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Intimacy and Social Isolation  
In the  
National Social Life, Health and  
Aging Project  
(NSHAP)

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# Intimacy Protects & Social Isolation Kills... but How and Why?





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-  Variety of indicators of isolation
-  Different types of isolation affect particular aspects of health
-  Possible mechanisms?



# National Social Life, Health, and Aging Project

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-  Interview 3,005 community-residing adults ages 57-85
-  Population-based sample with minority over-sampling
-  120-minute in-home interview
  - Questionnaire
  - Biomeasure collection
-  Leave-behind questionnaire



# Mental Health Measures

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## **Anxiety**

HADS (7 items) modified to match those of the Center for Epidemiological Studies Depression Scale



## **Bereavement**

Four items



## **Depression**

CES-D (11 items)



## **Happiness**

Single item



## **Loneliness**

Three-item scale



## **Self esteem**

Single item



## **Stress**

Four item modification of Cohen's Perceived Stress Scale



# Biomeasures

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Biological or biologically-derived indicators of disease

## Anthropometrics

- Height, weight, BMI
- Waist circumference

## Medications

- Blood pressure
- Get up and go



# Blood Spots



- 🌿 C-reactive protein
- 🌿 Epstein-Barr Virus Antibody Titers
- 🌿 Hemoglobin A1c



# Indicators of Social Isolation

## Objective Social Isolation

- Living alone
- *Physical separation from others*
- Social network size and characteristics
- Social inactivity

## Subjective Lack of social support

- *Perception that relationships with others are emotionally distant relationships*
- *low quality, emotionally distant, or unsatisfying*
- Loneliness



# Objective Social Isolation Scale ( $\alpha = .74$ )

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## Social network characteristics

- Size
- Range
- Contact volume
- Proportion of network members in the household

## Social involvement

- Participation in organized groups
- Religious attendance
- Volunteering

## Number of Friends



# Subjective Social Isolation Scale ( $\alpha = .71$ )

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 Emotional closeness with network members

 Perceived social support

- Spouse or current partner
- Family members
- Friends

 Feelings of loneliness and not belonging

- Loneliness Scale (Hughes, Waite, Hawkley, and Cacioppo 2004)
  - Lack companionship
  - Feel left out
  - Feel isolated
- “I was lonely”



Figure 2. Predicted Probability of Very Good or Excellent Physical Health, by Levels of Objective and Subjective Isolation

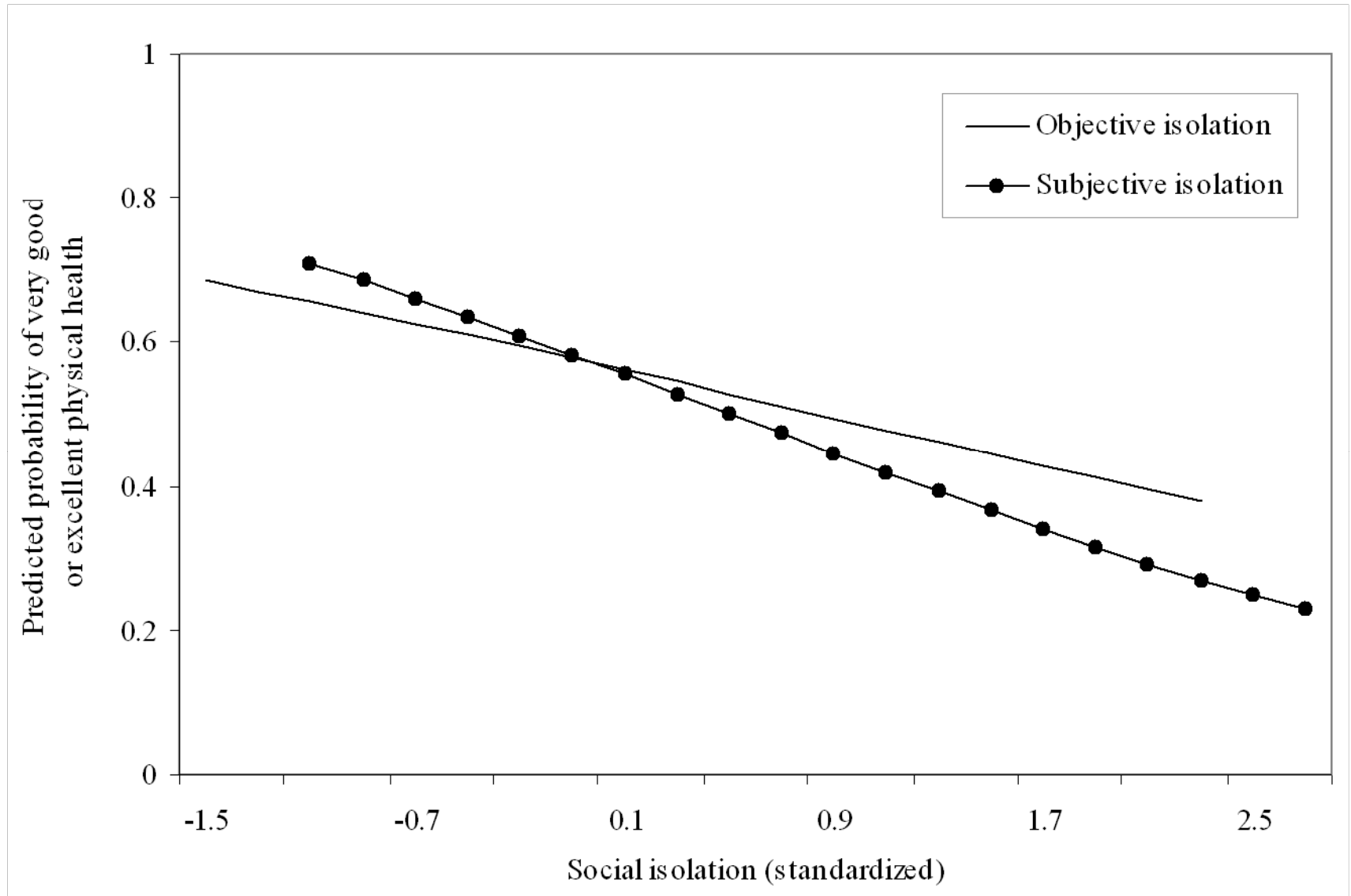
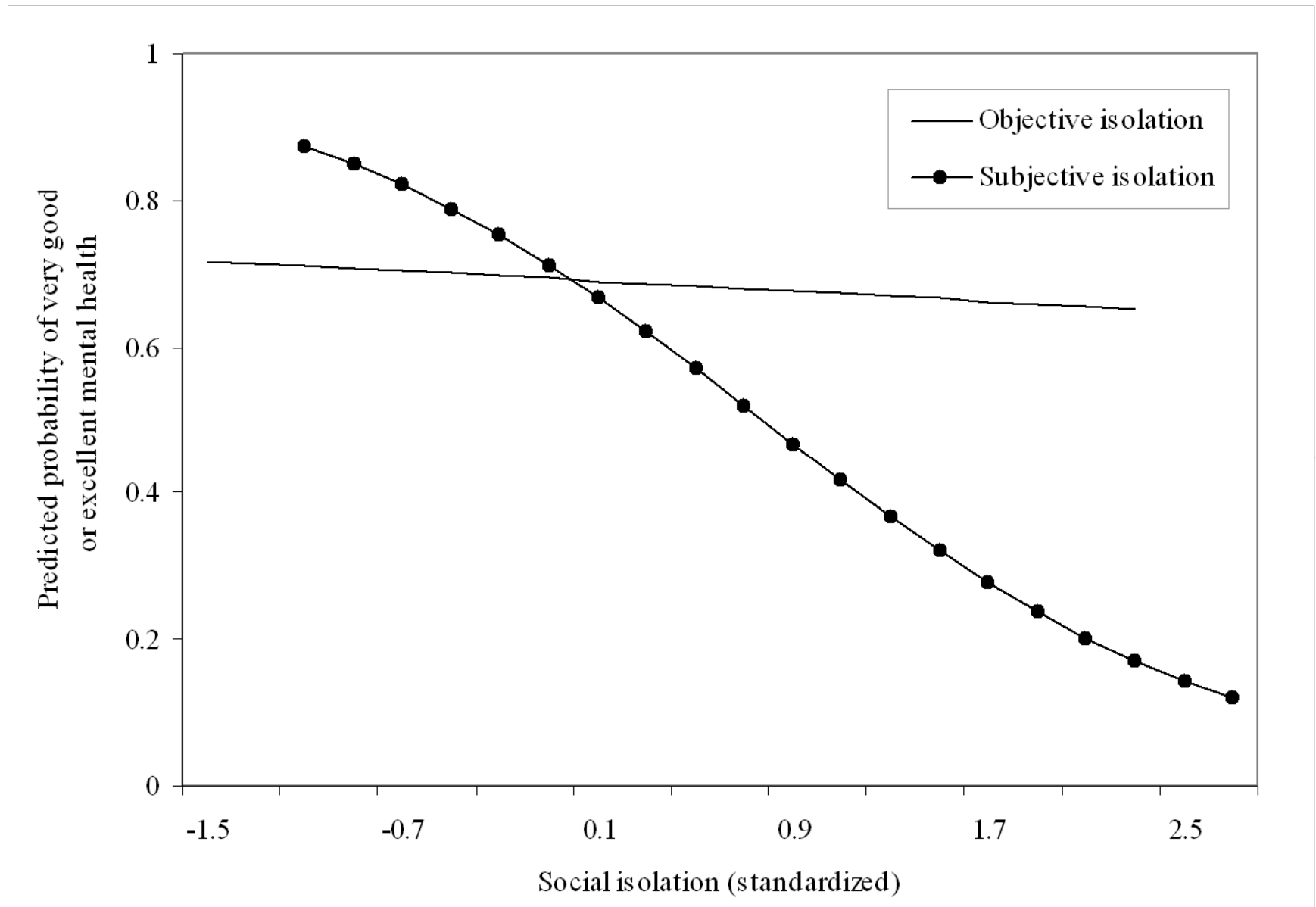





Figure 3. Predicted Probability of Very Good or Excellent Mental Health, by Levels of Objective and Subjective Isolation



# Social Isolation and Self-Rated Health

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-  Objective and subjective isolation are distinct forms of social isolation
-  Both objective and subjective isolation are independently related to self-rated physical health
-  The effect of objective isolation on mental health may operate through the very strong link between subjective isolation and mental health



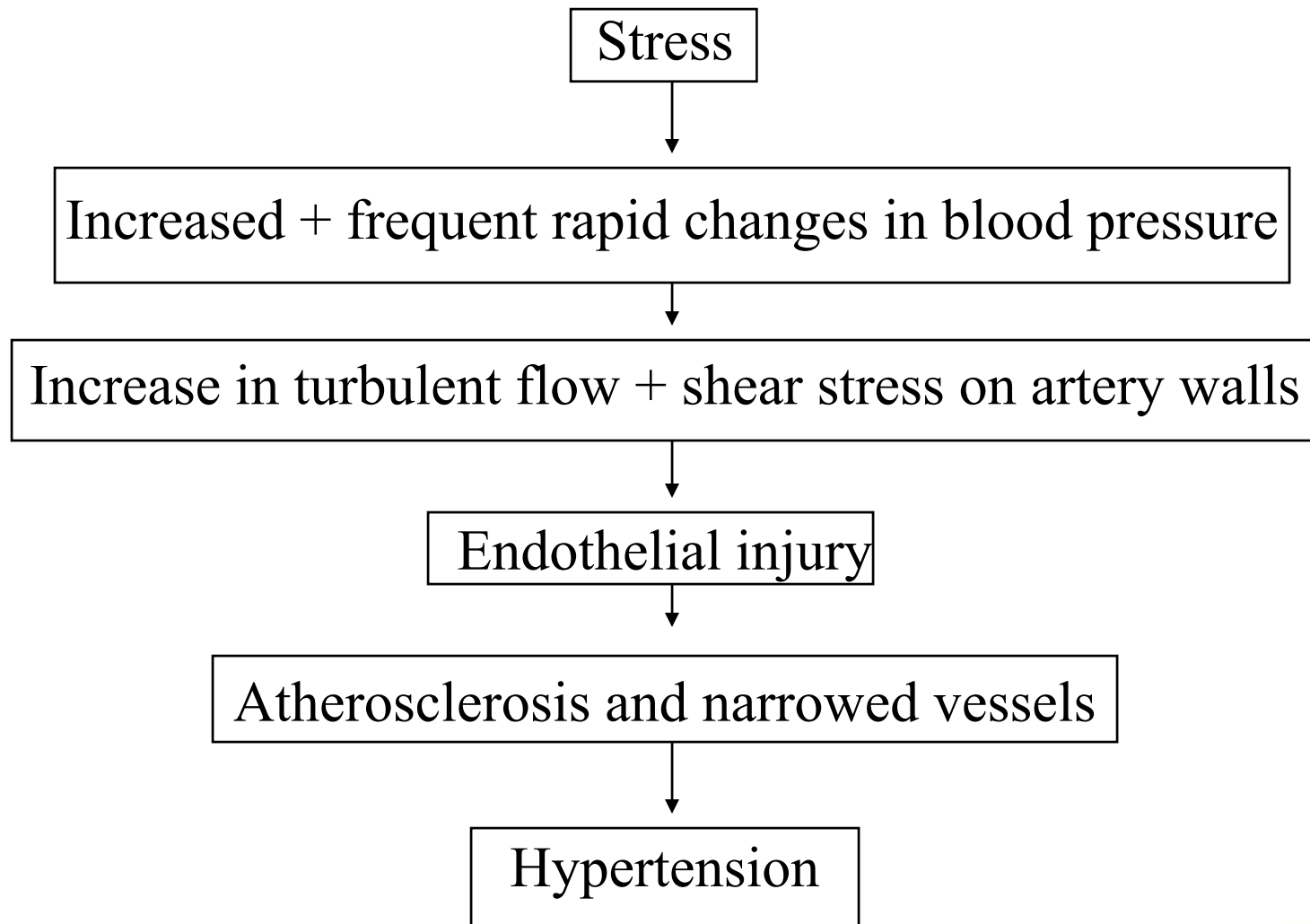
# *How Do Intimacy & Isolation Affect Health?*

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 Through damage done by stress



# Sympathetic Nervous System Activation and Atherosclerosis and Hypertension



# Regressions Predicting Systolic Blood Pressure by Gender

	<b>Male (n=1067)</b>	<b>Female (n=1147)</b>
Objective isolation	-0.779	1.969
Co-resident partner	-1.823	-5.004**
Very Low Loneliness (omitted)	-	-
Low Loneliness (4-5)	-2.418	-1.313
Moderate Loneliness (6)	-4.377*	-4.021†
High Loneliness (7-9)	-2.745	-1.895
Lacks Social Support	2.437*	1.034
Obese	1.913	1.019
Exercises	1.406	-0.174
Smokes cigarettes	0.939	-1.614
Drinks heavily	5.731**	3.429

Net of: Age, education, race/ethnicity, presence of spouse/partner, antihypertensive drugs, depression, anxiety, stress, and sleep quality.



# Regressions Predicting CRP by Gender

	<b>Male (n=689)</b>	<b>Female (n=726)</b>
Objective isolation	0.034	0.153†
Co-resident partner	-0.194†	0.104
Loneliness (standardized)	-0.013	0.020
Lacks Social Support	-0.004	-0.045
Obese	0.462**	0.622**
Exercises	-0.239**	-0.089
Smokes cigarettes	0.493**	0.197
Drinks heavily	0.145	-0.241
Good sleep quality	-0.233*	0.002

Net of: Age, education, race/ethnicity, presence of spouse/partner, SBP, antihypertensive drugs, depression, anxiety, and stress.

† significant at 10%; \* significant at 5%; \*\* significant at 1%



# National Social Life, Health, and Aging Project

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 NSHAP data publicly available

 NACDA at ICPSR

University of Michigan

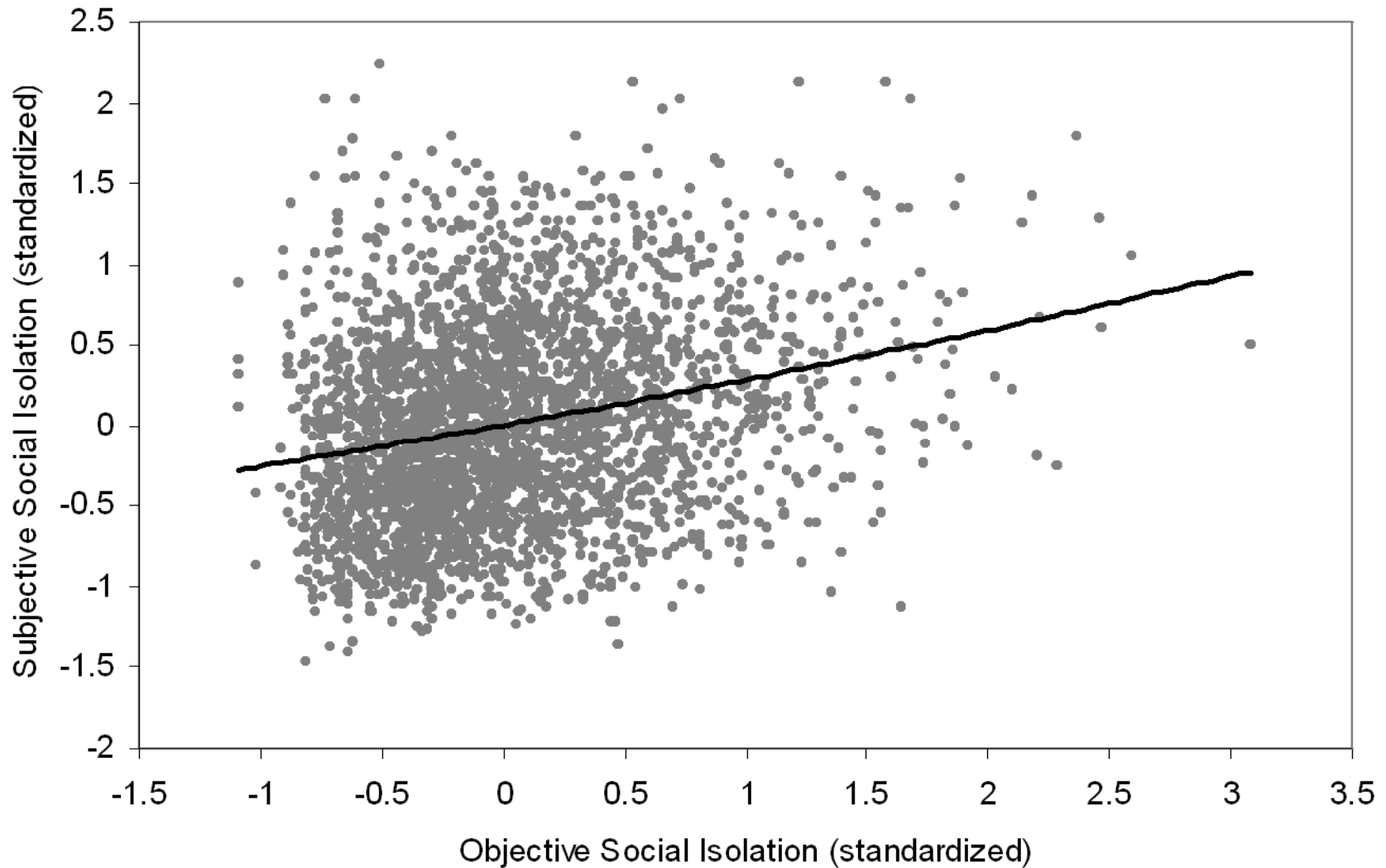


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# Extra Slides



Figure 1. The Relationship between Objective Isolation and Subjective Isolation



# Table 1. Ordered Logistic Regressions Predicting Self-Rated Physical Health (n = 2978)

	Model 1	Model 2	Model 3	Model 4
Age (in decades)	.02	.02	.04	.04
Attended college	.68***	.58***	.65***	.58***
Co-morbidities	-.54***	-.56***	-.55***	-.56***
Female	.32***	.20*	.23**	.16
Lives alone	.23	.17	.27*	.22
Non-white	-.65***	-.61***	-.61***	-.59***
Spouse/partner	.56***	.48***	.45***	.40**
<b>Objective social isolation</b>		<b>-.45***</b>		<b>-.34***</b>
<b>Subjective social isolation</b>			<b>-.64***</b>	<b>-.55***</b>

\*p < .05; \*\*p < .01; \*\*\*p < .001 (two-tailed tests)

<sup>a</sup> Higher values indicate better health.

<sup>b</sup> Estimates presented are survey-adjusted and weighted for the probability of selection with post-stratification adjustments for non-response.



Table 2. Ordered Logistic Regressions Predicting Self-Rated Mental Health (n = 2980)

	Model 1	Model 2	Model 3	Model 4
Age (in decades)	-.06	-.06	-.03	-.03
Attended college	.65***	.59***	.64***	.62***
Co-morbidities	-.19***	-.20***	-.19***	-.20***
Female	-.17*	-.25**	-.32***	-.34***
Lives alone	-.02	-.07	.04	.03
Non-white	-.41**	-.38*	-.35*	-.34*
Spouse/partner	.19	.13	-.02	-.03
<b>Objective social isolation</b>		<b>-.30***</b>		<b>-.08</b>
<b>Subjective social isolation</b>			<b>-1.06***</b>	<b>-1.03***</b>

\* p < .05; \*\* p < .01; \*\*\* p < .001 (two-tailed tests)

<sup>a</sup> Higher values indicate better mental health.

<sup>b</sup> Estimates are survey-adjusted and weighted for probability of selection with post-stratification adjustments for non-response. Standard errors are presented in parentheses.



# Table 3. OLS Regressions Predicting Depressive Symptoms<sup>a</sup>

	Model 1	Model 2	Model 3	Model 4
Age (in decades)	-.20*	-.21*	-.29*	-.29*
Attended college	-1.10***	-.88**	-.90***	-.85***
Co-morbidities	.61***	.63***	.59***	.59***
Female	.18	.42*	.68**	.73***
Lives alone	.26	.39	-.06	-.03
Non-white	.71*	.63*	.42	.40
Spouse/partner	-.80	-.63	-.19	-.16
Objective social isolation		.95***		.22
Subjective social isolation			3.34***	3.29***

\*p < .05; \*\*p < .01; \*\*\*p < .001 (two-tailed tests)

<sup>a</sup> Higher values indicate more depressive symptoms, based on the CES-D-ml.

<sup>b</sup> Estimates presented are survey-adjusted and weighted for the probability of selection with post-stratification adjustments for non-response.

Figure 4. Predicted Depressive Symptoms, by Levels of Objective and Subjective Isolation

