NIA IMPACT COLLABORATORY
TRANSFORMING DEMENTIA CARE

Dyadic designs, their foundation on theory and analytic methods

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@KSLCareDyads

Housekeeping

- All participants will be muted
- Enter **all questions** in the Zoom **Q&A/chat box** and send to All Panelists and Attendees
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Learning Objectives

Upon completion of this presentation, you should be able to:

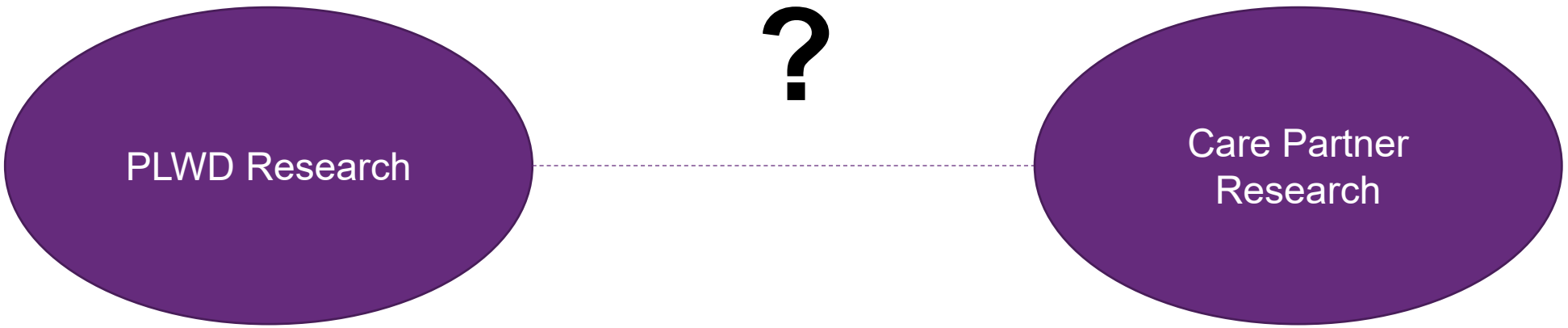
- Understand what is meant by “dyad as unit of analysis or focus.”
- Understand the importance of theory and concepts as foundations to dyadic research.
- Understand some of the design and methodological considerations in designing and conducting dyadic research.

Overview of Presentation

- A Dyadic Approach to Illness and Care
- Role of Theory & Concepts in Dyadic Research
- Design & Methodological Considerations in Dyadic Research
- Role of Family and Culture
- Take-Homes

A Dyadic Approach

- The care dyad, by definition, consists of two people. But in most family care research the members of the dyad are examined separate from their interactions and the relationships they are situated in.



A Dyadic Approach

- Including both perspectives allows for greater understanding of the:
  - Dyadic & interpersonal processes involved in the dementia experience.
  - Impact of the experience on both members of the care dyad.
  - Ways the members of the care dyad are similar or different in their perceptions.
  - Care dyads where both members experience good outcomes versus the care dyads where both members experience poor outcomes.

A Dyadic Approach

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  - Dyadic & interpersonal processes involved in the dementia experience.
  - Impact of the experience on both members of the care dyad.
  - Ways the members of the care dyad are similar or different in their perceptions.
  - Care dyads where both members experience good outcomes versus the care dyads where both members experience poor outcomes.
  - **But, obtaining data from both members of the care dyad does not necessarily make the study dyadic unless the unit of focus and analysis is at the level of the dyad (Thompson & Walker, 1982).**

What do we mean by unit of analysis/focus?

- Sampling unit or the focus of study?
- Dyad-based or dyad-focused?

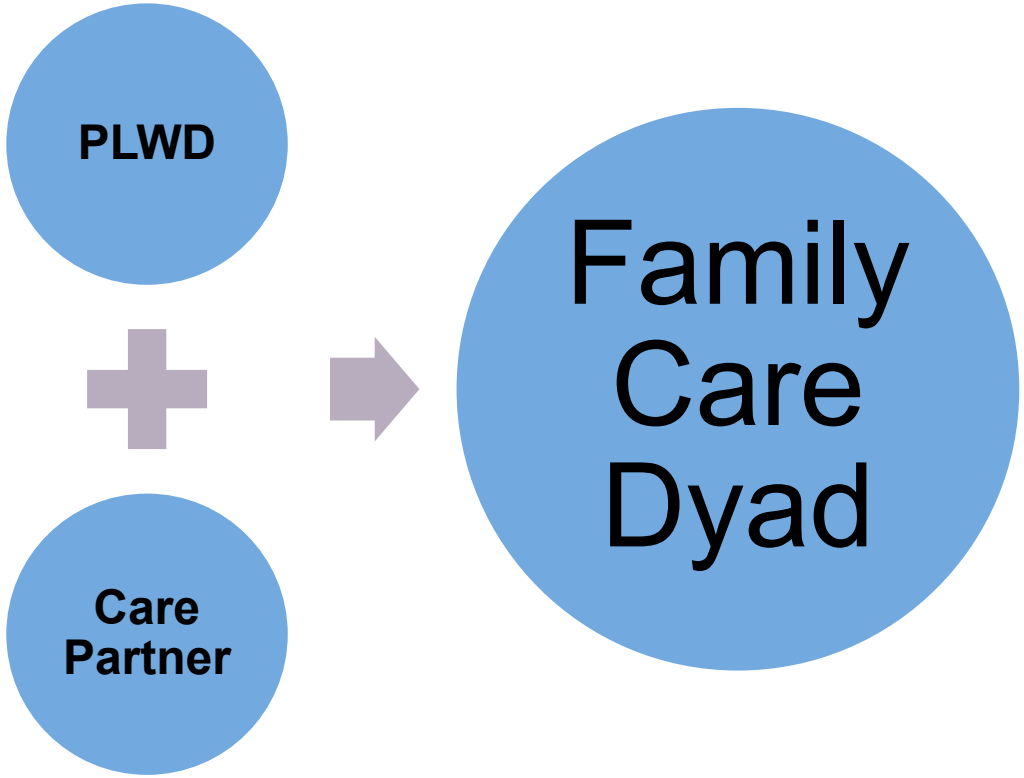
- The continuum of dyadic research:

Including Two People

Interdependent/ Transactional Nature of the Dyad

What do we mean by unit of analysis/focus?

- Thompson & Walker (1982) – seminal paper. Proposed key characteristics of dyadic research:
  - Focus is at the level of relationship: pattern between two people.
  - Interpretation & Implications of data refer to the dyadic relationship.
  - Dyadic data must be “relational.”



What do we mean by unit of analysis/focus?

AGING & MENTAL HEALTH, 2018
VOL. 22, NO. 4, 489–496
http://dx.doi.org/10.1080/13607863.2017.1280766

Routledge
Taylor & Francis Group

Incongruent perceptions of the care valu
a pilot study of patient-family caregiver

Lyndsey M. Miller [a], Carol J. Whitlatch [b], Christopher S.

Lyndsey Miller, PhD, RN

The Gerontologist Advance Access published April 5, 2016

THE GERONTOLOGICAL SOCIETY OF AMERICA

The Gerontologist
cite as: Gerontologist, 2016, Vol. 00, No. 00, 1–10
doi:10.1093/geront/gnw055
Advance Access publication April 5, 2016

OXFORD

Research Article

Quality of Life for Dementia Caregiving Dyads: Effects o Incongruent Perceptions of Everyday Care and Values

Heehyul Moon, PhD,[1,*] Aloen L. Townsend, PhD,[2] Carol J. Whitlatch, PhD,[3] an Peggye Dilworth-Anderson, PhD[4]

Heehyul Moon, PhD, MSW

Kalisha Bonds, PhD, RN, PMHNP-BC

The Gerontologist
cite as: Gerontologist, 2021, Vol. 61, No. 3, 383–391
doi:10.1093/geront/gnaa086
Advance Access publication July 1, 2020

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OXFORD

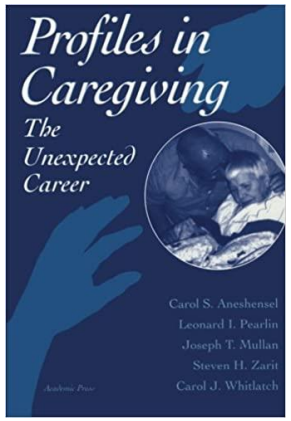
Research Article

Patterns of Dyadic Appraisal of Decision-Making Involvement of African American Persons Living With Dementia

Kalisha Bonds, PhD, RN, PMHNP-BC,[1,*] MinKyoung Song, PhD, RN, FNP, FAHA,[1] Carol J. Whitlatch, PhD, FGSA,[2] Karen S. Lyons, PhD, FGSA,[3] Jeffrey A. Kaye, MD,[4] and Christopher S. Lee, PhD, RN, FAHA, FAAN, FHFSA[3]

My Journey into Dyadic Research

Aline Sayer, EdD



Family Care Dyad

The Dyad as the Unit of Analysis: Conceptual and Methodological Issues

Linda Thompson and Alexis J. Walker

Journal of Marriage and Family
Vol. 44, No. 4, Methodology: The Other Side of Caring (Nov., 1982), pp. 889-900 (12 pages)

Published by: National Council on Family Relations

Aging & Mental Health, May 2005; 9(3): 189–195

Routledge

ORIGINAL ARTICLE

Using multilevel modeling in caregiving research

K. S. LYONS[1], & A. G. SAYER[2]

Journal of Gerontology: PSYCHOLOGICAL SCIENCES
2002, Vol. 57B, No. 3, P195–P204

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Caregiving as a Dyadic Process: Perspectives From Caregiver and Receiver

Karen S. Lyons,[1] Steven H. Zarit,[1] Aline G. Sayer,[2] and Carol J. Whitlatch[3]

Carol Whitlatch, PhD, FGSA

Steven H. Zarit, PhD, FGS

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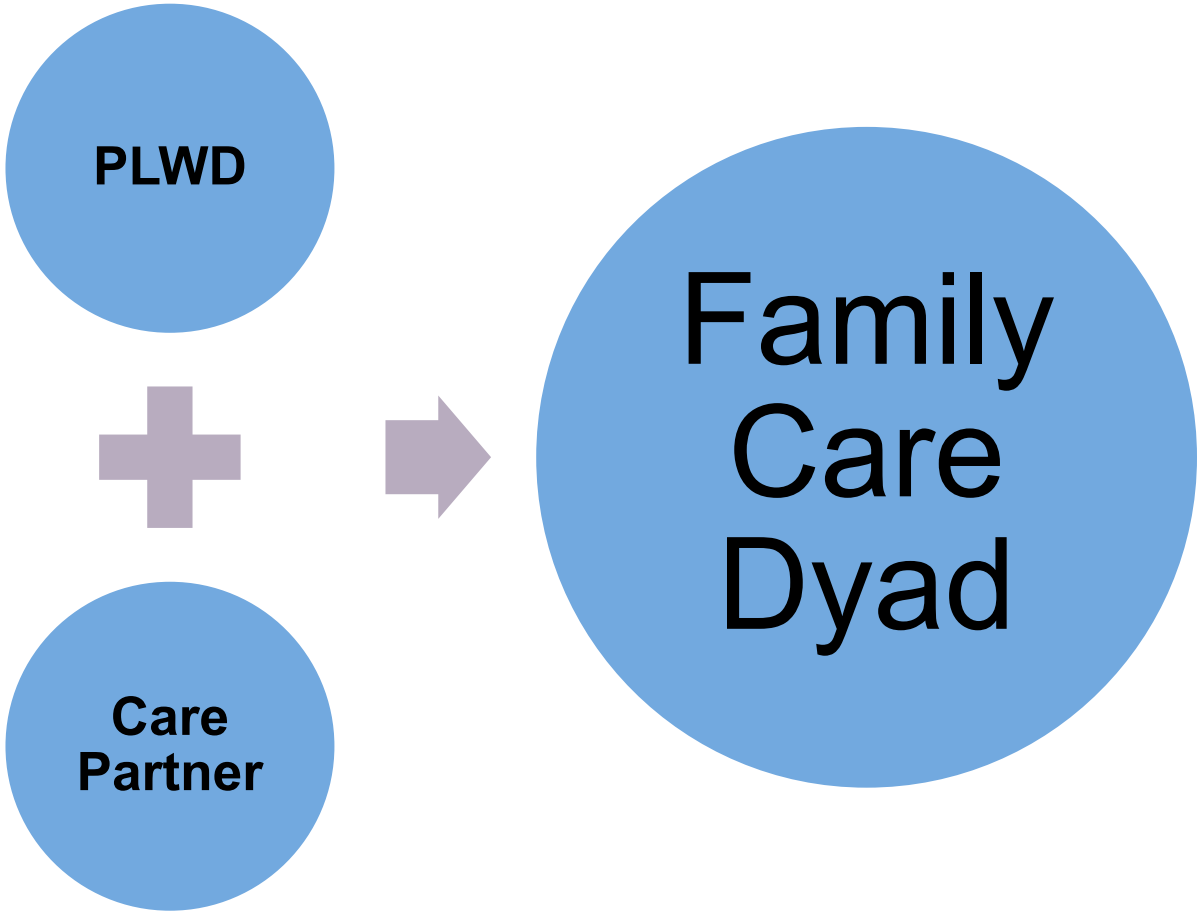
A Dyadic Approach



Theory

Role of Theory & Concepts

- Theories provide the scaffolding or handrail for research.
- They help to create bodies of knowledge and advance a field of research faster than disconnected atheoretical work.
- They guide us towards the concepts we should examine and potential explanations for our findings.
- They directly inform the design and conduct of interventions.
- They work synergistically with a body of knowledge to highlight gaps in the field, areas for innovation and limitations of our theories.

Role of Theory & Concepts

Individual-level theories are good, but they are limited in their ability to guide dyadic research as they do not capture the interdependence or interpersonal context.

Role of Theory & Concepts

- Dyadic theories and frameworks are predominantly focused on couples.
- Examples of dyadic theories include:
  - Interdependence Theory (Kelley, 1983)
  - Systemic-Transactional Model (Bodenmann, 1997)
  - Developmental-contextual model of couples coping with chronic illness (Berg & Upchurch, 2007)
  - Dyadic Health Behavior Change Model (Trivedi et al., 2016)
  - Theory of Dyadic Illness Management (Lyons & Lee, 2018)

Theory of Dyadic Illness Management

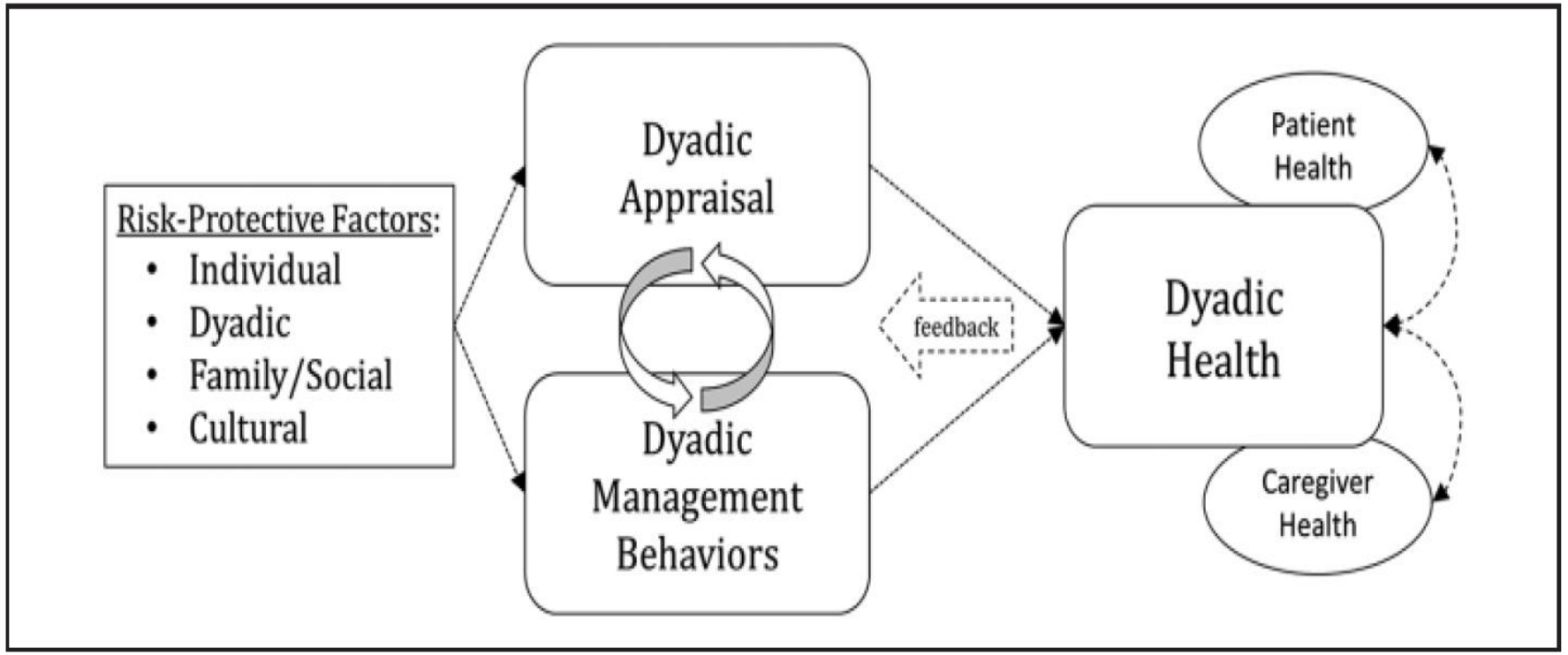


Figure 2. Theory of Dyadic Illness Management with predictors.

Central Goal:

To Optimize Dyadic Health

Lyons, K.S. & Lee, C.S. (2018). The theory of dyadic illness management. *Journal of Family Nursing, 24,* 8-28.

Dyadic Appraisal

- “Are we on the same page?”
  - Usually not.
- Dyadic appraisal research focuses on
  - symptoms, illness appraisals, goals of care.
  - within dementia, the focus is primarily on shared appraisals regarding the PLWD’s care values and preferences, decision-making involvement.

Dyadic Appraisal

Journal of Gerontology: PSYCHOLOGICAL SCIENCES
2002, Vol. 57B, No. 3, P195–P204

Caregiving as a Dyadic Process: Perspectives From Caregiver and Receiver

Karen S. Lyons,[1] Steven H. Zarit,[1] Aline G. Sayer,[2] and Carol J. Whitlatch[3]

Dyadic appraisal has been associated with

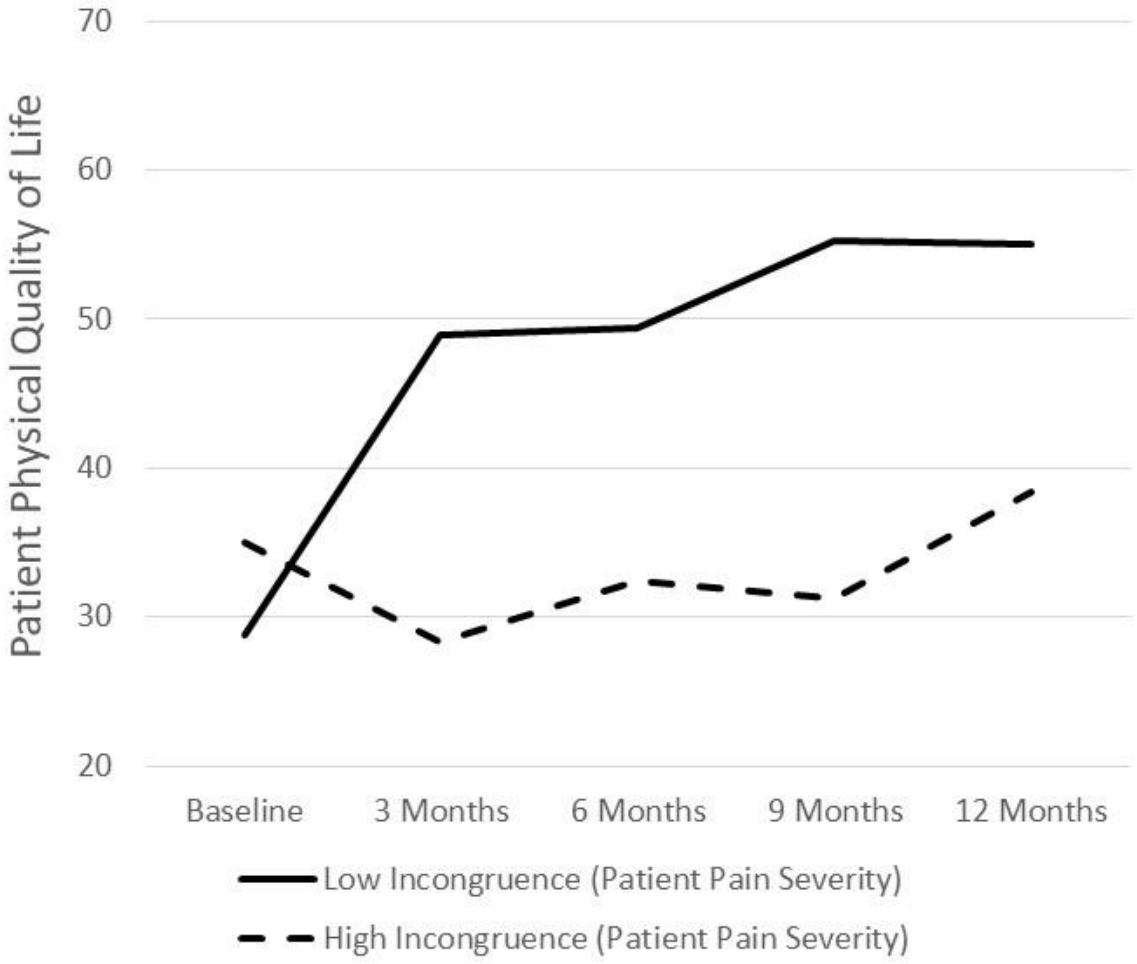
- type of care partner,
- depressive symptoms,
- care strain,
- relationship quality,
- communication/concealment,
- collaborative management
- quality of life

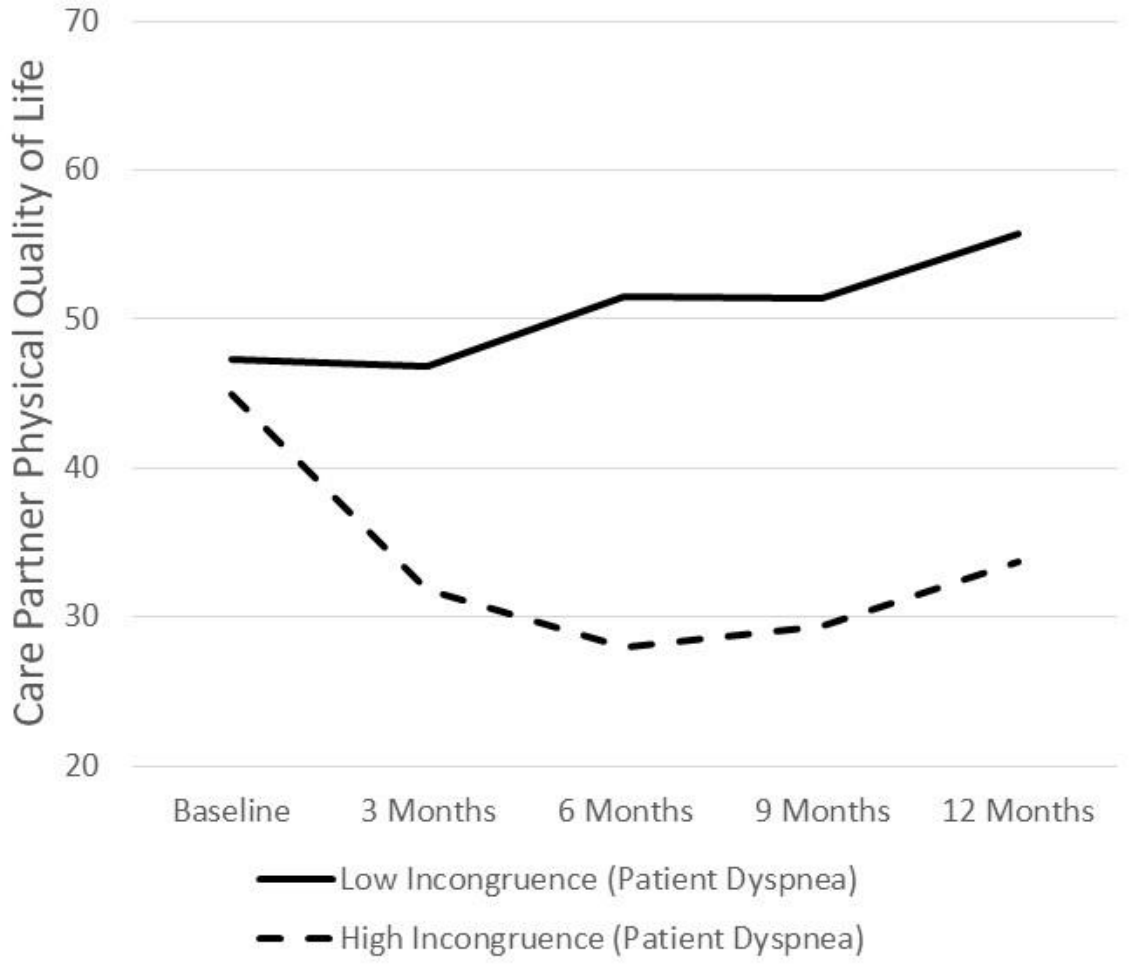
Dyadic Appraisal of IADLs and Barriers to Care

Relationship quality was significantly associated with dyadic appraisal

Cognitive impairment was not associated with dyadic appraisal.

Incongruent Appraisals Predict QOL





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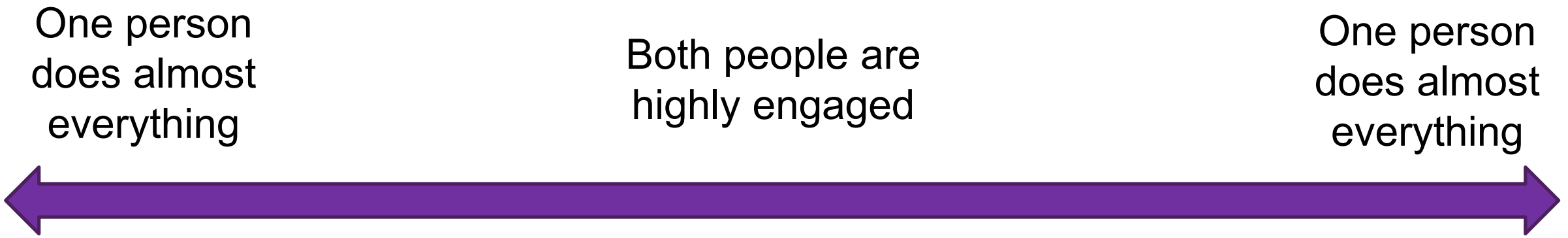
Lyons, K. S., & Lee, C. S. (2020). The association of dyadic symptom appraisal with physical and mental health over time in care dyads living with lung cancer. *Journal of Family Nursing, 26*(1), 15-25.

Dyadic Management

- Dyadic management behaviors are the verbal and non-verbal behaviors that care dyads do to manage and cope with illness, symptoms and providing care (Lyons et al., 2021; Lyons & Lee, 2018). For example,
  - Communication
  - Decision-making
  - Supportive behaviors
  - Shared health behaviors

Dyadic Management

- Collaboration is on a continuum & will not look the same for every dyad.
- Dyadic management also encompasses the behaviors to optimize the care partner's health – care partners often have their own health challenges.



Collaborative Management in Dementia

AGING & MENTAL HEALTH
2021, VOL. 25, NO. 4, 703–710
https://doi.org/10.1080/13607863.2020.1711865

Factors influencing quality of life in African-American dementia dyads

Kalisha Bonds[a], Carol J. Whitlatch[b], MinKyoung Song[a] and Karen S. Lyons[c]

Article

dementia

Dementia
2019, Vol. 18(1) 360–379

DOI: 10.1177/1471301216673455
journals.sagepub.com/home/dem
SAGE

The SHARE program for dementia: Implementation of an early-stage dyadic care-planning intervention

Silvia Orsulic-Jeras, Carol J Whitlatch and Sarah M Szabo
Benjamin Rose Institute on Aging, Cleveland, OH, USA

Evan G Shelton
Department of Psychology, Cleveland State University, Cleveland, OH, USA; Benjamin Rose Institute on Aging, Cleveland, OH, USA

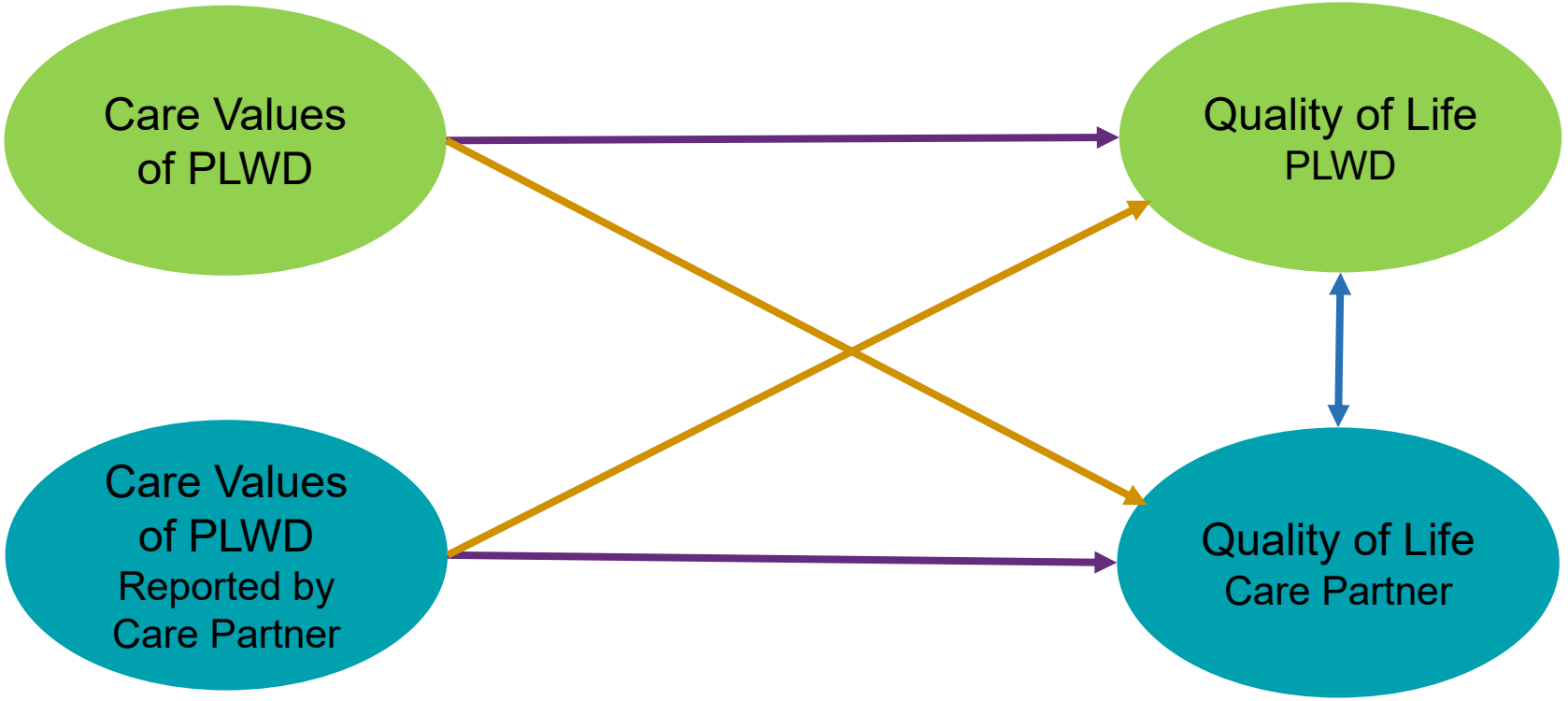
Justin Johnson

Dyadic Health

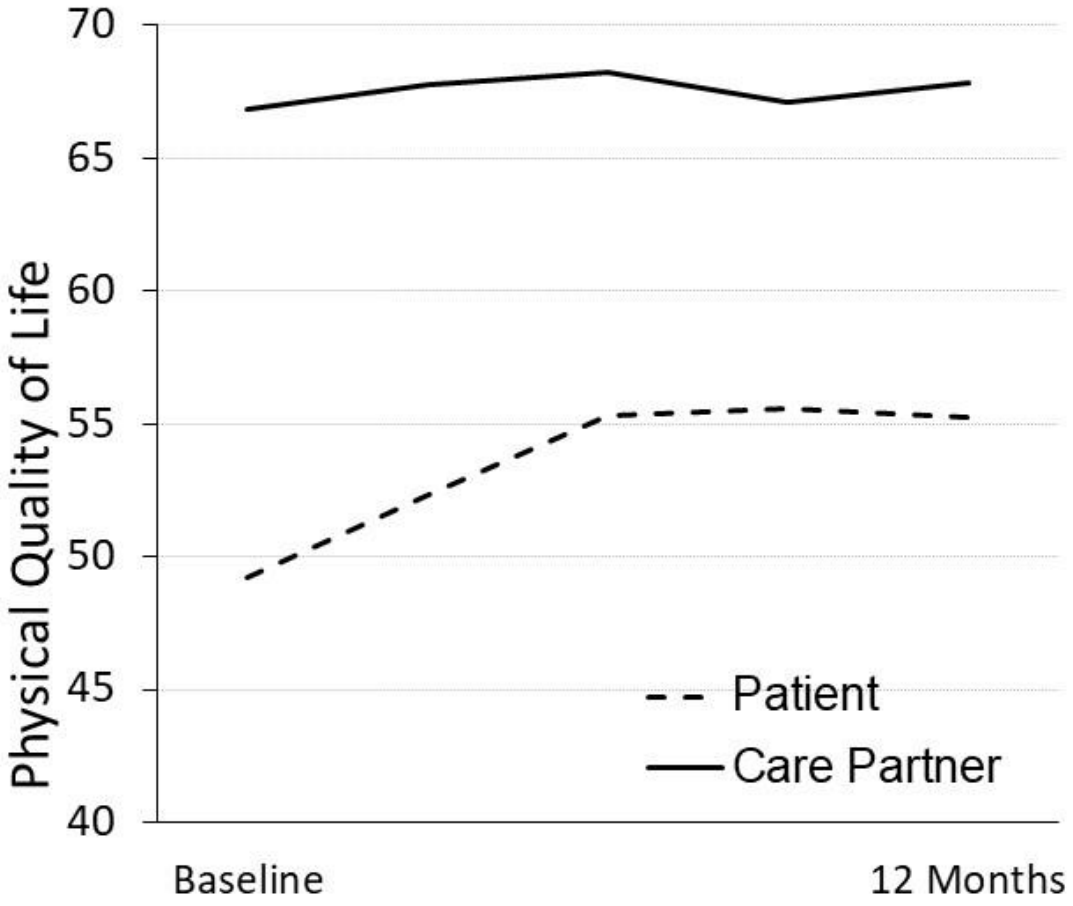
- Focusing on the health of the dyad allows us to balance the needs and health of both the PLWD and their care partner.
- If we only focus on one person's health we can miss the impact of the intervention on both of them or how they influence each other.
- Two ways to think about this:
  - Interdependence in health
  - Patterns of dyadic health

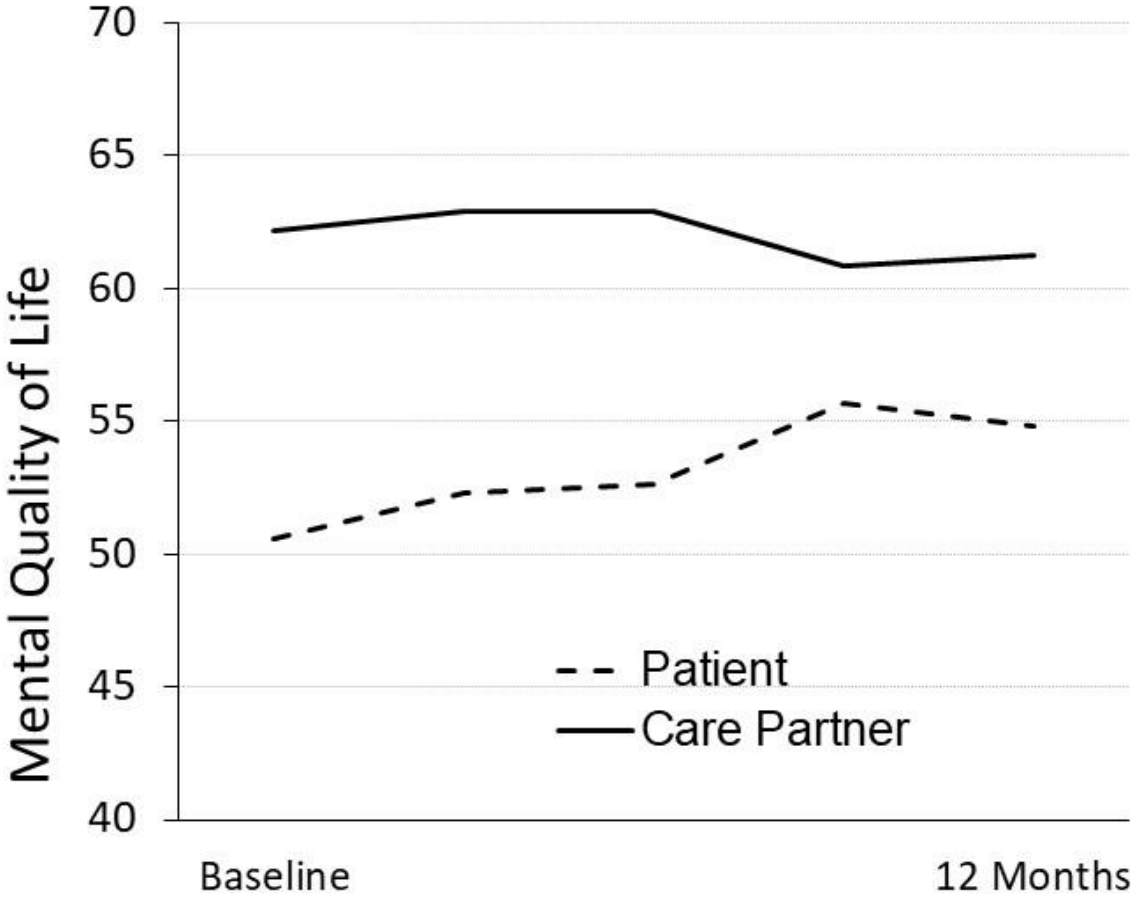
Dyadic Health

Actor-Partner-Interdependence Models (APIM)



Dyadic Health in Stroke





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Pucciarelli, G., Vellone, E., Savini, S., Simeone, S., Ausili, D., Alvaro, R., Lee, C.S., & Lyons, K.S. (2017). Roles of Changing Physical Function and Caregiver Burden on Quality of Life in Stroke: A Longitudinal Dyadic Analysis. *Stroke, 48*, 733-739.

Patterns of Dyadic Health

- Categorizing health using clinical cut-offs
  - Optimal Dyadic Health
  - Poor Dyadic Health
  - Incongruent Dyadic Health
- Identifying patterns of health in the data

Categories of Dyadic Health

Table 1. Individual, dyadic and social characteristics and differences among dyadic depressive symptom groups.

	Sample *n* = 59 M (±) or *n* (%)	*Optimal Dyadic Health* *n* = 18 (31%) M (±) or *n* (%)	*Poor Dyadic Health* *n* = 19 (32%) M (±) or *n* (%)	*Incongruent Dyadic Health* *n* = 22 (37%) M (±) or *n* (%)	*p*-value[a]
Depressive symptoms					
Patient depressive symptoms (↑= worse)	6.9 ± 5.2	2.2 ± 1.7	8.8 ± 3.4	8.9 ± 5.9	<0.001
Care partner depressive symptoms (↑= worse)	4.0 ± 4.4	0.9 ± 1.0	9.1 ± 3.5	2.2 ± 2.6	<0.001
Demographic and clinical characteristics					
Patient age (years)	59.5 ± 12.0	65.4 ± 10.2	55.1 ± 13.0	58.4 ± 11.1	0.027
Patient gender (female)	20 (34%)	7 (39%)	5 (26%)	8 (36%)	0.688
NYHA dass III/IV	44 (75%)	12 (67%)	14 (74%)	18 (82%)	0.546
Hospitalized for HF in past 12 months	17 (29%)	4 (22%)	5 (27%)	8 (36%)	0.591
Patient and care partner characteristics					
Patient-reported pain interference (↑= worse)	13.1 ± 7.1	10.7 ± 7.0	13.5 ± 7.0	14.7 ± 7.1	0.193
Patient-reported fatigue (↑= worse)	24.5 ± 8.7	19.1 ± 9.4	26.9 ± 7.7	26.9 ± 7.1	0.005
Patient-reported dyspnea (↑= worse)	5.5 ± 6.1	3.3 ± 5.6	5.2 ± 5.8	7.7 ± 6.3	0.075
Care partner strain (↑= worse)	30.6 ± 8.9	29.2 ± 7.8	31.8 ± 10.9	30.8 ± 7.9	0.672
Dyadic characteristics					
Patient-reported concealment (↑= worse)	15.2 ± 5.1	12.2 ± 3.2	17.0 ± 4.9	16.1 ± 5.7	0.008
Patient-reported relationship quality (↓= worse)	3.4 ± 0.6	3.6 ± 0.4	3.2 ± 0.7	3.4 ± 0.5	0.067
Care partner-reported relationship quality (↓= worse)	3.3 ± 0.6	3.4 ± 0.7	3.1 ± 0.7	3.5 ± 0.4	0.210
Incongruent appraisal of patient pain interference (↑= worse)	0.6 ± 0.7	0.3 ± 0.4	0.9 ± 0.9	0.6 ± 0.7	0.041
Incongruent appraisal of patient fatigue (↑= worse)	0.6 ± 0.4	0.5 ± 0.4	0.6 ± 0.4	0.7 ± 0.5	0.225
Incongruent appraisal of patient dyspnea (↑= worse)	0.6 ± 0.6	0.6 ± 0.6	0.5 ± 0.6	0.7 ± 0.6	0.457
Social/familial characteristics					
Patient-reported social/family support (↓= worse)	69.1 ± 10.9	72.5 ± 7.5	63.9 ± 12.5	71.0 ± 10.7	0.028
Care partner-reported social/family support (↓= worse)	62.8 ± 17.3	65.2 ± 18.6	57.3 ± 19.8	65.5 ± 13.1	0.247

HF, heart failure; NYHA, New York Heart Association.
[a]ANOVAs for continuous variables and Pearson's chi-square test for categorical variables.

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Lyons, K.S., Hutton Johnson, S., & Lee, C.S. (2021). The role of symptom appraisal, concealment and social support in optimizing dyadic mental health in heart failure. *Aging & Mental Health. 25*(4), 734-741

Identifying Patterns of Dyadic Health

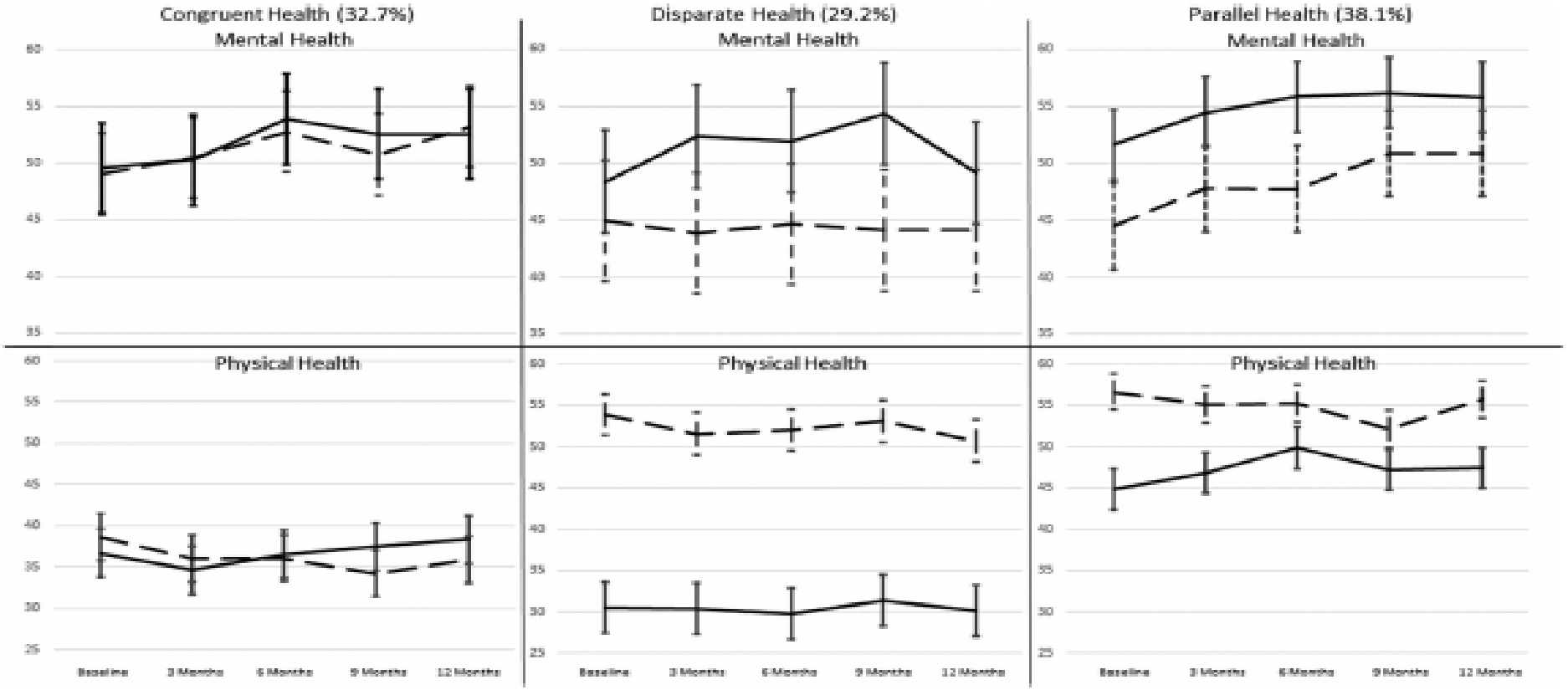

FIGURE 1 Trajectories of lung cancer patient-care partner dyadic mental health. Three distinct patterns of change in mental health over the course of 12 months among lung cancer patients and their care partners are depicted by column. Although not used to identify dyadic mental health patterns, changes in physical health also are presented. Solid horizontal lines reflect patient health; solid vertical lines reflect the 95% confidence interval within each trajectory. Dashed vertical lines reflect care partner health; dashed vertical lines reflect the 95% confidence interval within each trajectory. US normed averages on the SF-36v2 are 50 with a standard deviation of 10

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Lee, C. S. & Lyons, K. S. (2019). Patterns, relevance and predictors of dyadic mental health over time in lung cancer. *Psycho-Oncology, 28,* 1721-1727. Doi:10.1002/pon.5153

Design & Methodological Considerations

- At what level is the concept/outcome of interest?
  - Individual (e.g., quality of life)?
  - Dyadic (e.g., relationship quality, incongruence, pattern of dyadic health)?
- Are we interested in the outcomes of a dyad or individual?
- Are we interested in interdependence and/or transaction?
- Which dyad are we interested in? Which care partner or family member?

Design & Methodological Considerations

- Proxy reports were traditionally included in research as substitutions for the person with dementia or other illness.
  - Dyadic appraisal research has invalidated this assumption.
  - Proxy data needs to be called what it really is – someone else's perception of a phenomenon and should not be used in dyadic research as anything else.

Design & Methodological Considerations

- Including a dyadic-level predictor does not make a study dyadic.
- Examining PLWD variables as predictors of care partner outcomes in an individual-level analysis does not make a study dyadic.
  - But these can be important first steps towards dyadic research.

Design & Methodological Considerations

- Dyadic analysis requires the same outcomes for the PLWD & care partner and measures must be equivalent.
  - Otherwise we cannot untangle differential effects from differential measures. Is the difference due to differences between members of the dyad on the concept or differences in measures used?
- Be wary of using averages in dyadic appraisal/incongruence research.
- Don’t underestimate PLWD in mild-moderate stages
  - Use strategies to maximize their participation & include their voice/perception.

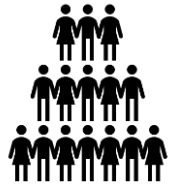
Design & Methodological Considerations

- When designing interventions, consider whether your target for change is the dyad, PLWD or care partner?
  - What interpersonal mechanisms are you including to explain change or transaction within the dyad?
  - How are you evaluating whether the intervention worked for one, none, both?

Role of Family & Culture

- Dyadic research is a sub-type of family research.



- Important to remember that not all families or cultures take a dyadic approach to illness.

Role of Family & Culture

- Not all cultures, races, ethnicities frame the care experience in the same way (even within groups)
  - Using methods and theories that explicate the variability within and across groups is vital to advance understanding.
  - Acknowledging that relationships may be conceptualized differently.
  - Some families will work as family systems; some will work as several dyadic units; some will work around a primary dyad.
  - Members of the same dyad may define “good” outcomes differently from one another – this makes the move towards “balancing needs of the dyad” all the more important.

Take-Homes

- A dyadic approach is needed to understand how two people navigate and experience illness and to optimize the health of both members.
- Dyads vary greatly in how they experience illness within & across groups.
- Don’t just chase the methods. Follow the theory and the question.
- Theory will guide the unit of focus, the concepts we examine, the measures that need to be developed, the mechanisms we design our interventions around, and how we evaluate successful interventions.
- Allow theory to guide methodological innovations.
- We cannot advance the field of dyadic science without appropriate use of theory and methods that balance the needs of both members of the care dyad.

Remember

- Dyadic science is a specialized area of research.
  - Assume that you will always have at least one dyadic expert as a reviewer.
- Dyadic research is not for everyone and it is not always the answer to the question or appropriate in all families and contexts.
  - But it is incredibly rewarding and changes the way you view illness & health.
  - Dyad as unit of care.

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Questions?