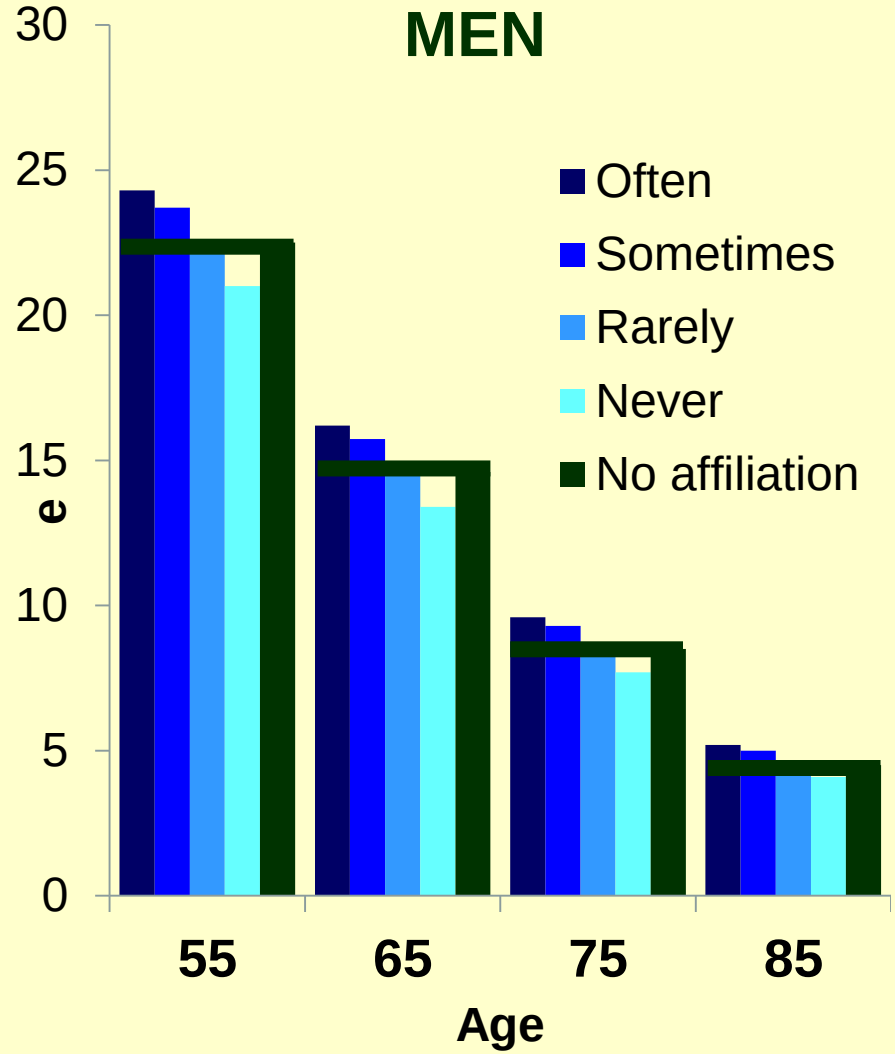


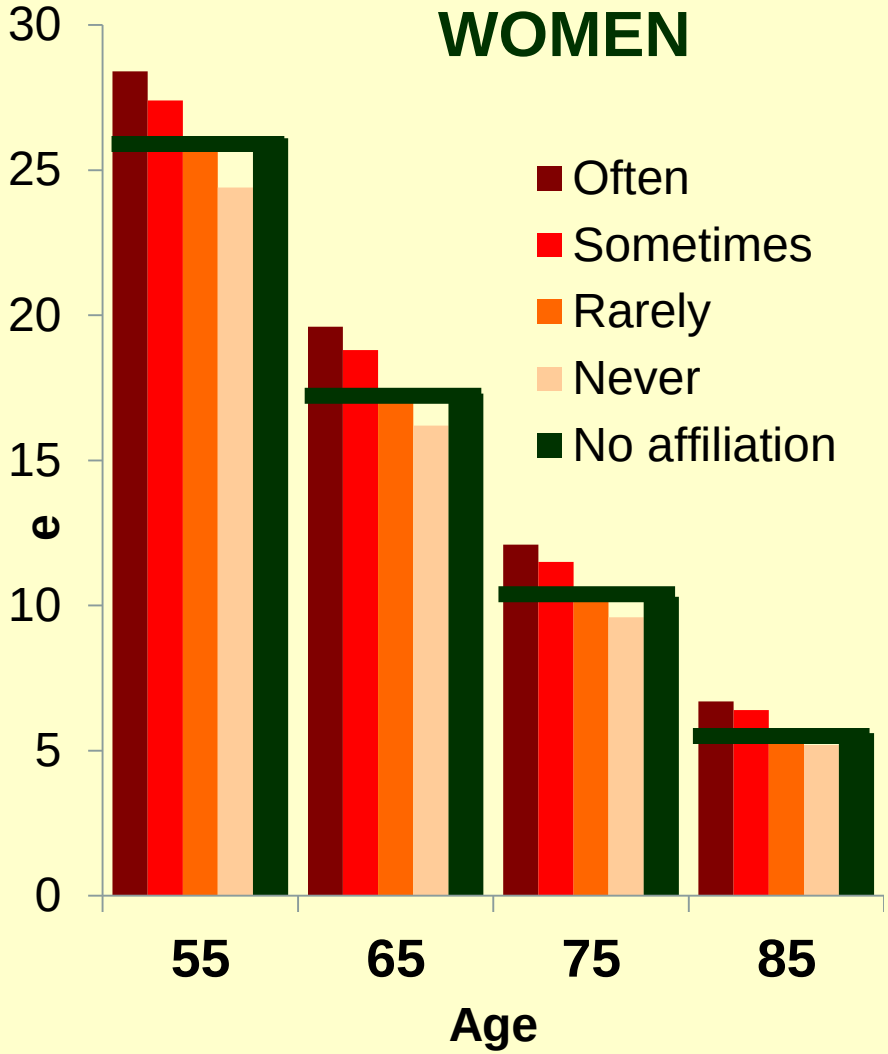
Total life expectancy by religious activity





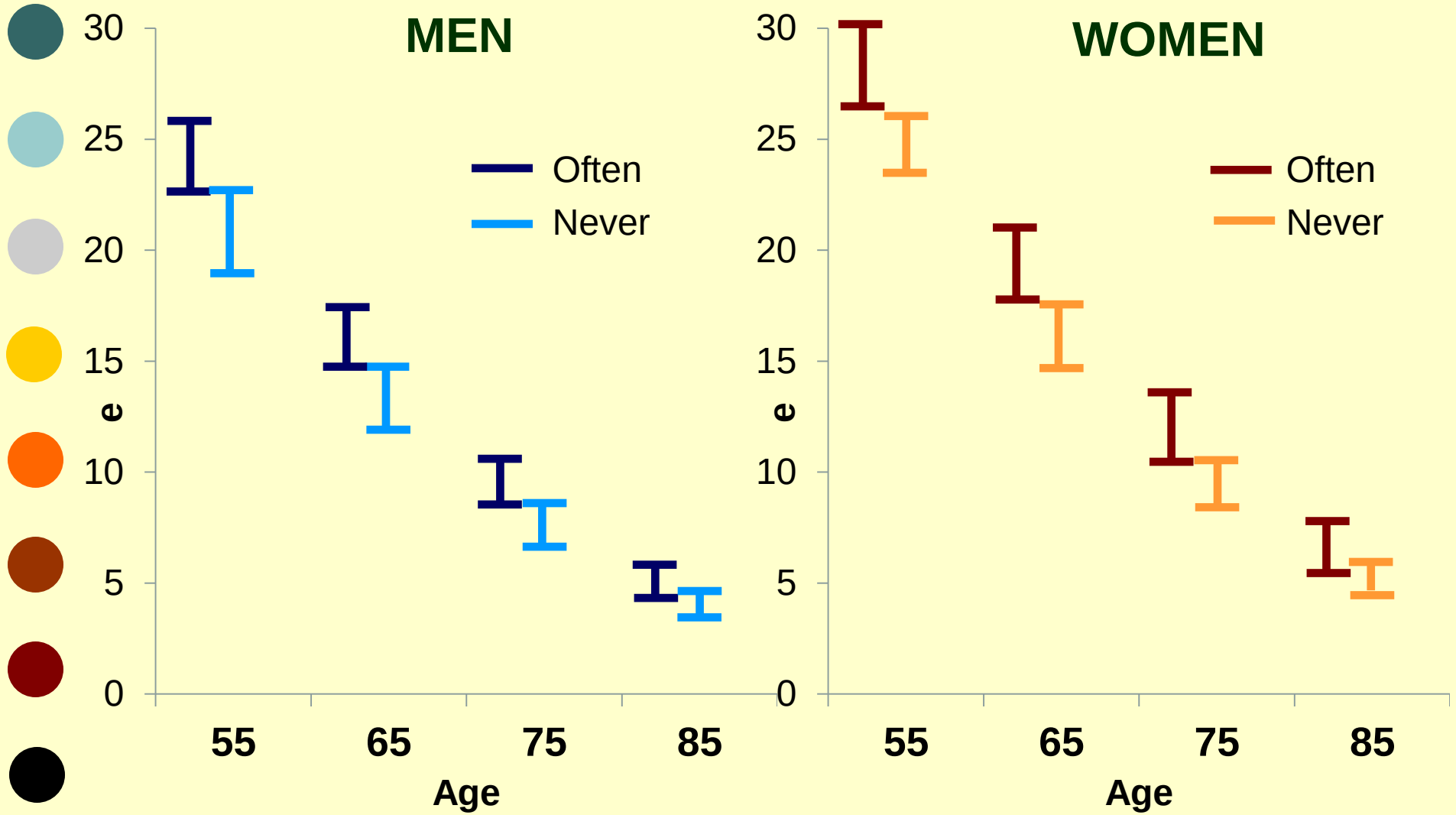
Total life expectancy by religious activity, including non-affiliated



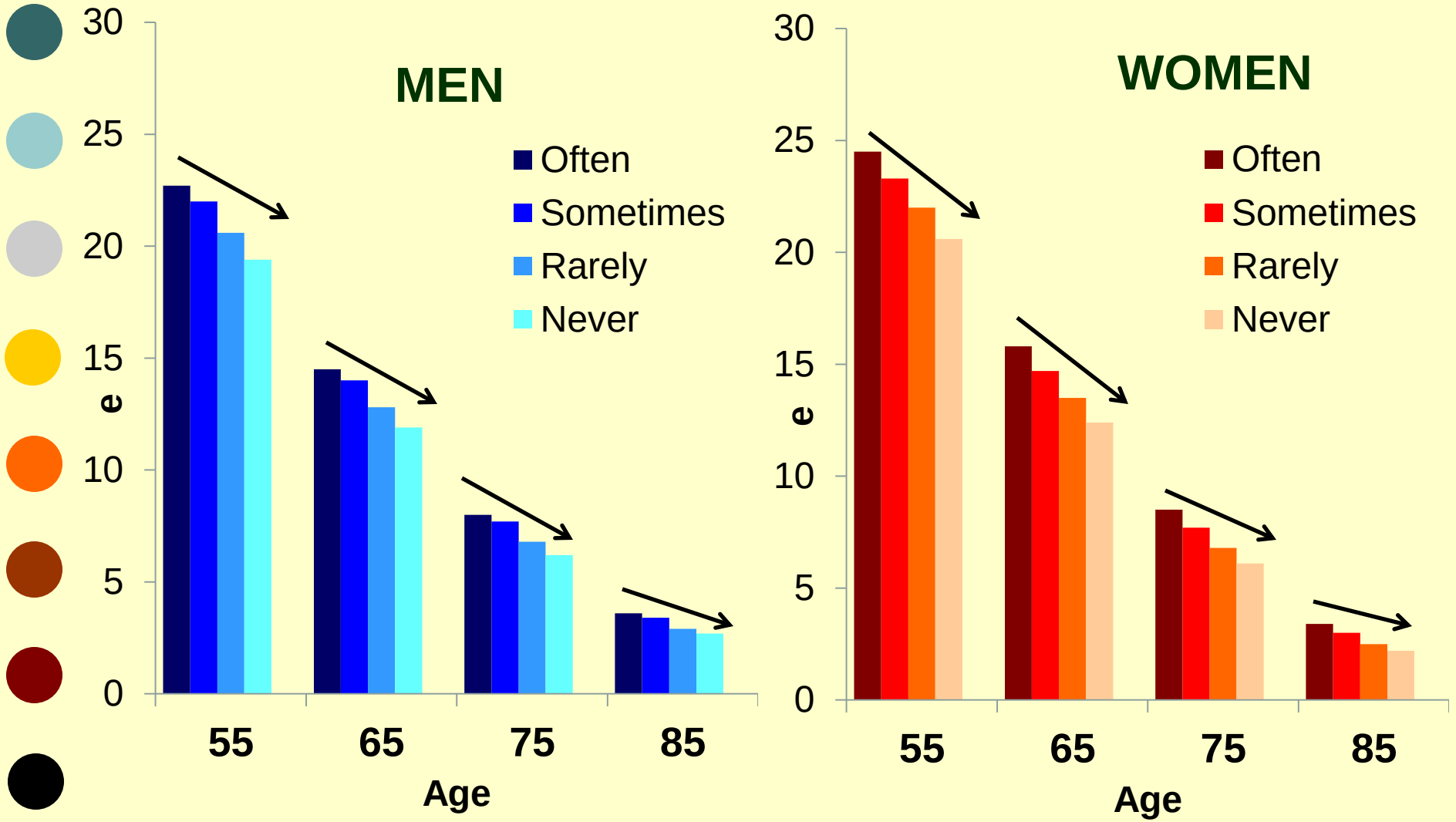


Total life expectancy by religious activity

Showing 95% CIs for Often and Never



ADL disability-free expectancy by religious activity



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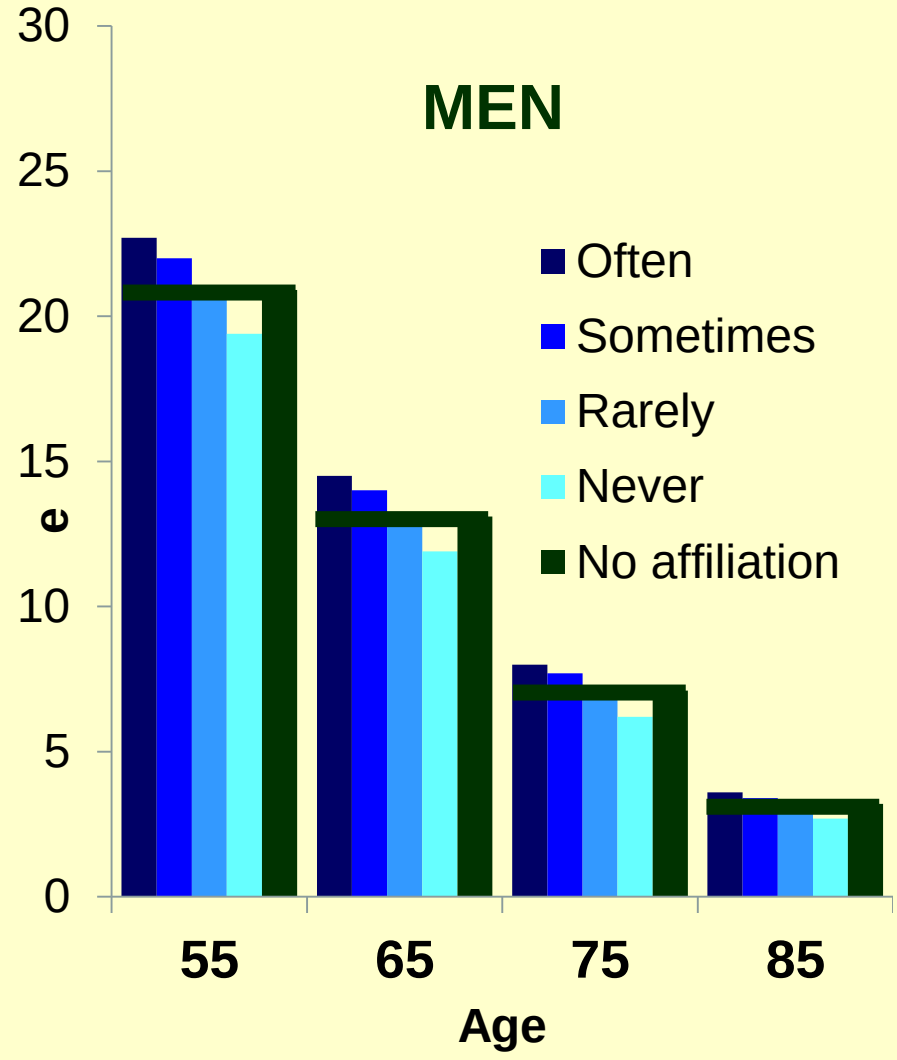

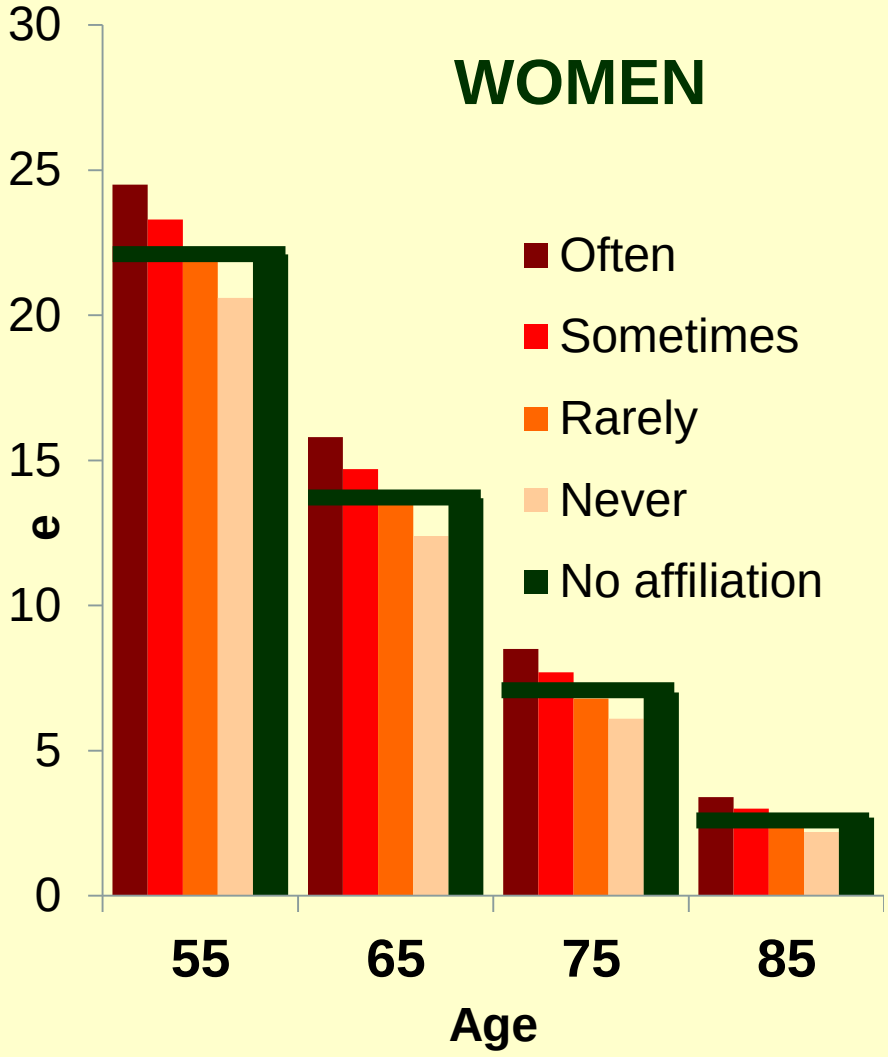

ADL disability-free… religious activity

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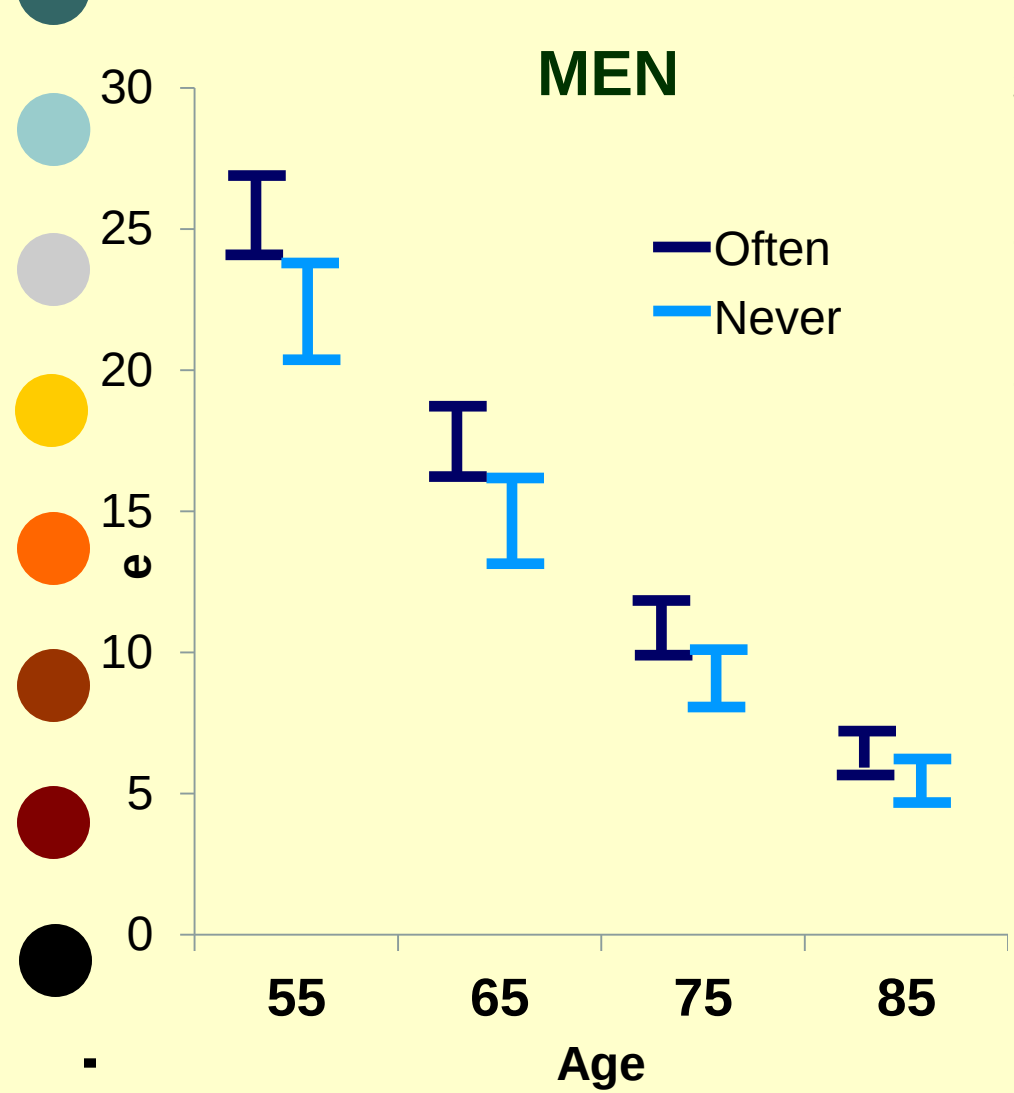

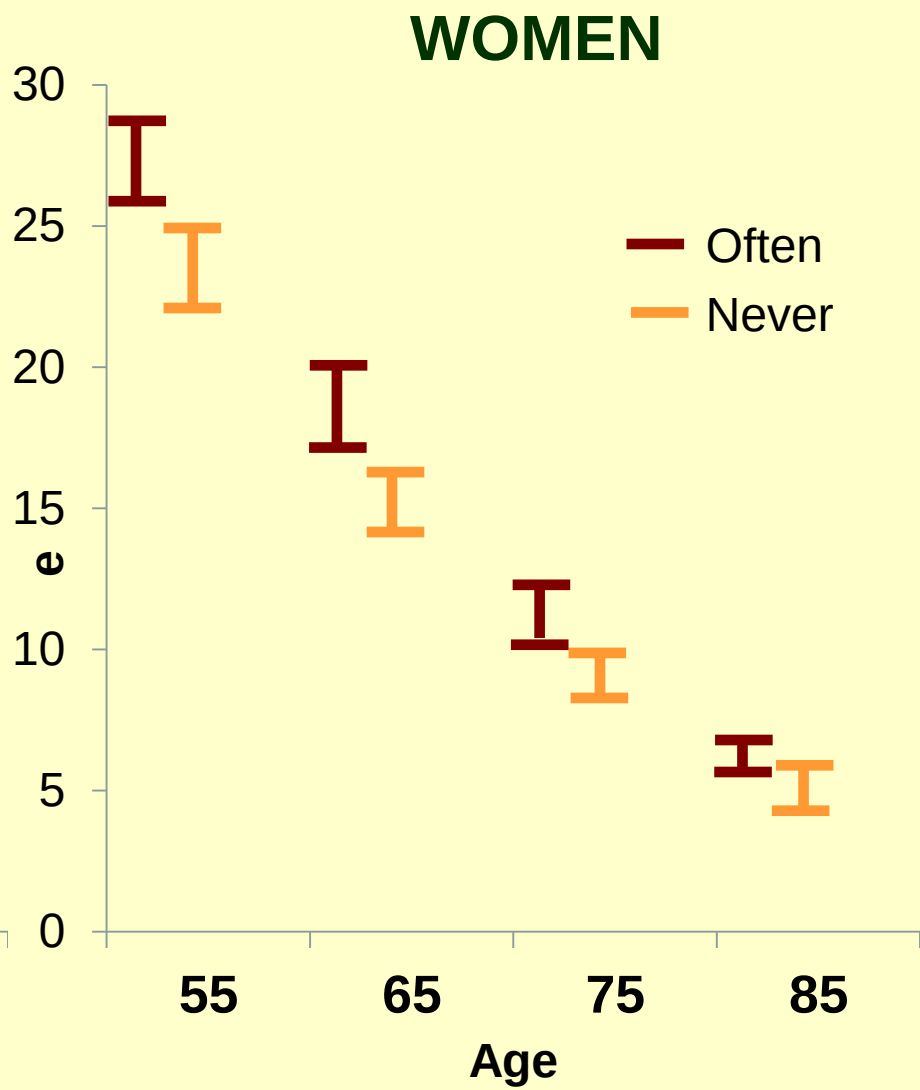

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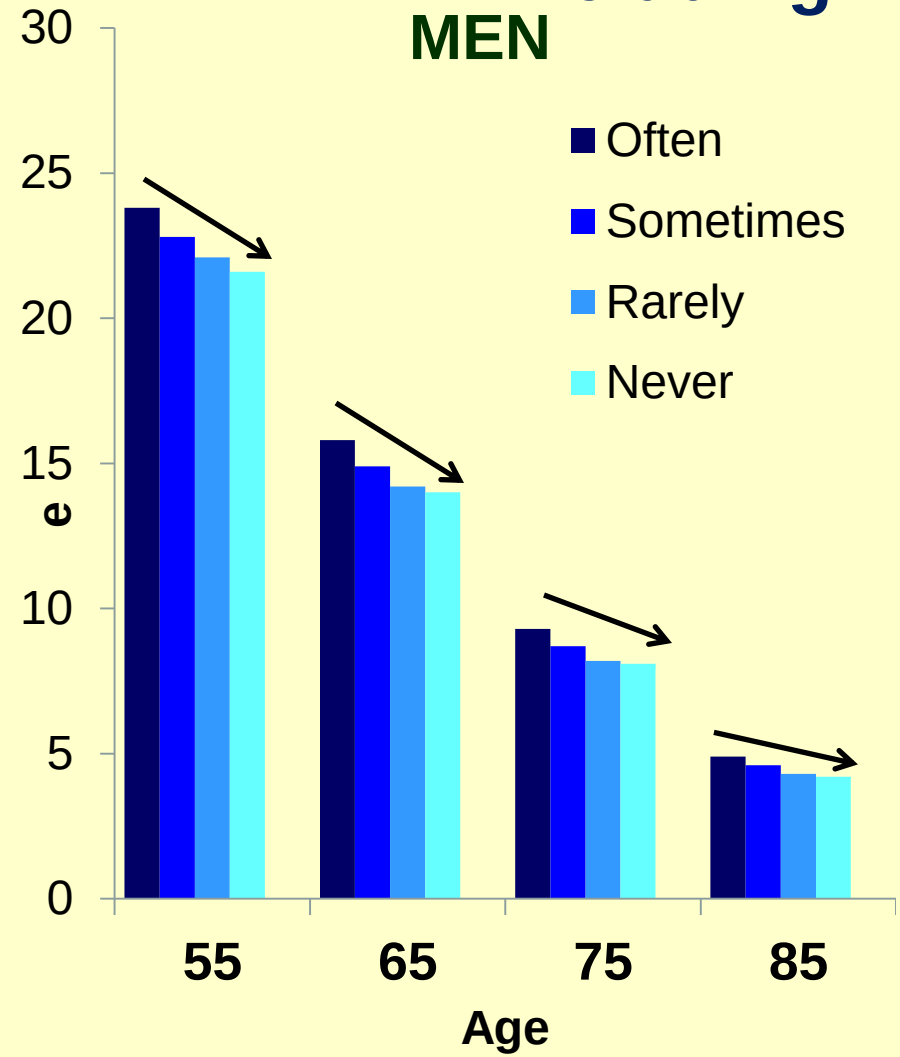

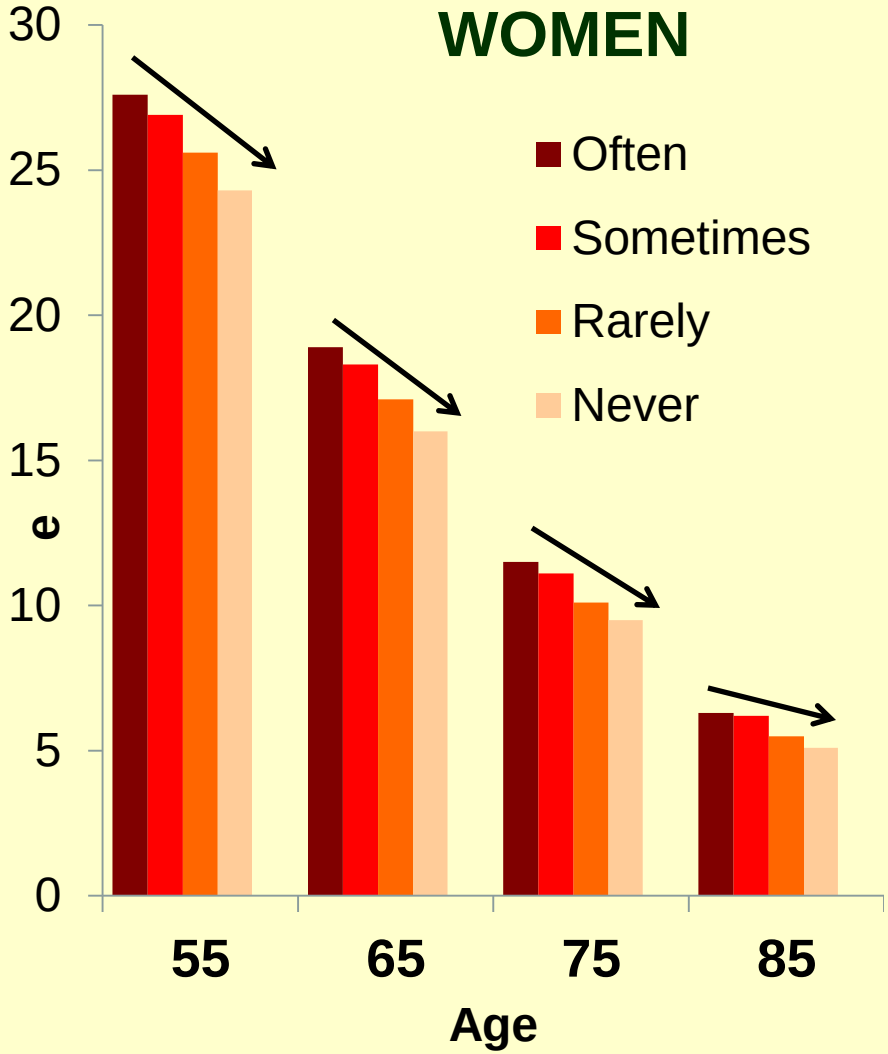

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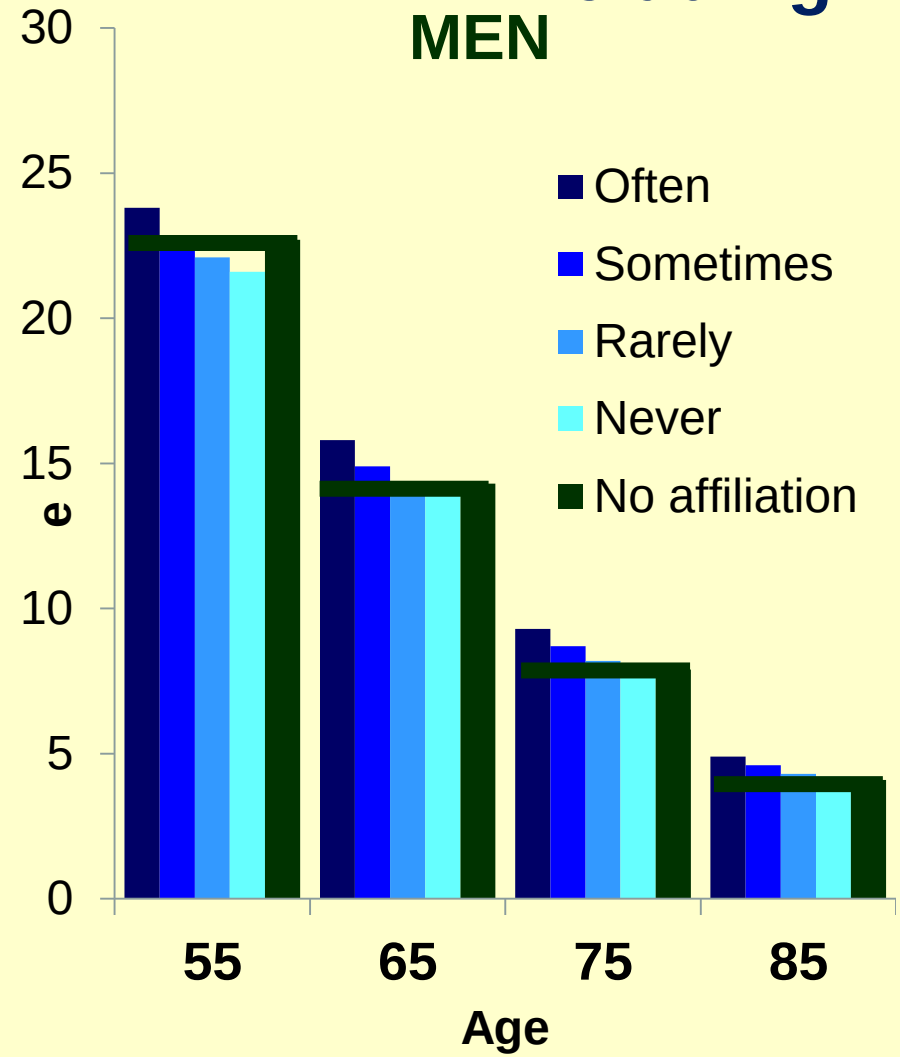

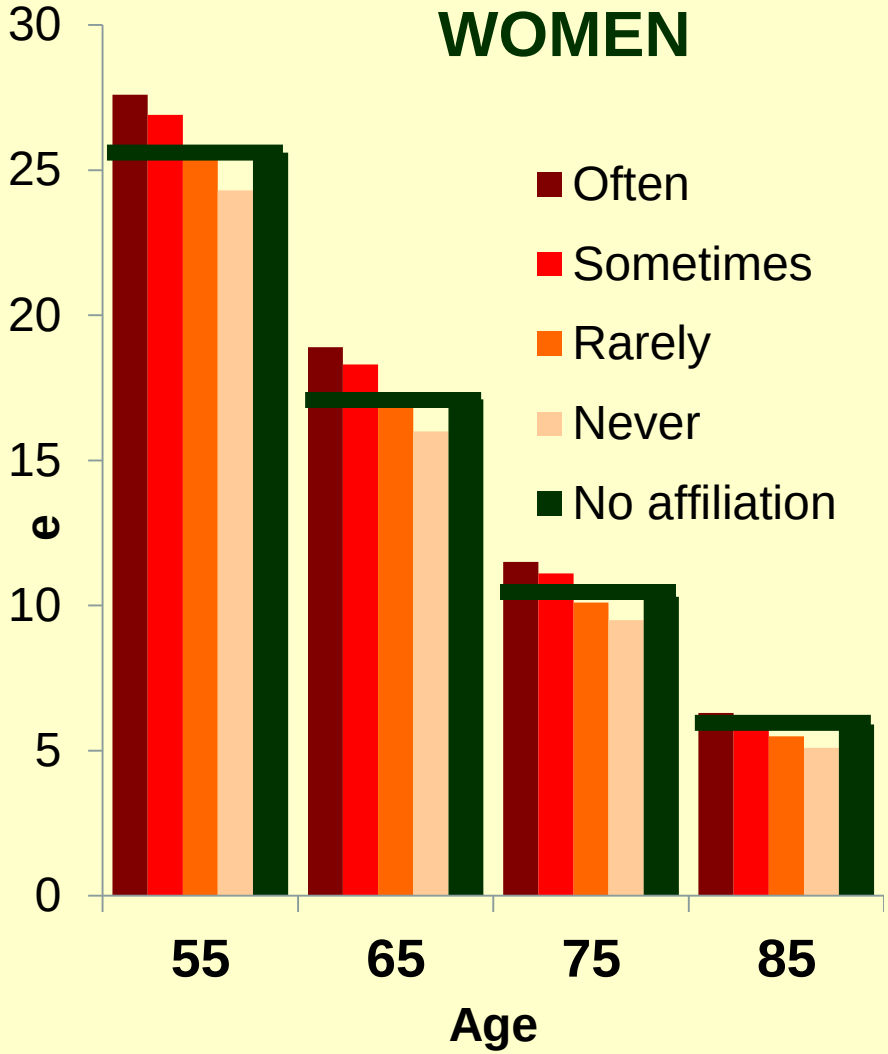

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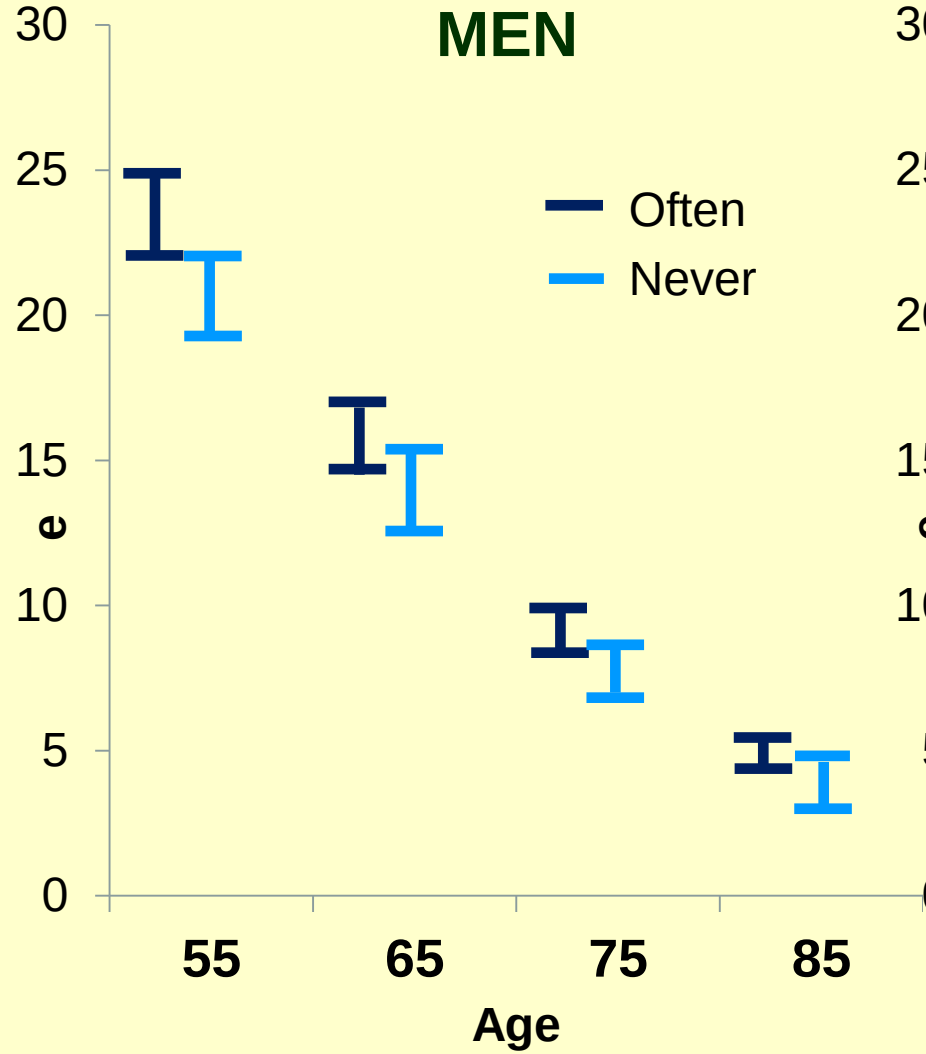
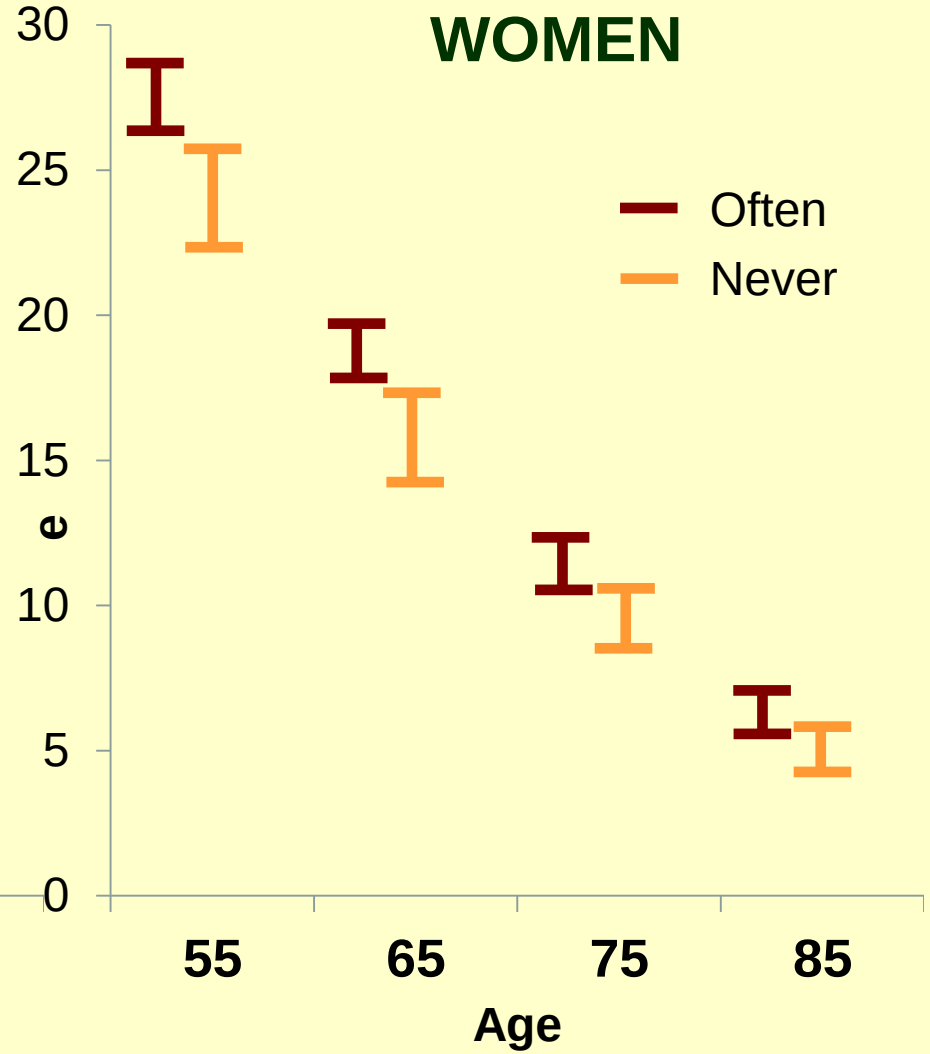
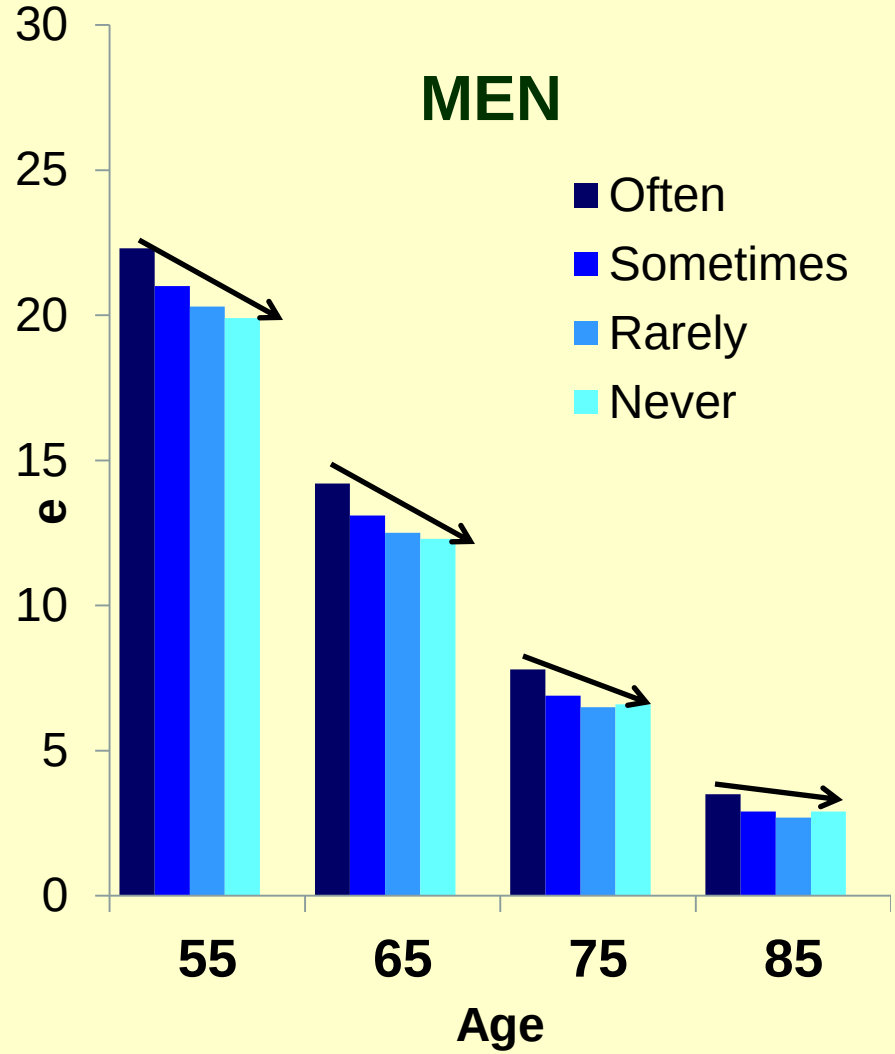
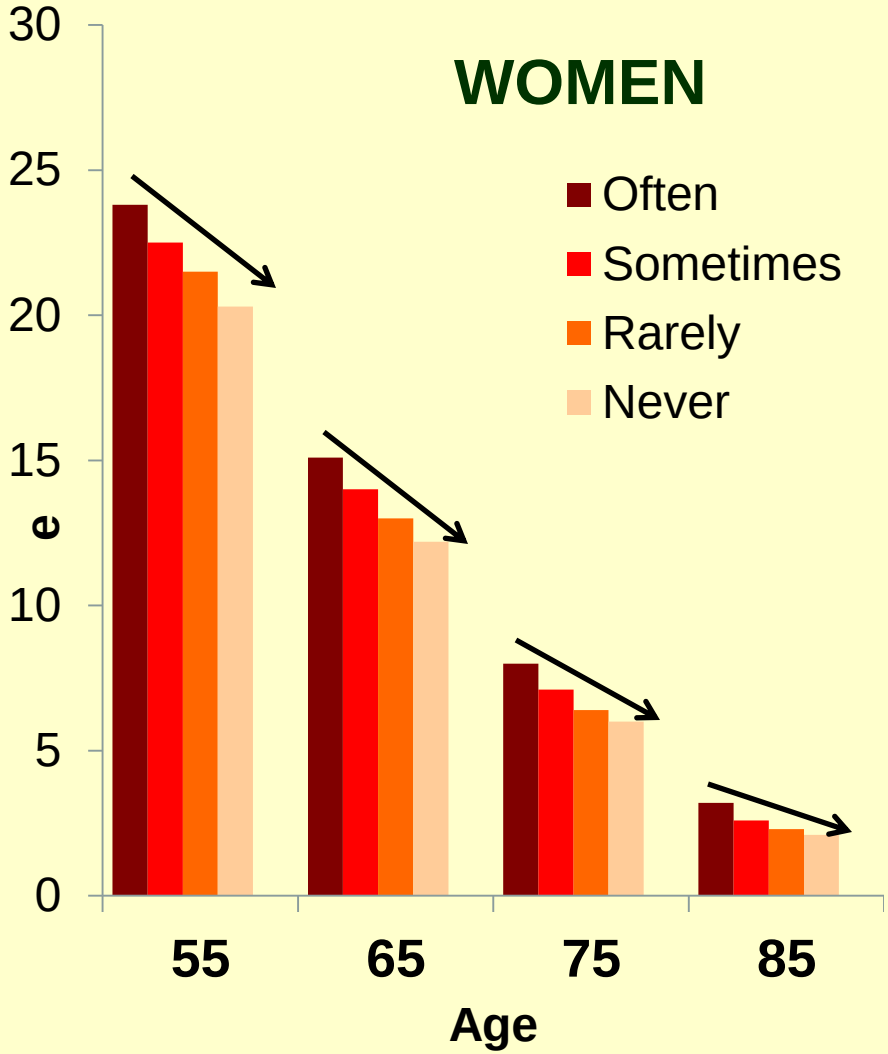




ADL disability-free expectancy by religious activity





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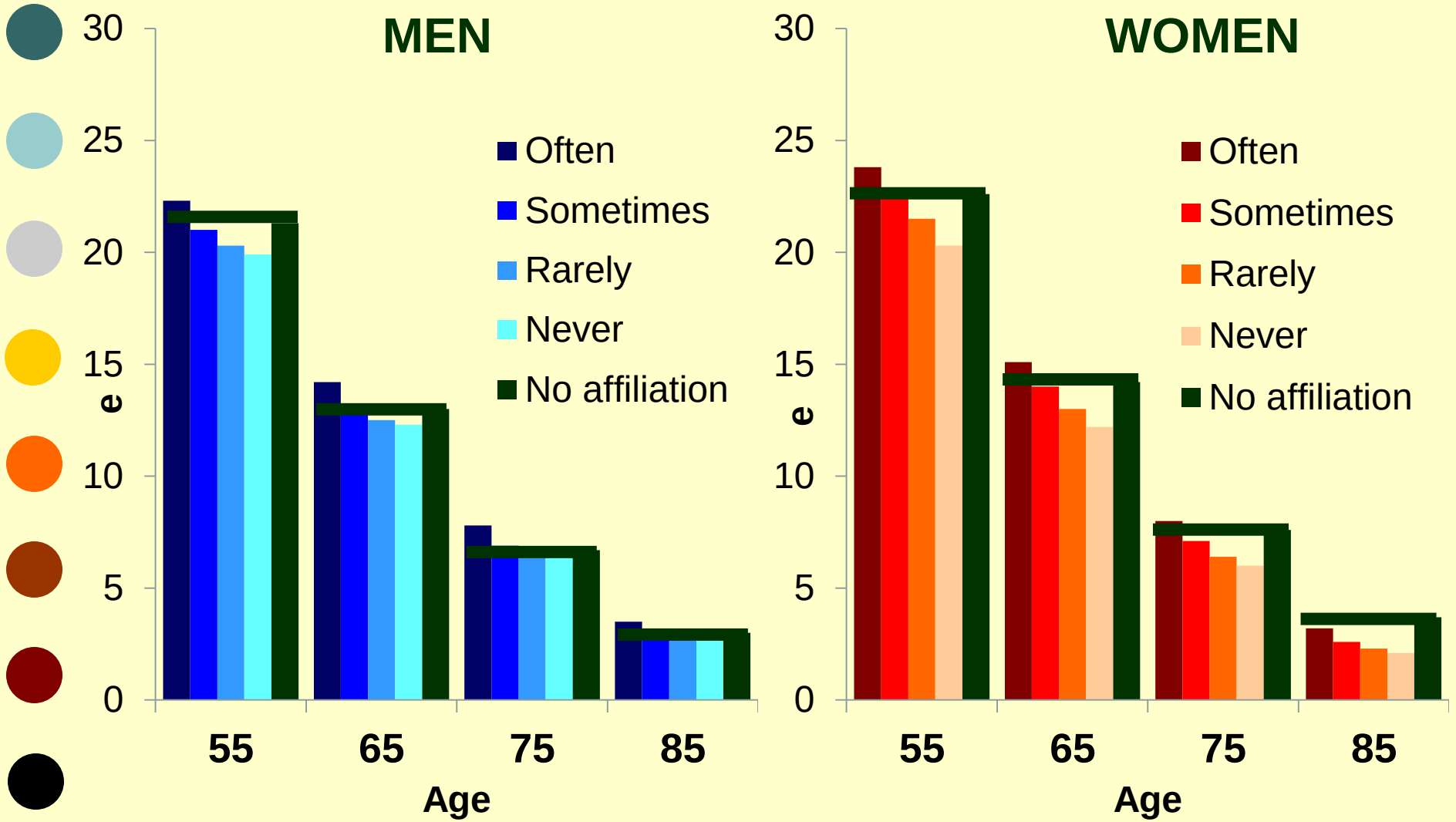

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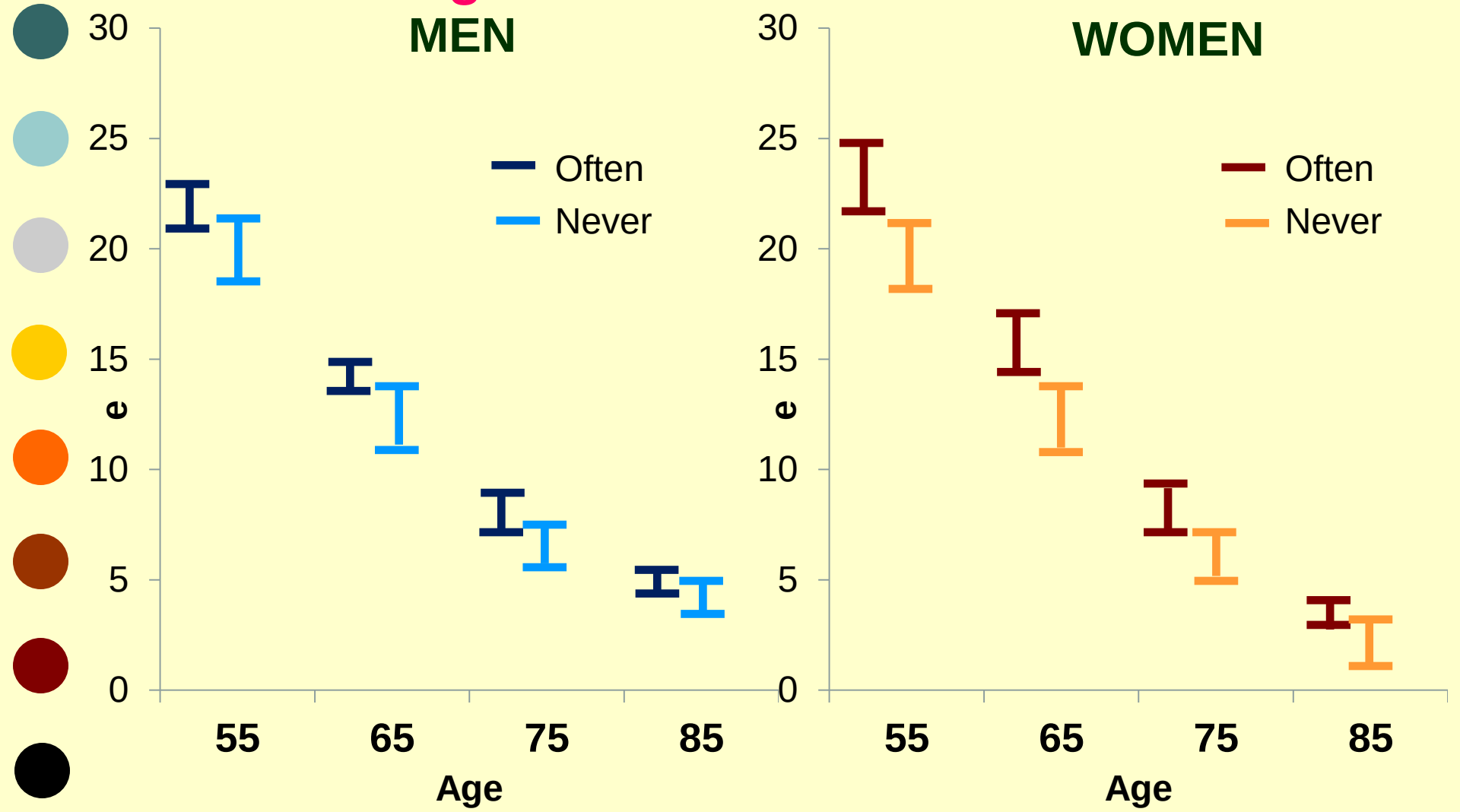


Conclusions (1)

*** The religion and health association persists in Taiwan across demographic outcomes.**

*** The association persists across public and private religious domains.**

Richard J. Davidson et al. 2003. "Alterations in brain and immune function produced by mindfulness meditation." *Psychosomatic Medicine*. Volume 65, pp. 564-570.

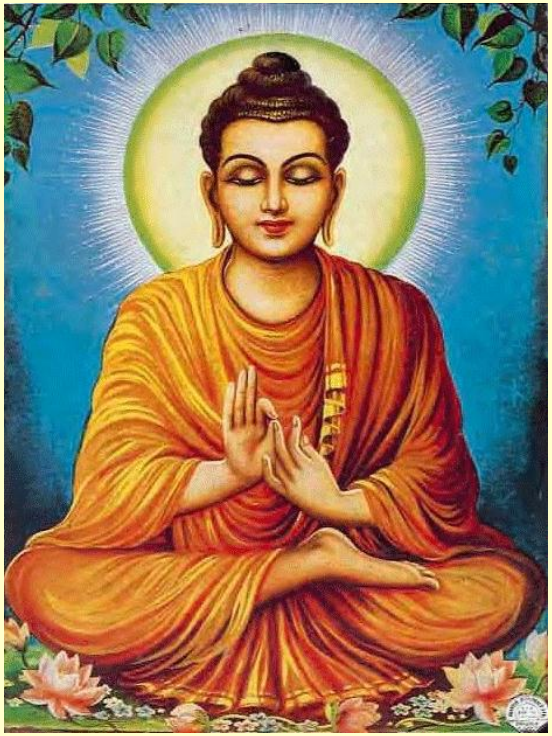
Conclusions (2)

*** Mechanisms beyond those related to social interaction are key explanatory factors that link religion and health.**

Research is increasingly indicating multiple and complex pathways through which religion may promote health outcomes.[1]

*** Those without religious affiliation are not necessarily disadvantaged.**

1 Krause, N. 2004. Common facets of religion, unique facets of religion, and life satisfaction among older African Americans. *The Journals of Gerontology: Social Sciences.59(2):*109-117.



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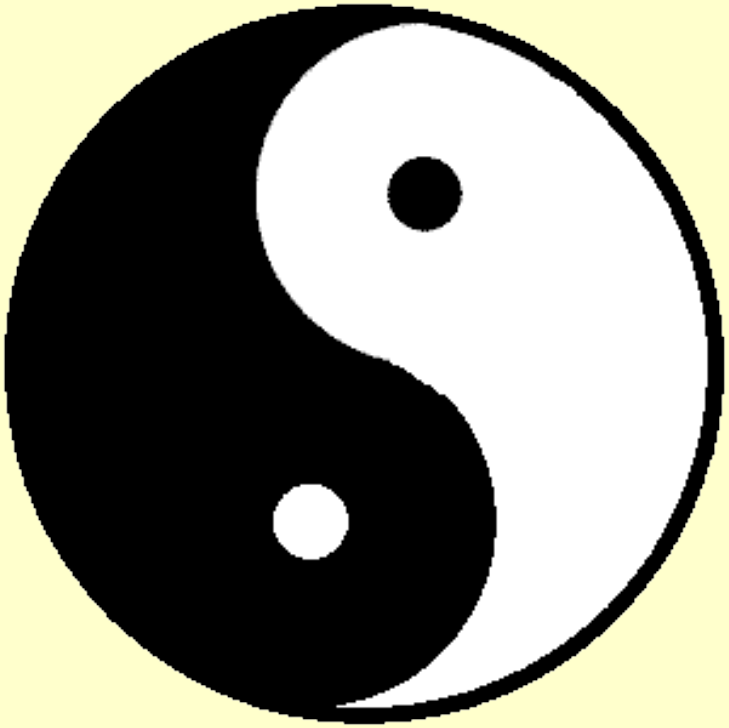
谢谢