

# Data Analysis for Family Researchers

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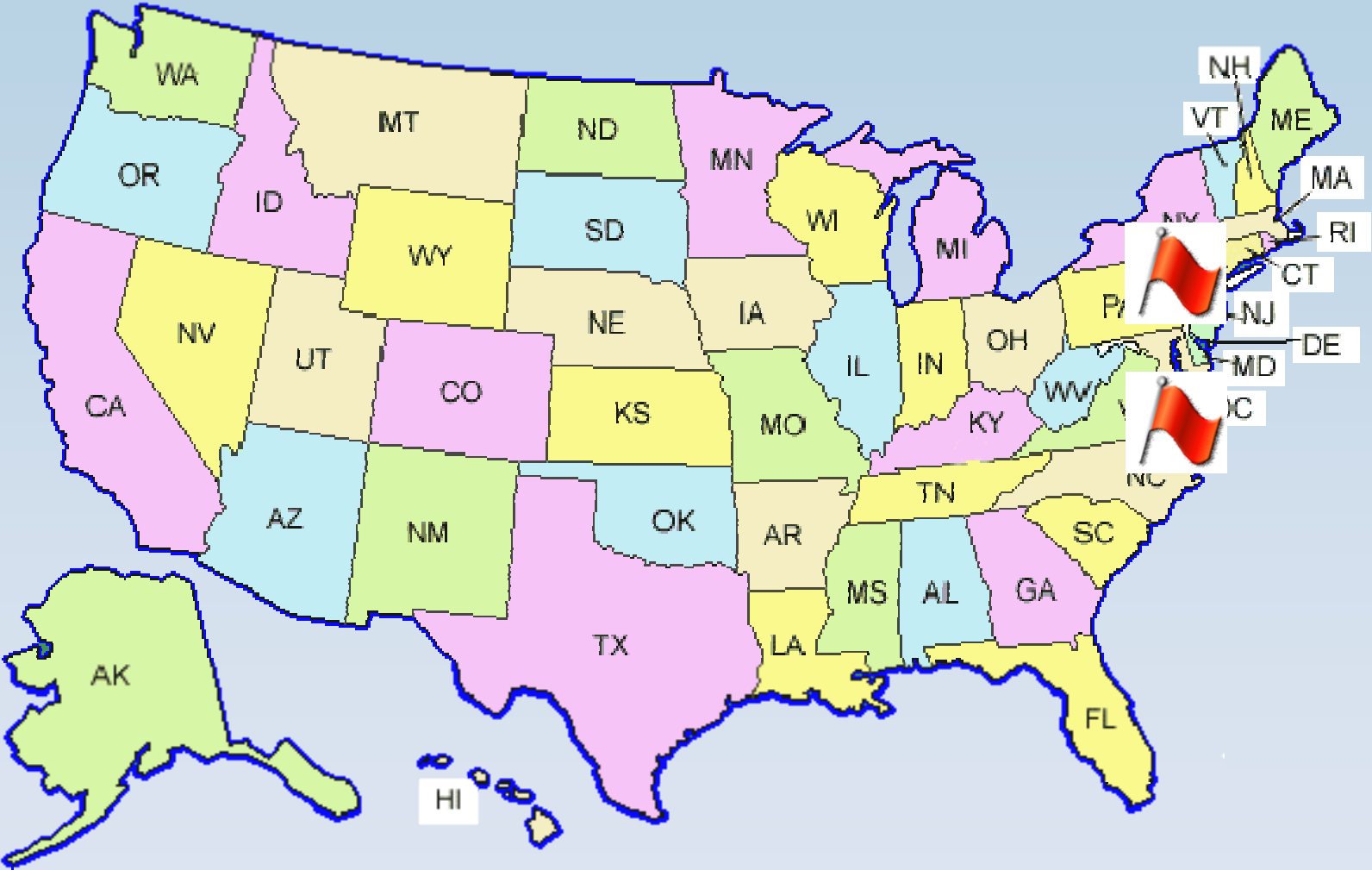
THE UNIVERSITY *of* NORTH CAROLINA *at* CHAPEL HILL

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# Introductions – Where we live; our schools; our research interests



# The University of North Carolina – Oldest Public University in the US



# University of Pennsylvania– Oldest Private University in the US



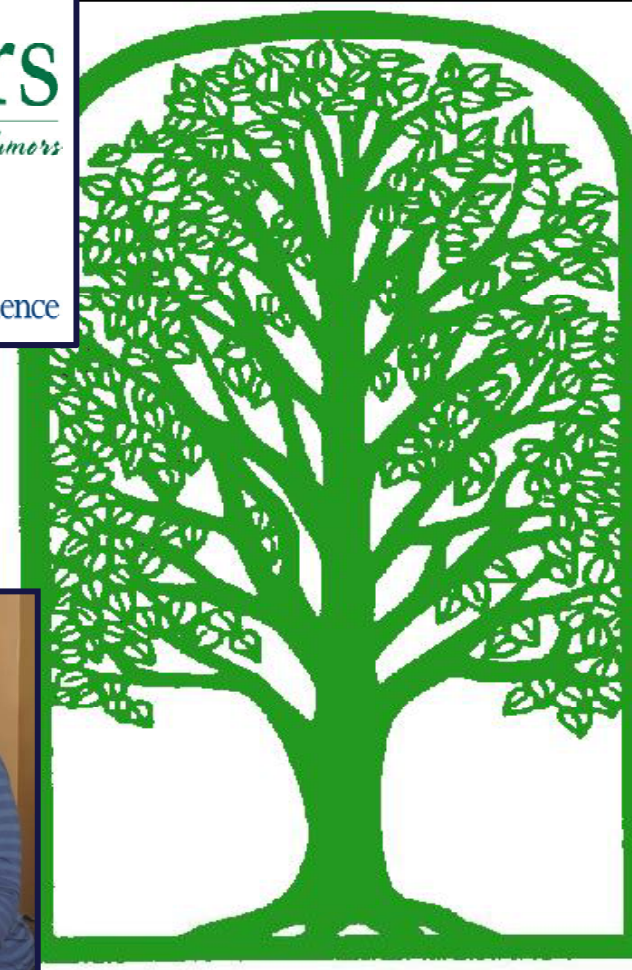
# Our Family Research Interests



**Mothers as Caregivers**  
*for Survivors of Pediatric Brain Tumors*

 The Children's Hospital  
of Philadelphia®

 Penn  
Nursing Science



Family  
Management  
of Genetic  
Information



# Overview of Workshop

- Introductions
- Nature & scope of family research
- Analytic issues in family research
  - Quantitative analysis
  - Qualitative analysis
  - Mixed method analysis
- Focus on analysis of data from multiple family members



# Overview of Workshop

- Nature & Scope of Family Research (K. Knaf)l
- Analysis of Quantitative Family Data (G. Knaf)l
- Break
- Analysis of Qualitative Family Data (K. Knaf)l
- Analysis of Family Data from Mixed Methods Studies (J. Deatr)ck
- Break
- Break Out Sessions – Quantitative or Qualitative/Mixed Method





# The Nature & Scope of Family Research

“ When we reflect on the serious issues with which families must contend, it becomes clear that families are best served by researchers who tailor their methods to the diversities in which families are embedded. No one method is sufficient” (Gilgun, et al, 1992).



# The Focus of Family Nursing Research

(Feetham, 1991)

- Responses of families & family members to various states of health
- Responses of families & family members to life transitions
- Identification of predictors of family & family member health outcomes
- Theory formulation & testing related to family & family member health outcomes

# Recommendations for Family Researchers

(Feetham & Meister, 1999)

- Be conceptually & methodologically rigorous
- Focus on likely areas of family need
- Contribute to the development & testing of interventions
- Conducted in the broadest context of relevance to the family (e.g., community, health care system, policy)
- Provide guidance to institutions & agencies

# Key Questions for Family Researchers

- In this study ...
  - What do I want to learn about families
  - How am I defining family?
  - Who should I study; what data should I collect?
  - **How do I preserve my family focus in the analysis?**



# What do I want to learn about families?

- **Some likely possibilities ...**
  - How family variables influence family members' health?
  - How family roles & relationships influence members' health?
  - How the family system responds to a health challenge?

# Family Influence on Health

Research addressing the contribution of family characteristics and processes to individual outcomes:

“The study objective was to examine prospectively the relationship of coping and **family functioning** to health outcomes in adolescents with sickle cell disease” (Barakat, 2007).

# Family Roles & Relationships Related to Health Care

Nature & contribution of family roles & relationships to health-related behaviors & outcomes:

“This study focused on factors associated with family caregiver role strain and ease in life-sustaining treatment decision-making” (Hansen, 2004).

# Family System Response to Health-Related Challenge

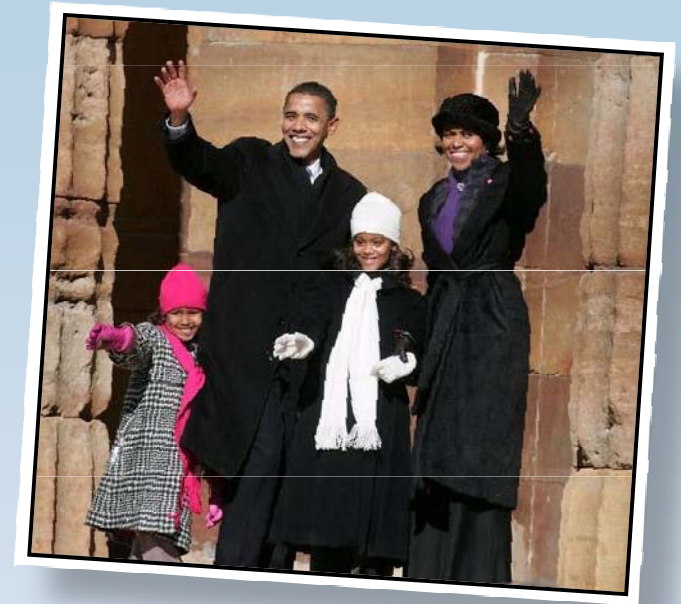
The nature of family response to illness & the contribution of different variables to that response:

“In a study of families having a child with a genetic condition, patterns of family functioning were identified through cluster analysis of families with two spouses” (Knafl, 2007).



# Defining Families – What makes them unique

- Generational relationships
- Relationships as total persons
- Long-term process orientation
- Emotional intensity
- Nurturing governance



# Defining Families – It depends who you ask ...

- Married couple without children **(75%)\***
- Married couple with a child **(99%)**
- Divorced, single woman living with child **(83%)**
- Cohabiting couple without children **(60%)**

\* Percent in survey defining each group as a family  
(n=948)

# Defining Families – It depends who you ask ...

- Cohabiting couple with children **(97%)**
- Separated couple with son **(13%)**
- Three grown siblings who live together **(50%)**
- Friends who live together with children **(38%)**

# Common Definitions of Families

- **Biological** – shared ancestry & genetic ties
- **Structural** – positions & roles such as mother & caregiver
- **Functional** - contributions to members & society such as socialization & nurturance
- **Subjective** – sense of commitment & attachment; individual perception of who is family

# Linking Definition to Study Purpose

<b>Biological</b>	Bi-directional genetic & environmental influences on mother & child behavior (Mills-Koonce, 2007)
<b>Structural</b>	Depressive symptoms in patients with ESRD & spouses (Pruchno, 2009)
<b>Functional</b>	Health status, stress, & social support in grandparents parenting grandchildren (Butler & Zakari, 2005)
<b>Subjective</b>	Grief experience of same sex couples (Glackin, 2008)

# Design Issues – Who should I study? What data should I collect?

- Sample design & criteria
- Measurement & data collection
- Complexity of family data
- Analytic issues & challenges



# Sampling Decisions & Strategies

- Based on study aims & definition of family
- Inclusion/exclusion criteria specified & justified
  - Family criteria
  - Family member criteria
- Culturally & ethnically appropriate recruitment/retention strategies

# Family Researchers Often Sample Multiple Family Members

Study	Sample Criteria	Final Sample
<p>Family functioning &amp; health outcomes in adolescents with SCD (Barakat, et al., 2007)</p>	<ul style="list-style-type: none"><li>✓ Patient 12 -18 y/o</li><li>✓ English primary language</li><li>✓ Patient &amp; primary caregiver willing to participate</li></ul>	<ul style="list-style-type: none"><li>✓ 41 adolescent patients</li><li>✓ 41 primary caregivers</li><li>✓ 9 secondary caregivers</li><li>✓ 15 healthy siblings</li><li>✓ Multiple family constellations</li></ul>



# Family Researchers Often Collect Data from Multiple Family Members

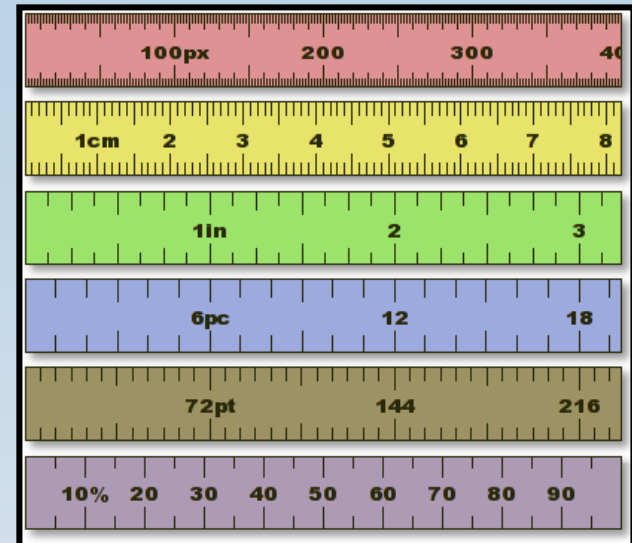
Study	Sample Criteria	Final Sample
<p>Patterns of family functioning in families with a child with a genetic condition (Knafl, et. al., 2007).</p>	<ul style="list-style-type: none"><li>✓ Child with single gene condition</li><li>✓ Child 3-15 y/o</li><li>✓ Biological offspring of at least one parent</li><li>✓ Attends regular classroom</li></ul>	<ul style="list-style-type: none"><li>✓ Sub-sample from larger study</li><li>✓ 52 of 86 families in which <b>both</b> parents participated (104 parents)</li></ul>

# Data Collection Decisions & Strategies

- Based on study aims & conceptual framework
- Often include family & non-family measures
- May use different measures of the same construct
- May combine multiple approaches (e.g. observation, interviewing)
- May be cross-sectional or longitudinal

# Resources for Family Measurement

- Alderfer, et. al, 2007
- Ganong, 2003
- Sawin & Harrigan, 1995
- Touliatos, Barry,  
& Perlmutter, 2001



# Family Researchers Generate Complex Data Sets

Study	Measures	Data
<p>Genetic &amp; environment influences on mother &amp; child behavior (Mills-Koonce, et al., 2007).</p>	<ul style="list-style-type: none"><li>▪ Observed maternal sensitivity</li><li>▪ Observed child behavior</li><li>▪ Child fear (mother)</li><li>▪ Brief Symptom Inventory (mother)</li><li>▪ Parenting Stress Index (mother)</li><li>▪ Child Behavior Checklist (mother)</li><li>▪ Buccal cell collection (mother &amp; child)</li></ul>	<ul style="list-style-type: none"><li>▪ Observation, self report, &amp; physiological data</li><li>▪ Child &amp; maternal data</li><li>▪ Data collected at three time points</li><li>▪ Mother &amp; child participated in all families</li></ul>

# Family Researchers Generate Complex Data Sets, cont.

Study	Measures	Data
<p>Family functioning &amp; health outcomes in adolescents with SCD (Barakat, et al., 2007)</p>	<ul style="list-style-type: none"><li>▪ Medical record</li><li>▪ Coping Strategies Questionnaire (adolescent)</li><li>▪ Brief Cope (caregivers)</li><li>▪ Pediatric Inventory for Parents</li><li>▪ Family Environment Scale (all family members)</li></ul>	<ul style="list-style-type: none"><li>▪ Different coping measures for parents &amp; adolescents</li><li>▪ Different family members complete Brief Cope &amp; FES</li><li>▪ Two data collection points</li><li>▪ Varied family participation</li></ul>

# Family Researchers Generate Complex Data Sets, cont.

Study	Measures	Data
<p>Decision making &amp; decision making supports needs related to extremely premature infants (Kavanaugh, et al, 2005)</p>	<ul style="list-style-type: none"><li>▪ Qualitative interviews (parents, nurses, physicians)</li><li>▪ Record review of life support decisions</li></ul>	<ul style="list-style-type: none"><li>▪ 26 interviews across six cases</li><li>▪ Not all fathers participated</li><li>▪ One–Three interviews with parents</li><li>▪ One interview with providers</li></ul>

# Family Researchers Generate Complex Data Sets, cont.

Study	Measures	Data
<p>Parental information management related to a child's genetic condition (Gallo, et al., 2005; Knafl et. al., 2007)</p>	<ul style="list-style-type: none"><li>■ Qualitative interviews (mothers &amp; fathers)</li><li>■ Family Hardiness Index, Family APGAR; Feetham Family Functioning (mothers &amp; fathers)</li></ul>	<ul style="list-style-type: none"><li>■ Qualitative &amp; quantitative data</li><li>■ Not all fathers participated</li><li>■ Single data collection point</li></ul>

# Overview of Analytic Challenges in Family Research

<b>Data</b>	<b>Example Challenge</b>
Data from multiple family members	<b>Quantitative</b> – loss of statistical independence
	<b>Qualitative</b> – developing a common coding scheme
Variable participation across family members	<b>Quantitative</b> – missing data <b>Qualitative</b> – threat to thick description
Multiple perspectives of family life & functioning	<b>Quantitative</b> – creating a family score or scale <b>Qualitative</b> – identifying a family pattern or process



# Break Time

Please return in 10 minutes





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