

Social Relationships and Biological Risk: Associations and Implications

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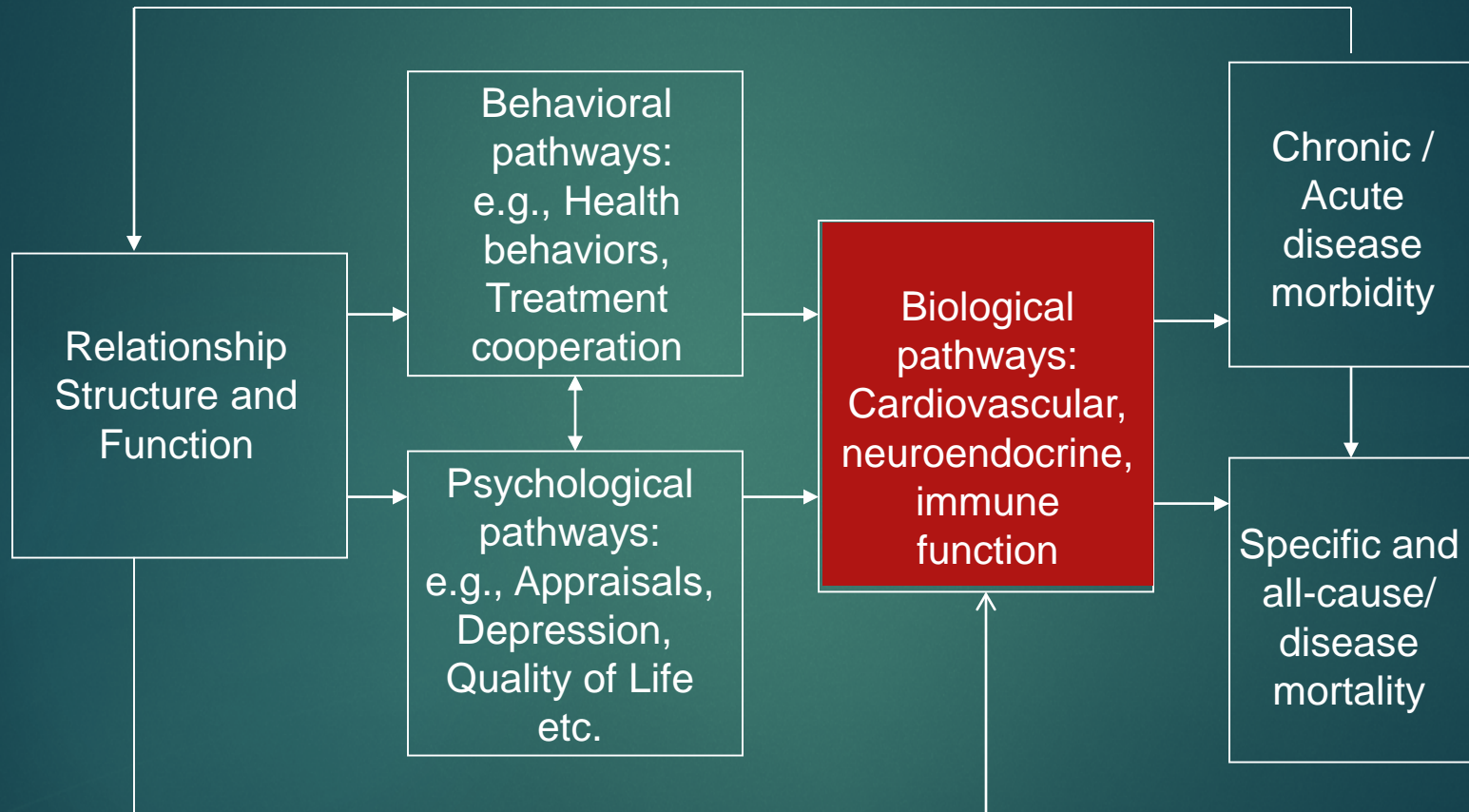
DEPARTMENT OF PSYCHOLOGY AND
HEALTH PSYCHOLOGY PROGRAM



Overview

- ▶ What are the biological mechanisms linking social relationships to health outcomes such as cardiovascular disease?
 - ▶ Autonomic nervous system (ANS).
 - ▶ Neuroendocrine system.
 - ▶ Immune system.
- ▶ Relationships as structural (i.e., integration) and functional/subjective (i.e., social support, loneliness, social negativity) constructs.

General Model Linking Social Relationships to Health











Relationships and the ANS

Relationship	Blood Pressure	Card. Reactivity	HF-HRV (Fewer Studies)
Social Support	↓	↓	↔
Social Integration	↓	—	↑
Loneliness	↑	↑	↓
Social Negativity	↑	↑	↓













Selected references: Brown et al., 2018; Cacioppo et al., 2006; Cundiff & Matthews, 2018; Hawkley et al., 2003; Holt-Lunstad et al., 2008; Norman et al., 2011; Manczak et al., 2015; Ong et al., 2012; Shankar et al., 2011; Smith et al., 2011; Stadler et al., 2012; Thorsteinsson & James, 1999; Troxel et al., 2010; Uchino et al., 1999; Uchino et al., 2016.

Relationships and Neuroendocrine Function

Relationship	Cortisol	Oxytocin (Fewer Studies)
Social Support		
Social Integration		
Loneliness		
Social Negativity		

Selected references: Chang et al., 2014; Gerteis et al., 2016; Heinrichs et al., 2003; Holt-Lunstad et al., 2008; Holt-Lunstad et al., 2015; Horsten et al., 1999; Hostinar et al., 2014; Norman et al., 2011; Seltzer et al., 2010; Stadler et al., 2012; Stafford et al., 2013; Steptoe et al., 2004; Steptoe et al., 2009; Uchino & Baldwin, 2017.

Relationships and Immunity

Relationship	Inflammation	General Immunity	Vaccine Resp. (Fewer Studies)
Social Support			
Social Integration			
Loneliness			
Social Negativity			

Select references: Bakermans-Kranenburg et al., 2013; Bosch et al., 2009; Cacioppo et al., 2015; Cole et al., 2007; Cresswell et al., 2012; Glaser et al., 1992; Hasselmo et al., 2018; Jaremka et al., 2013; Kiecolt-Glaser et al., 2005; Levy et al., 1990; Lutgendorf et al., 2005; Nersesian et al., 2018; O'Connor et al., 2015; Phillips et al., 2005; Pressman et al., 2005; Shankar et al., 2011; Uchino et al., 2018; Uchino et al., 2013.

Summary and Unanswered Questions

- ▶ Relationships most conclusively linked to blood pressure, cortisol, and inflammation.
- ▶ These biological outcomes are linked to leading causes of morbidity and mortality including cardiovascular disease and cancer.
- ▶ Question 1: How are these complex biological responses coordinated?
 - ▶ Central neural processes (Coan et al., 2017; Eisenberger et al., 2011; Layden et al., 2017).
 - ▶ Genetics (Cole, 2013; Goosen et al., 2015; Mattson et al., 2019).
 - ▶ Importance of modeling across physiological systems (Uchino, 2013).
- ▶ Question 2: How do we move towards stronger inferences?
 - ▶ Testing existing models (Brosschot et al., 2017; Cacioppo & Cacioppo, 2018; Coan & Sbarra, 2015; Cohen, 2004; Thoits, 2011; Holt-Lunstad, 2018; Uchino et al., 2018).
 - ▶ Testing the full health model.
 - ▶ Simple example: Relationships → Physiology → Disease.

Continued

- ▶ Question 3: What are the antecedent processes?
 - ▶ Early family environment (Uchino, 2009).
- ▶ Question 4: What are the psychosocial mechanisms?
 - ▶ Stress, depression, control etc.
 - ▶ Very little direct evidence to date (Uchino et al., 2013).
- ▶ Question 5 What are the intervention implications?
 - ▶ Very little work incorporating biological outcomes.
 - ▶ Family therapy (Miller et al., 2014).
 - ▶ CBT (Masi et al., 2011).
 - ▶ Mindfulness, loving-kindness, warm-touch (Cresswell et al., 2012; Holt-Lunstad et al., 2013).