

# Marital Biography and Biological Risk among Older Adults

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# Marital Biography and Health

- ✎ Marital Biography (MB)-Crucial part of the life course
- ✎ Three Prominent Studies Show Its Importance but differ in how the influence of MB differs by gender

✎ **Zhang & Hayward (2006)**

✎ **Hughes & Waite (2009)**

✎ **Dupre, Beck, & Meadows (2009)**



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# Three Study Aims

- How is MB Related to cardiovascular, metabolic, inflammation , and cumulative biological risk
- How the relationship between MB and biological risk varies by these dimensions
- How the relationship between MB and biological risk varies by gender



# Marital Biography and Biological Risk

- Burgeoning work suggest social relationships protect cardiovascular, metabolic, neuroendocrine, and immune system functioning (Ryff & Singer 2001)
- May extend to marriage



# Marital Biography

## Current Marital Status

- Continuously married vs. remarried

## Cumulative time spent married

## Age at first marriage

## Age difference between spouses



# National Social Health and Aging Project (NSHAP)

- ✪ 2005/2006 nationally representative probability sample of U.S. community-dwelling adults 57-85. Response Rate 76%
- ✪ Full marital histories, anthropomorphic measurements, and blood spots
- ✪ Our Sample: Restricted to Age  $\leq 75$ --- N varies 527 Females and 526 Males



# Measures

## 🐮 Marital Biography

🐮 Continuously Married

🐮 Previously Married

🐮 Remarried

🐮 Accumulation of decades married since 1<sup>st</sup> marriage

🐮 Age at first marriage

🐮 Differences in age



# Measures

- 🔥 Cardiovascular Risk (4 items)
- 🔥 Metabolic Risk (2 items)
- 🔥 Inflammation Risk (1 item)
- 🔥 Cumulative Biological Risk (7 items)
- 🔥 Controls-age, education, race/ethnicity, health behaviors





### "High Risk" Criteria for Biological Risk

Variable	High Risk Cut-Point	Variables <sup>a</sup>
Systolic Blood Pressure (mmHg)	≥140 (Chobanian et al. 2003)	
Diastolic Blood Pressure (mmHg)	≥90 (Chobanian et al. 2003)	
Pulse Pressure (mmHg)	≥60 (No widely accepted threshold but see Halder et al. 2003)	Cardiovascular Risk
Resting Heart Rate (beats/minute)	≥90 (Seccareccia et al., 2001)	
Waist Circumference (inches)	≥35 Women, ≥40 Men	Metabolic Risk
Glycosylated Hemoglobin (%)	≥6.4 (Osei et al., 2003)	
C-Reactive Protein (mg/L)	≥3.1 (Ridker 2003)	Inflammation

Note: Biological Risk is measured by taking the sum of these three variables.



**Sample Characteristics for Respondents Aged 57-75 Years,  
by Gender and Marital Status (Ms and %s)**

	Women		
	Continuously Married <sup>a</sup> (N=207)	Remarried (N=90)	Previously Married (N=230)
Cardiovascular Risk <sup>b</sup>	0.87	1.05	1.06 †
Metabolic Risk <sup>c</sup>	0.68	0.61	0.99 ***
Inflammation <sup>d</sup>	27.05	22.22	31.30
Biological Risk <sup>e</sup>	1.82	1.89	2.34 ***
	Men		
	Continuously Married <sup>a</sup> (N=284)	Remarried (N=143)	Previously Married (N=99)
Cardiovascular Risk <sup>b</sup>	1.05	1.06	1.17
Metabolic Risk <sup>c</sup>	0.84	0.74	0.73
Inflammation <sup>d</sup>	22.18	16.08 *	28.28
Biological Risk <sup>e</sup>	2.10	1.99	2.18

Note: † p ≤ .10, \* p ≤ .05, \*\* p ≤ .01, \*\*\* p ≤ .001.

<sup>a</sup>Each marital group is compared with the continuously married.

<sup>b</sup>Cardiovascular is a composite measure of systolic and diastolic blood pressure, pulse pressure, and resting heart rate.

<sup>c</sup>Metabolic Risk is a composite measure of glycosylated hemoglobin, and waist circumference.

<sup>d</sup>Inflammation consists of a single measure: c-reactive protein.

<sup>e</sup>Biological Risk is a composite measure of cardiovascular risk, metabolic risk, and inflammation.



## Marital Biography and Biological Risk among Women (N=527)

	Model 1	Model 2	Model 3	Model 4
Previously Married	0.242 **	0.245 **	0.096	0.226 **
Remarried	-0.010	-0.005	-0.073	-0.017
Age	-0.001	-0.001	0.006	-0.001
Age at First Marriage		0.003		
Decades Married			-0.080 *	
Spouse Age Difference				0.004
Constant	0.721 +	0.662	0.615	0.732 +
Ln Alpha	-3.355 ***	-3.356 ***	-3.627 *	-3.363 ***

\*\*\* p < .001, \*\* p < .01, p < .05. +p < .10.



## Marital Biography and Biological Risk among Men (N=526)

	Model 1	Model 2	Model 3	Model 4
Previously Married	-0.022	-0.026	0.001	-0.027 **
Remarried	-0.027	-0.048	-0.020	0.017
Age	-0.004	-0.004	-0.006	-0.004
Age at First Marriage		-0.015 *		
Decades Married			0.014	
Spouse Age Difference				0.014
Constant	1.191 *	1.479 **	1.221 *	1.143 *
Ln Alpha	-3.542 *	-3.796 *	-3.546 *	-3.606 ***

\*\*\* p < .001, \*\* p < .01, p < .05. +p < .10.



## Components of Biological Risk and Marital Biography

	Women (N=527)	Men (N=526)
Cardiovascular Risk	Previously Married (+) Decades Married (-)	Age First Marriage (-)
Metabolic Risk	Previously Married (+)	Age First Marriage (-)
Inflammation Risk		Age First Marriage (-)



# Summary

For women:

🔸 Previously Married =  $\uparrow$  cardiovascular, metabolic, & biological risk

🔸 Accumulated years married =  $\downarrow$  cardiovascular, biological risk

For men:

🔸 Age at first marriage =  $\downarrow$  cardiovascular, metabolic, inflammation, & biological risk



# Limitations

- 🐮 Mortality Selection
- 🐮 Assortative Mating
- 🐮 Unequal Assessment of Physiological Systems



# Future Work

- 🐉 Replication with HRS data
- 🐉 Second wave of NSHAP
- 🐉 Mechanisms





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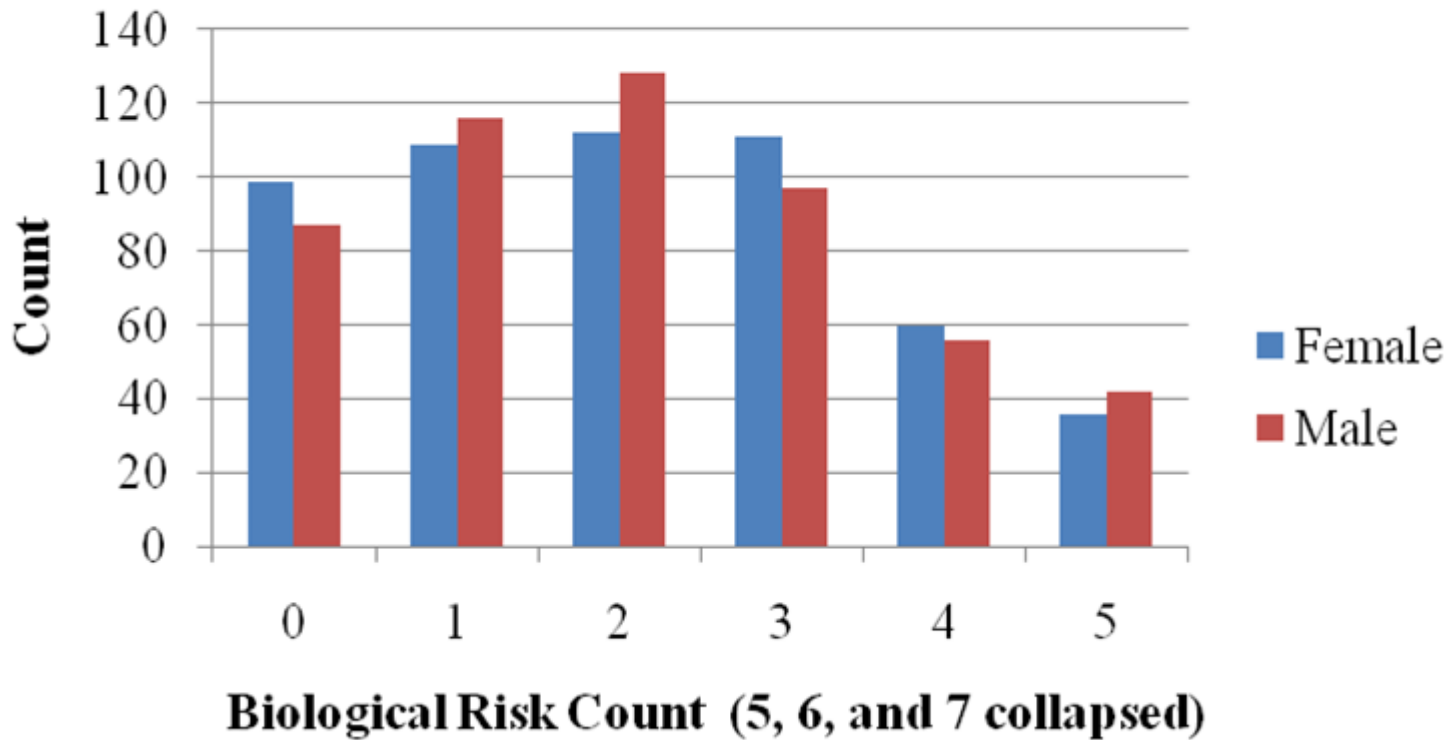
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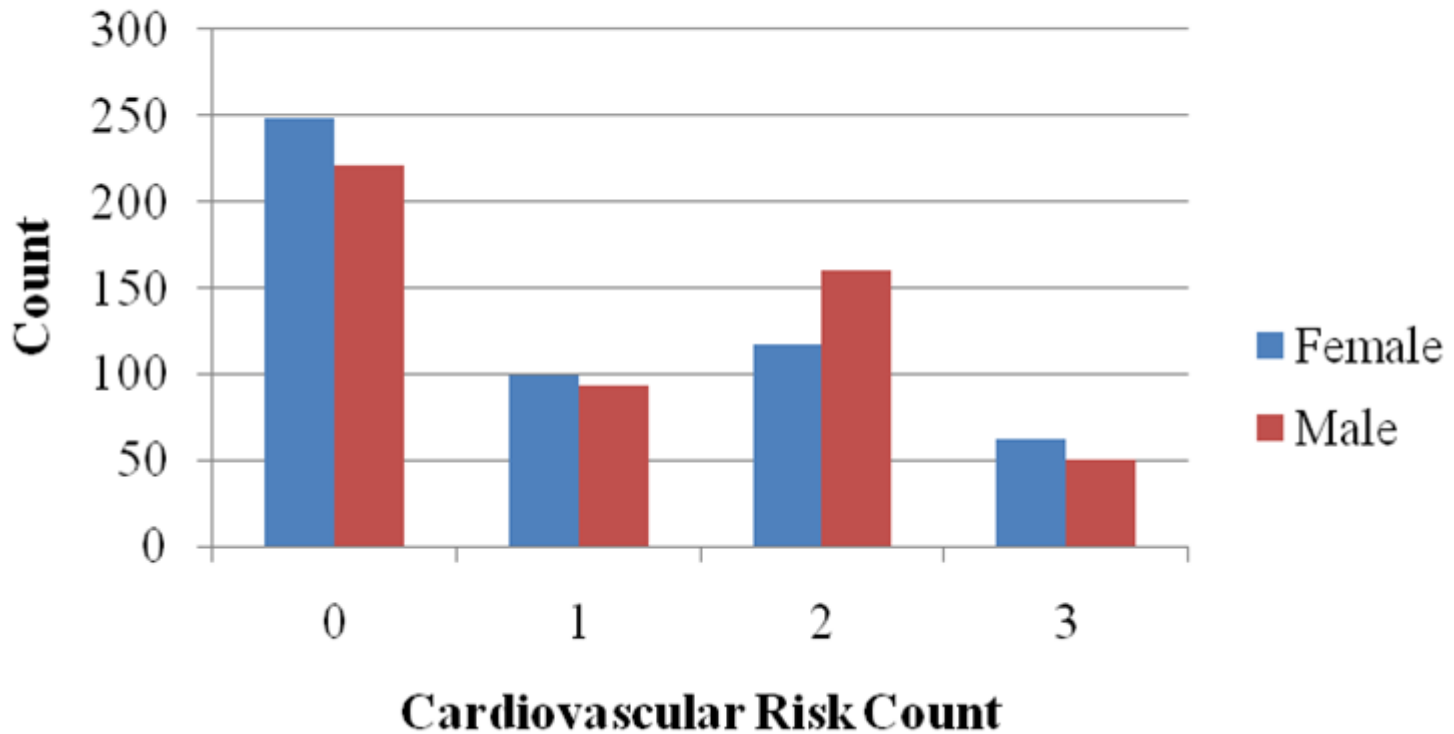
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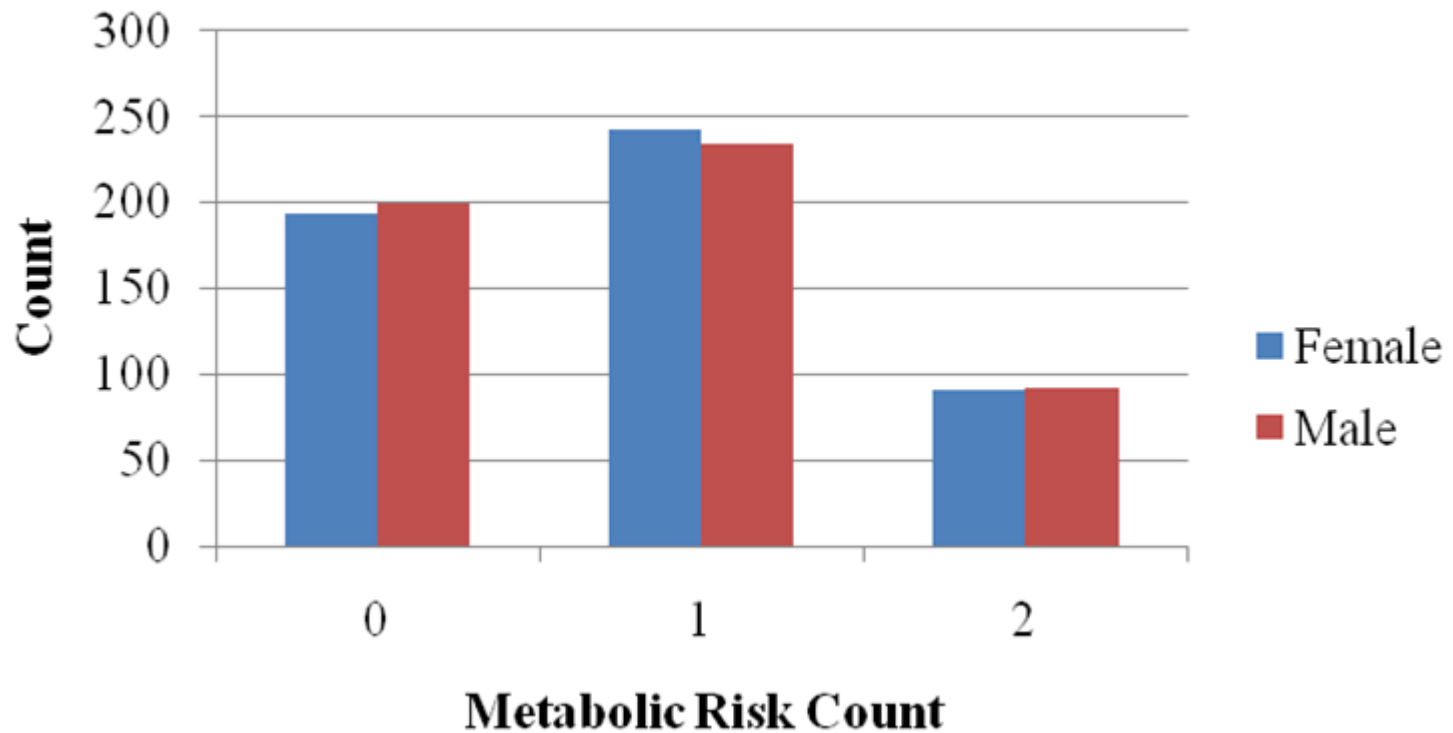
## Biological Risk Count



## Cardiovascular Risk Count



## Metabolic Risk Count



## High C-Reactive Protein

