RESILIENCE IN OLDER ADULTS: RESEARCH OPPORTUNITY USING LONGITUDINAL DATA

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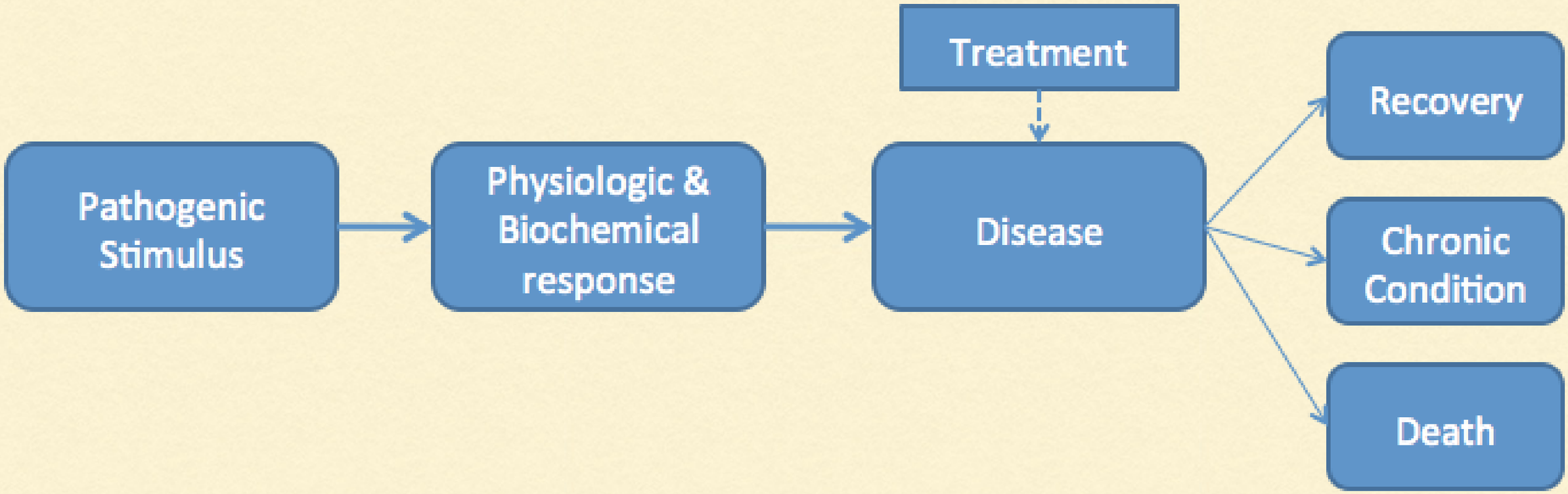
WHY STUDY RESILIENCE?

- Traditional Aging Research Paradigm is missing important information:
  - If comparable older adults are exposed to the same stressor why do some recover and others don’t?
  - Why do some older adults with low SES do better after an adverse event than older adults with higher SES?
- Recovery is essential in the aging process and yet it is still understudied

ATTEMPTS IN THE LITERATURE TO INCLUDE RECOVERY

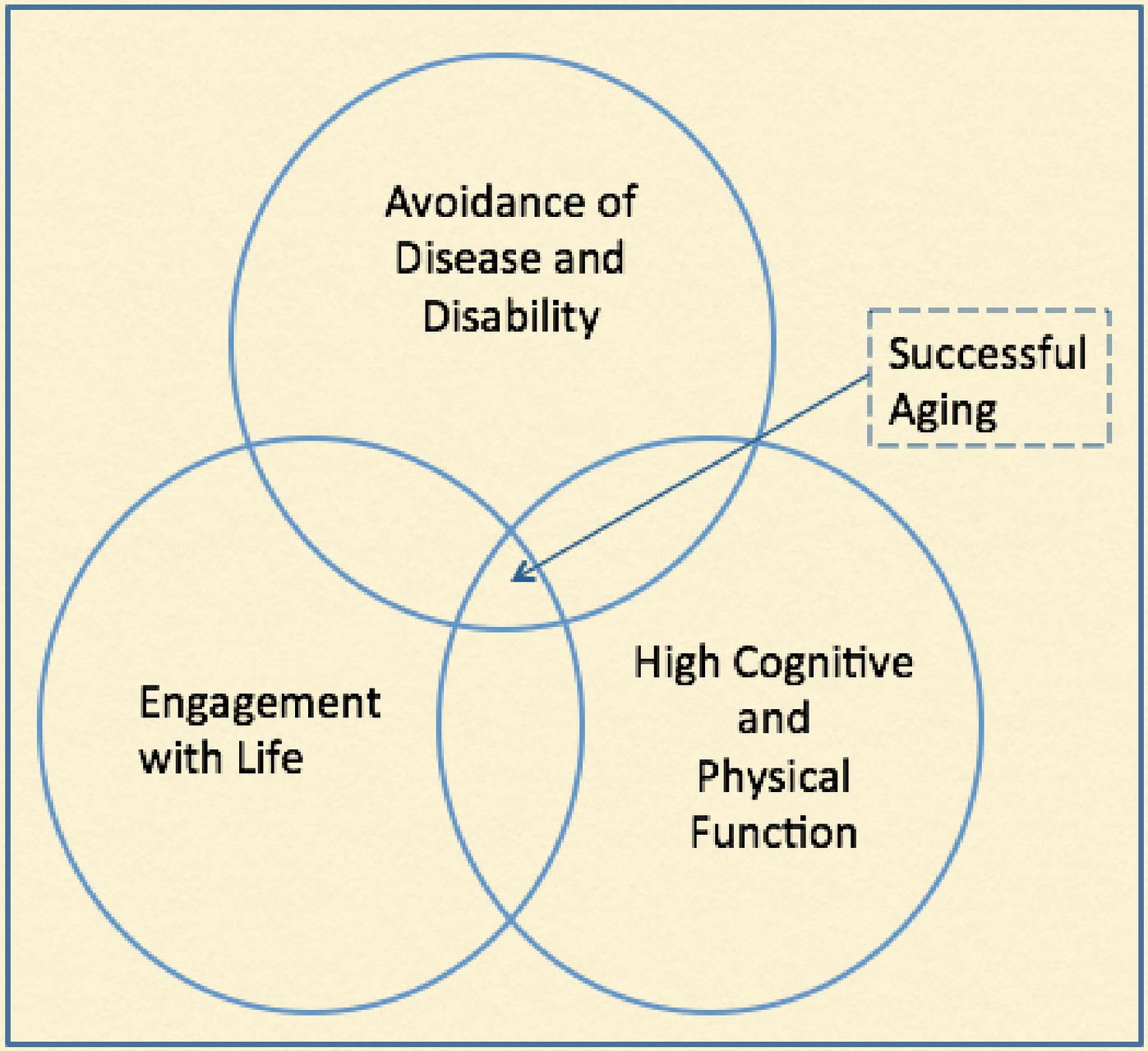
1. Biomedical model
2. Successful Aging Model
3. Healthy Aging Initiative
4. Disablement Process

BIOMEDICAL MODEL



Adapted from Lovallo 2005

SUCCESSFUL AGING MODEL



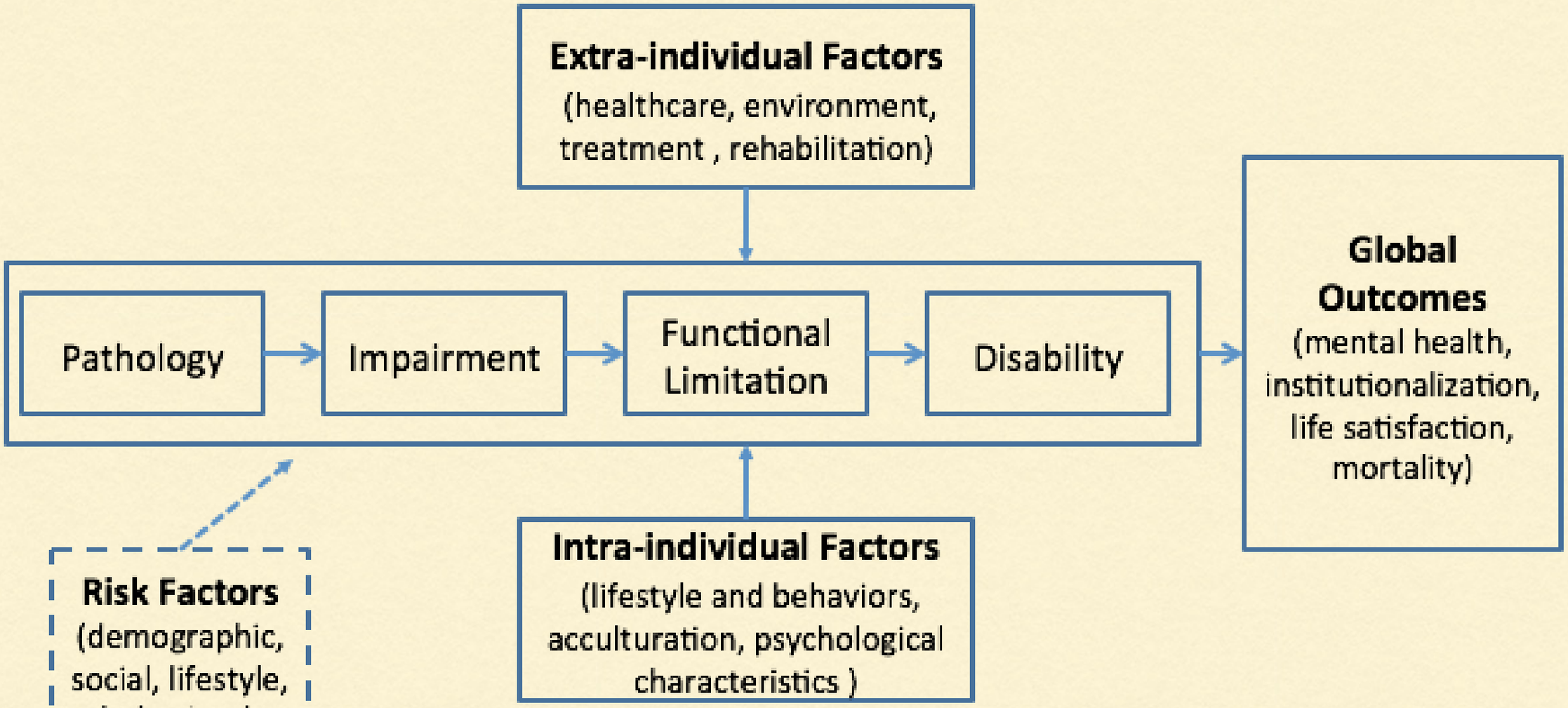
Adapted from Rowe & Kahn, 1996

HEALTHY AGING INITIATIVE

Healthy Aging over the life course	Supportive environments
Health and long-term care systems	Strengthen evidence base and research

Adapted from WHO, 2010

DISABLEMENT MODEL



Adapted from Verbrugge & Jette, 1994

DEFINING RESILIENCE

"Resilience is the process of negotiating, managing and adapting to significant sources of stress or trauma. Assets and resources within the individual, their life and environment facilitate this capacity for adaptation and 'bouncing back' in the face of adversity."

Windle, G, 2011

OPERATIONALIZING RESILIENCE

- Essential requirements for resilience

1. There must be a major risk or adversity that carries a significant threat for the development of a poor outcome

2. Poor outcomes as a result of the adversity are not experienced; the maintenance of normal development or functioning, such as physical or mental health, or better than expected development or functioning, in the face of adversity. This is often referred to as positive adaptation.

3. There are supportive aspects within the individual's life and environment that facilitate the capacity for adaptation to adversity

Windle, G, 2011

OPERATIONALIZING RESILIENCE

1. Identify a potentially reversible event
2. Analyze baseline characteristics of the individual
3. Analyze characteristics after the event
4. Determine if function/cognition/well-being/satisfaction with life are the same or better than before the event or at least better than expected

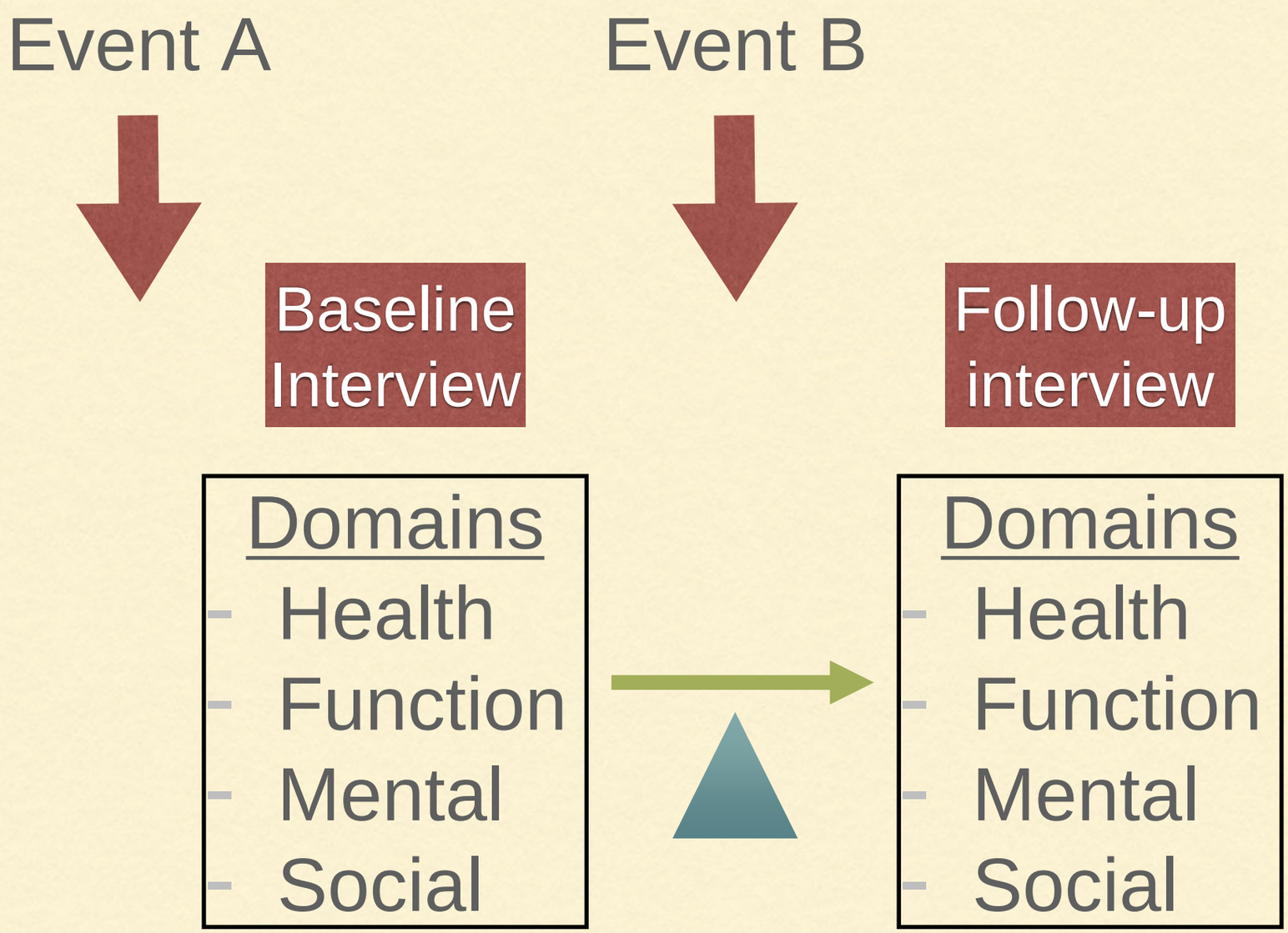
RESILIENCE IN MEXICO AND THE UNITED STATES

- Comprehensive approach
  - Medical
  - Functional
  - Mental (Cognitive/Psychological)
  - Social
- Comparable studies
- Enough and appropriate information

RESILIENCE IN MEXICO AND THE UNITED STATES

	MHAS	HRS
Waves	1&2 (2001-2003)	5&6 (2002-2004)
Sample Size	n= 6567	n= 3606
Adverse Events	Heart attack, widowhood, falls	Heart attack, widowhood, falls
Variables	Comparable variables to measure 4 domains: 10 variables for physical health, 3 for functional status, 2 for mental status, and 4 for social status	Comparable variables to measure 4 domains: 10 variables for physical health, 3 for functional status, 2 for mental status, and 4 for social status

RESILIENCE IN MEXICO AND THE US



LOGISTIC REGRESSION MODEL OF MORTALITY BETWEEN WAVES

MHAS (n= 11292, deaths 347)			HRS (n=14046, 514 deaths)		
Domain	**OR (95% CI)**	**p-value**	**Domain**	**OR (95% CI)**	**p-value**
Physical Health	2.54 (1.77-3.65)	0.003	**Physical Health**	3.42 (2.60-4.48)	<0.0001
Physical Function	2.09 (1.75-2.51)	<0.0001	**Physical Function**	1.76 (1.45-2.15)	<0.0001
Mental Status	2.09 (1.65-2.66)	<0.0001	**Mental Status**	3.24 (2.47-4.26)	<0.0001
Social Status	1.11 (0.93-1.32)	0.32	**Social Status**	1.25 (1.09-1.43)	0.002
missing = 5373			missing = 2055		
c statistic = 0.73			c statistic = 0.75		

LOGISTIC REGRESSION MODEL OF SRH BETWEEN WAVES

MHAS (n=10455)			HRS (n=13495)		
Domain	**OR (95% CI)**	**p-value**	**Domain**	**OR (95% CI)**	**p-value**
Physical Health	6.33(5.29-7.58)	<0.0001	**Physical Health**	11.77(9.90-13.99)	<0.0001
Physical Function	1.48(1.30-1.69)	<0.0001	**Physical Function**	2.75(2.39-3.15)	<0.0001
Mental Status	2.10(1.88-2.35)	<0.0001	**Mental Status**	3.69(3.12-4.37)	<0.0001
Social Status	0.93(0.86-1.00)	0.05	**Social Status**	1.22(1.13-1.33)	<0.0001
missing = 1403			missing = 2609		
c statistic = 0.71			c statistic = 0.81		

RESILIENCE RESULTS

- Higher overall resilience in the US compared to Mexico
- When analyzing by domains a different story is observed:
  - At baseline US older adults were in worse condition in the health domain than Mexico
  - At baseline Mexican Older adults had more functional impairments
  - At baseline US older adults had worse social status
  - Mental status was the same in both populations
- Different factors that promote resilience and decrease the odds of resilience are identified by domain

PROTECTIVE FACTORS AND RISK FACTORS

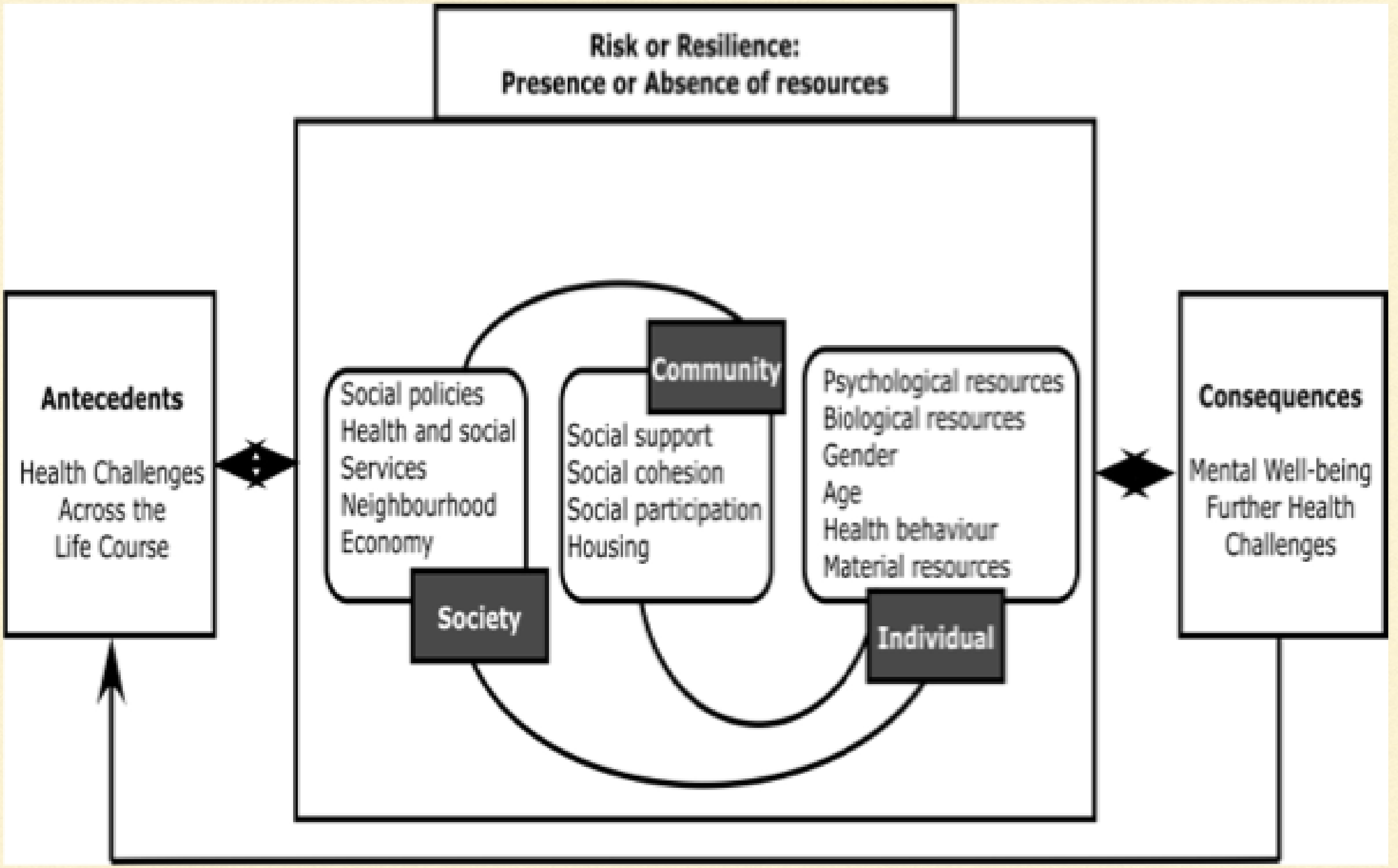
Protective Factors[a]	Δ Physical Health		Δ Functional Status		Δ Mental Status		Δ Social Status	
	MHAS	HRS	MHAS	HRS	MHAS	HRS	MHAS	HRS
Higher education					✓	✓		
Urban location (1)		✓						
Higher wealth (2)					✓			✓
Early event (3)	✓				✓			
Moderate Drinking (4)	✓			✓		✓		
Sick as child (5)							✓	
Exercise (6)		✓	✓	✓		✓		
Serious Falls							✓	
Widowhood (7)							✓	
Risk Factors[b]								
Older age			✓	✓	✓	✓	✓	
Sick as child						✓		
Ever smoking								✓
Poor SRH	✓		✓	✓	✓	✓	✓	
Late event (8)		✓						
Heart Attack	✓	✓		✓				
Widowhood					✓	✓		
Serious Falls		✓		✓	✓	✓		
Urban location (1)							✓	✓
Fewer Children								✓

RESILIENCE IN THE LITERATURE

- Proposed as a broader approach than healthy aging and a better basis for public policy and development of interventions (Stephens, C et al. 2015)

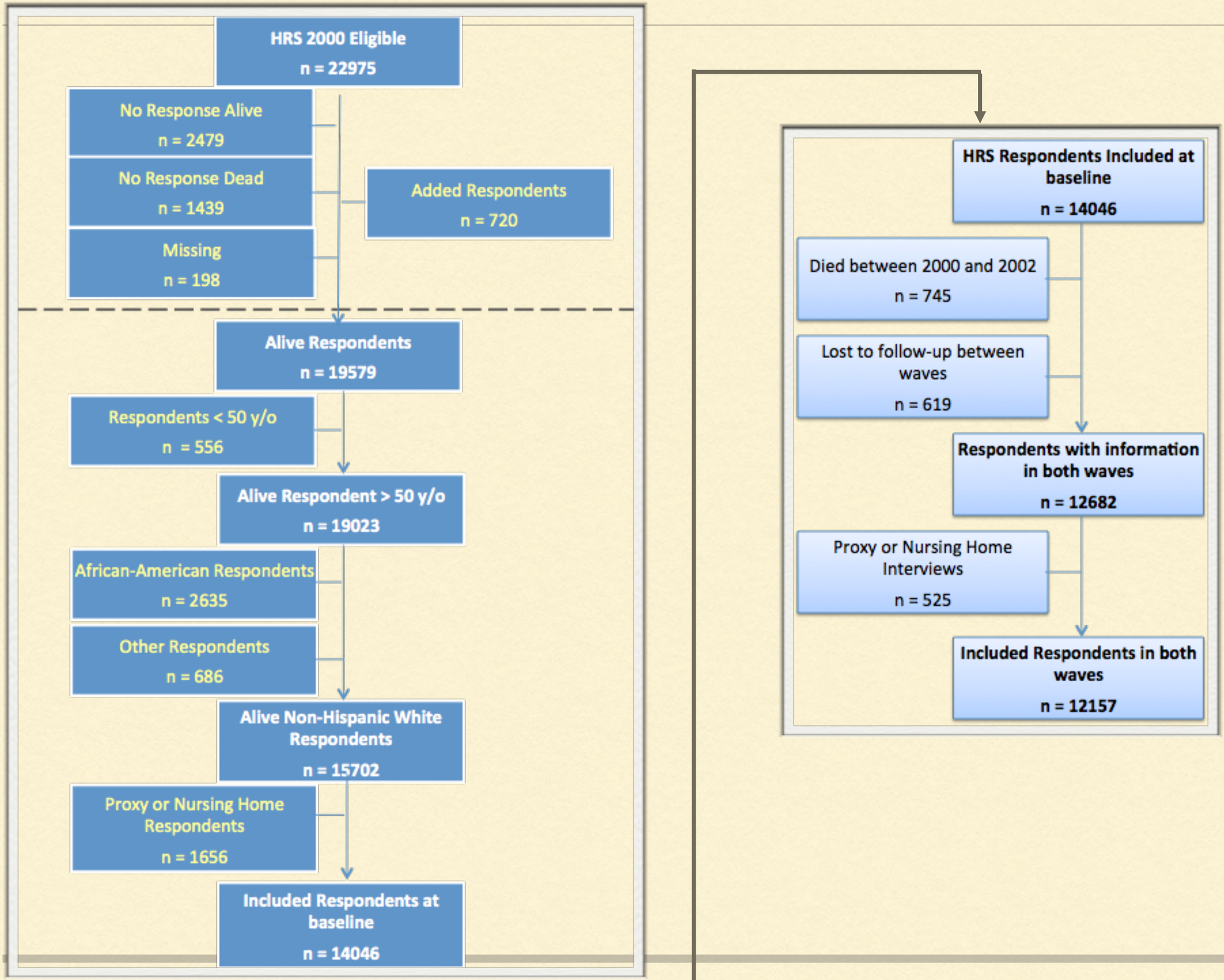
- Development of a Resilience Instruments for older adults (Smith JL & Hollinger-Smith L, 2014; Recker GT & Woo LC, 2014)

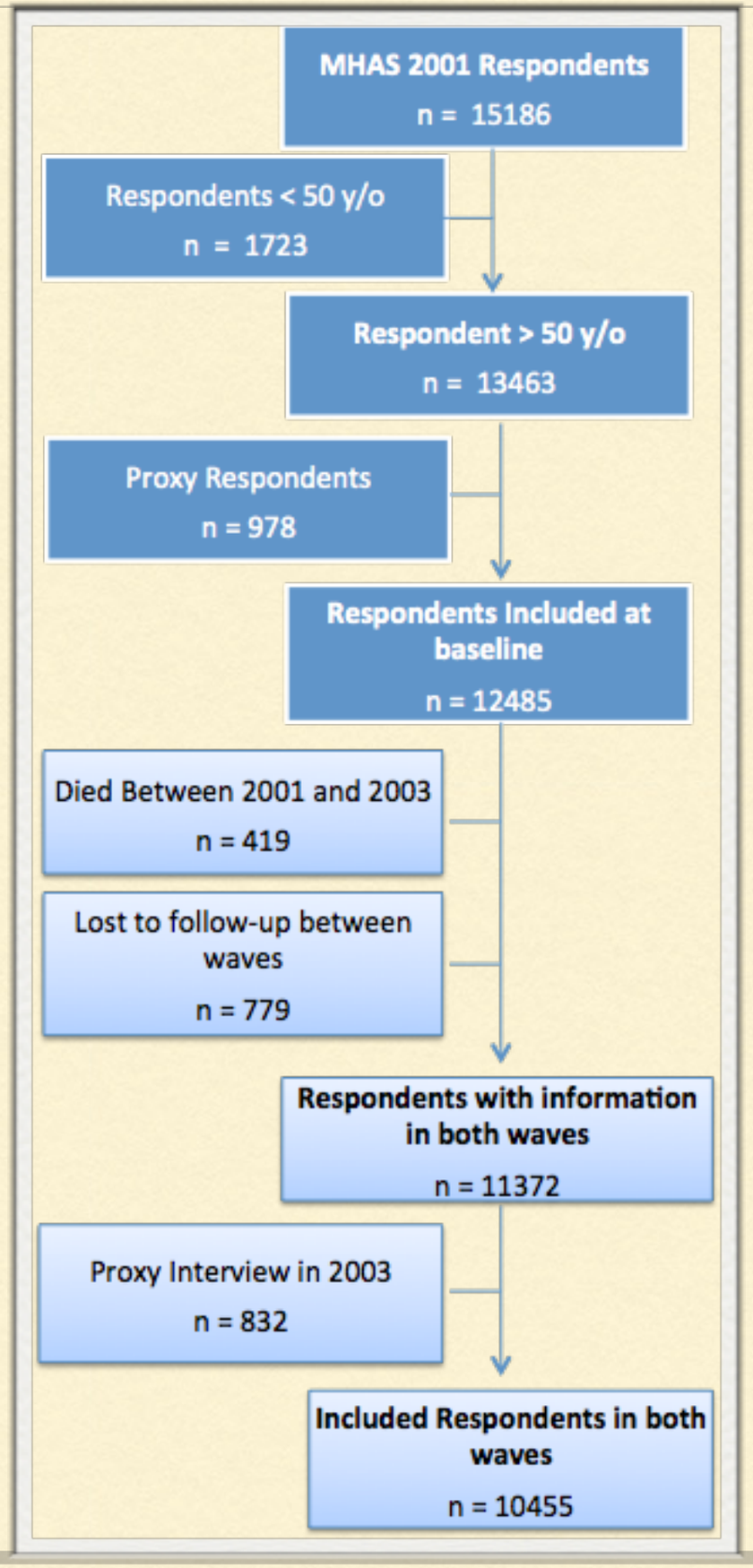
- Development of a structured resilience framework (Windle G, 2012)


Risk or Resilience:
Presence or Absence of resources
Antecedents
Health Challenges Across the Life Course
Social policies
Health and social Services
Neighbourhood
Economy
Society
Community
Social support
Social cohesion
Social participation
Housing
Psychological resources
Biological resources
Gender
Age
Health behaviour
Material resources
Individual
Consequences
Mental Well-being
Further Health Challenges

CONCLUSIONS

- Resilience is a useful concept to understand how older adults cope with adverse events
- Resilience is highly prevalent in both developing and developed countries
- Cross-national comparisons allow us to understand aging paths in different contexts
- Changing the current aging paradigm that mainly focuses on disease, disability and mortality, will help us understand positive aspects of aging


HRS 2000 Eligible
n = 22975
No Response Alive
n = 2479
No Response Dead
n = 1439
Missing
n = 198
Added Respondents
n = 720
Alive Respondents
n = 19579
Respondents < 50 y/o
n = 556
Alive Respondent > 50 y/o
n = 19023
African-American Respondents
n = 2635
Other Respondents
n = 686
Alive Non-Hispanic White Respondents
n = 15702
Proxy or Nursing Home Respondents
n = 1656
Included Respondents at baseline
n = 14046
HRS Respondents Included at baseline
n = 14046
Died between 2000 and 2002
n = 745
Lost to follow-up between waves
n = 619
Respondents with information in both waves
n = 12682
Proxy or Nursing Home Interviews
n = 525
Included Respondents in both waves
n = 12157


MHAS 2001 Respondents
n = 15186
Respondents < 50 y/o
n = 1723
Respondent > 50 y/o
n = 13463
Proxy Respondents
n = 978
Respondents Included at baseline
n = 12485
Died Between 2001 and 2003
n = 419
Lost to follow-up between waves
n = 779
Respondents with information in both waves
n = 11372
Proxy Interview in 2003
n = 832
Included Respondents in both waves
n = 10455