Burnout in Pediatric Residents: Epidemiology, Natural History, and Interventions to Improve Resilience, Empathy, and Confidence in Providing Compassionate Care

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By the End of This Session, Participants Will Be Able to:

- Describe the epidemiology of burnout in pediatric residents; and a conceptual model linking risk and protective factors for burnout and resilience
- Use validated measures of burnout and risk/protective factors for burnout and confidence in providing compassionate care
- List interventions used in a variety of pediatric residency programs
- Discuss the data and research underway evaluating the impact of different interventions
- Plan to collaborate on new projects promoting resilience
Introductions

- John D. Mahan
- Hilary McClafferty
- Kathi Kemper
- Participants
Burnout: Prevalence, Risk factors, Conceptual Models

Pediatric Residents

- High rates of depression and burnout in pediatric residents
- Depressive symptoms > 20%
- Burnout 25-70%
  - Onset early in training; increases during residency
  - Individual may phase in and out of burnout; persistent in many
  - Emotional Exhaustion > Depersonalization > Loss of Personal Accomplishment
- Multifactorial

References:
- Fahrenkopf 2008
- Landrigan 2008
- Martins 2011
- Pantaleoni 2014
- Olson 2015
Chinese Proverb [Resident Outcomes]

If we don’t change our direction, we are likely to end up where we are headed!
Burnout: One Item Burnout Index

(i) I enjoy my work. I have no symptoms of burnout.
(ii) Occasionally I am under stress, and I don’t always have as much energy as I once did, but I don’t feel burned out.
(iii) I am definitely burning out and have one or more symptoms of burnout, such as physical and emotional exhaustion.
(iv) The symptoms of burnout that I’m experiencing won’t go away. I think about frustration at work a lot.
(v) I feel completely burned out and often wonder if I can go on. I am at the point where I may need some changes or may need to seek some sort of help.

Strong correlation with MBI EE; less strong [but near significant] correlation with DP and PA

Rohland. Stress & Health 2004
Burnout: Prevalence, Natural History in Stanford Pediatric Residents

N = 61

2 classes measured over 3 years of training; 46% with Burnout at some time

Pantaleoni. Acad Med 2014
Burnout: Prevalence in Nationwide Children’s Residents

% First Year Pediatric Residents

40% had Burnout – one abnormal domain
16% had multiple abnormal domains

Olson, Kemper, Mahan JEBCAM 2015

N = 45
Burnout in Pediatric Residents: Drivers/Risk Factors

Multifactorial – Professional Issues

- expectation of unrealistic endurance
- time pressure
- excessive work hours
- difficult patients
- coping with death
- unprocessed grief
- sleep deprivation
- unsupportive work environments
Burnout in Pediatric Residents: Drivers/Risk Factors

**Personal Issues/Stressors**

- financial worries
- limited free time
- isolation
- uncertainty
- culture of silence
- lack of effective stress management skills

ACGME Work Duty Hours Requirements 2003/2011:
Increased attending physician workload
Decreased teaching time
Increased burnout
Increased job dissatisfaction.

Character traits valued in pediatricians:
compassion, altruism, and perfectionism,
also predispose to burnout in face of extreme stress.
Burnout: Why is Burnout a Problem?

Adverse Effects on Relationships with Patients/Families

- loss of empathy
- distancing
- professionalism concerns
- strong emotional responses to the care of complex patients

Eckleberry-Hunt Acad Med 2009
Burnout: Why is Burnout a Problem?

**Physician ‘Dys-Well-Being’**

- career dissatisfaction and drop out
- social isolation
- self blame for negative outcomes
- lack of attention to personal emotional needs
- inadequate personal medical care
- substance abuse
- suicide

Burnout in Pediatric Residents: Balancing Measures -- Conceptual Models

Olson, Kemper, Mahan JEBCAM 2015
**Burnout in Pediatric Residents:**

Measures for Detection

Measures for Protective Factors
[Resilience, Empathy, and Confidence in Providing Compassion]
# Measures for Pediatric Residency Project

<table>
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<tr>
<th>Construct</th>
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<th># Items</th>
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<td>Sleepiness/Fatigue</td>
<td>Epworth Sleepiness Scale</td>
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</table>
3 Specific Measures You May Want to Consider….

- **PROMIS** Physical and Mental GLOBAL HEALTH
- Mindfulness
  - **CAMS-R** vs. MAAS, Freiberg, Philadelphia, Toronto, 5-Factor Mindfulness Questionnaire
- Confidence in Calm, Compassionate Care Scale, **CCCS** (NEW!)
Patient-Reported Outcome Measures (PROMIS) 10-item GLOBAL HEALTH (P&M)

Scoring (Excellent, Very good, Good, Fair, Poor)

1. In general, would you say your health is…. 
2. In general, would you say your quality of life is…. 
3. In general, how would you rate your physical health…
4. In general, how would you rate your mental health, including your mood and your ability to think…
5. In general, how would you rate your satisfaction with your social activities and relationships?
6. In general, please rate how well you carry out your social activities and roles?
Patient-Reported Outcome Measures (PROMIS)

7. To what extent are you able to **carry out your everyday physical activities** such as walking, climbing stairs, carrying groceries, or moving a chair? (Completely, Mostly, Moderately, A little, Not at all).

In the past 7 days

8. How often have you been bothered by **emotional problems** such as feeling anxious, depressed, or irritable? (Never to always)

9. How would you rate your **fatigue** on average? (None to very severe)

10. How would you rate your **pain** on average (0, none to 10, worst imaginable)

Scoring sub-divides into Physical and Mental Global Health; normative data in thousands of Americans
Cognitive and Affective Mindfulness Scale, R

Scored 1= Rarely/not at all; 2= Sometimes; 3= Often; 4= Almost always

1. It is easy for me to concentrate on what I am doing.
2. I can tolerate emotional pain.
3. I can accept things I cannot change.
4. I can usually describe how I feel in the moment in considerable detail.
5. I am easily distracted (Reverse scored)
6. It’s easy for me to keep track of my thoughts and feelings.
7. I try to notice my thoughts without judging them.
8. I am able to accept the thoughts and feelings I have.
9. I am able to focus on the present moment.
10. I am able to pay close attention to one thing for a long period of time.
For the next 10 questions, keep track of your answers
Confidence in Compassionate Care Scale (CCCS)

In what percentage of your patient encounters do you…

1. … practice being peaceful and focused?
2. … trust your intuition?
3. … use non-drug therapies to help a patient feel better?

Scoring: 0 = 0; 10% = 1; 20% = 2; 30% = 3; 100% = 10

Plus 7 following questions…
Confidence in Compassionate Care Scale (CCCS)

How confident do you feel today (0 = not confident; 10 = very confident)

4. I can be peaceful and focused when my body is quiet and still, and it is quiet in my environment.

5. I can be peaceful and focused when my body is moving or there is noise in the background.

6. I regularly practice non-verbal, non-pharmacologic approaches to calming and reassuring patients.

7. I am confident in being calm, peaceful and focused before and during patient encounters.

8. I can extend kindness, peace, and compassion to patients.

9. I can extend kindness, peace, and compassion to colleagues.

10. I can extend kindness, peace, and compassion to myself.
Add up your CCCS Scores

- For 1-3, 10%=1, 100%=10
- For 7-10, 1-10
- Range: 0-100

- Chat with your neighbor about your score and your ideas for improving your **confidence in providing compassionate care**...
Burnout in Pediatric Residents:
Interventions for Prevention and Mitigation
Online Mind Body Skills Training (MBST) Acute Effects

- 513 dietitians, nurses, physicians, social workers, trainees, researchers who enrolled and engaged with 1 or more 1-hour modules of MB-STREAM

- Intro to Stress (N=261), Autogenic Training (n=250), Guided Imagery (N=112), Intro to Mindfulness (N=112); Mindfulness in Daily Life (N=102)

- Pre/post single module changes on self-reflection scales for
  - Stress (PSS, P<0.001)
  - Mindfulness (CAMS-R, MAAS, P<0.001)
  - Empathy (ECS, P=0.01)
  - Resilience (Smith’s BRS, P<0.01)

Kemper, Khirallah. JEBCAM 2015
Online MBST Effects over 12 weeks

- 103 who completed pre/post training online questionnaires; entering medical school; residency, graduate school in nursing, public health, social work, dietetics. Preference trial
- 63 MBST similar to 40 HDS or neither by profession, gender, PSS, CAMS-R, Resilience, compassion at baseline
- MBST engaged with median of 3 modules (bimodal)
- Significant improvements with MBST (vs. not) for
  - Stress
  - Mindfulness
  - CCCS

Kemper, Lynn, Mahan. *JEBCM* 2015
Co-PIs: Maneesh Batra, John D. Mahan

Study Steering Committee: K. Kemper, H. McClafferty, C. Schubert, J. Serwint, B. Staples, P. Wilson

Goal: To improve pediatric resident resilience, compassion, confidence in providing calm, compassionate care and wellness.
Objectives:

- Describe the *epidemiology* and *relationships* between burnout, resilience, empathy, and confidence in providing compassionate care in pediatric and medicine-pediatric (P/M-P) residents.
- Define the *natural history* of these parameters over time in P/M-P residents during training.
- Identify *modifiable factors* that increase or decrease the risk of developing burnout and promoting positive wellness factors.
- Develop and test *different interventions* (such as in-person seminars, on-line mind-body skills training, and individualized curricula such as global health electives) to affect burnout, resilience, empathy, compassion and wellness.
Pediatric Resident Burnout-Resilience Study Consortium

- Nationwide Children’s/Ohio State
- Seattle Children’s
- Duke
- John Hopkins
- Case Western/Rainbow Babies
- Children’s Mercy (Kansas)
- Cincinnati Children’s
- Cornell
- Dayton Children’s
- Montefiore/Einstein
- Lurie Children’s/Northwestern
- Mayo Clinic
- Medical College Wisconsin
- University of Minnesota
- University of Pittsburgh
- Rochester
- Chattanooga
- University of Arizona
- UCLA
- UC San Diego (Rady’s)
- UC Davis
- U Illinois
- UT TMC
- U Wisconsin
Pediatric Resident Burnout-Resilience Study Consortium
Existing Interventions – Variable Implementation

- Mind-Body Stream Individualized curriculum
- Monthly faculty led mindfulness
- Wellness committee, wellness retreat
- Debriefings after selected events, communication training
- Reflections, narratives
- Developing ‘end of life’ curriculum for resident coping skills around palliative care
- Monthly wellness discussions, seminar series
- Resident retreats

- Individualized curriculum, resident fun days
- Quarterly assessments 7 item scale (Mayo)
- Mentoring program 1:1 and learning communities
- PIMR Self Care Curriculum, mindfulness in rounding
- Resident wellness fund
- Addressing grief narrative
- Counseling, support groups
- Resident Olympics
- Wellness seminar series, yoga, tai chi, nutrition, M-B
- Protected time for preventive health (dentist)
Four 1.5 hr workshops complemented by online MBS training (12 modules); \( N = 12 \)
[Mind-Body Skills Training for Resilience, Effectiveness, and Mindfulness (STREAM) program]
1. Relaxation Response
2. Body Scan
3. Mindful Meditation
4. Heart-Centered Practices
5. Yoga
6. Ongoing Practice Suggestions

Booster dose: Monthly group meetings/activities; Access to MB STREAM modules
Pre/Post surveys (MBI, PSS, Resilience, 5 Facet Mindfulness, Self-Compassion)

**Led by 3rd yr Med-Peds resident (Laura Romcevich)**

Early Outcomes: **Course worth it!**
- Online Modules useful = 77%
- In-person training useful = 88%
- Time investment worth it = 88%

Early Outcomes: **Mind/Body Effects**
- Stress (Cohen) 19.9->15.4*  
- Resilience (BRS) 19.3->23.0*  
- Burnout (1 item) 2.7->2.3

\(* = p< 0.05\)
Pediatric Integrative Medicine in Residency

- Mind-Body Connection
- Movement & Exercise
- Growth & Spirituality
- Nutrition
- Relationships
- Sleep

Pediatric Integrative Medicine
Introduction to Integrative Medicine
- Foundations of IM
- Pediatric Integrative Medicine
- Motivational Interviewing

Self Care
- Burnout & Stress
- Mindfulness in Medicine
- Anti-inflammatory Diet
- Sleep & Exercise

Mind Body
- Integrative Mental Health
- Spirituality & Health Care
- Mind-Body Medicine in Practice

Nutrition & Physical Activity
- Nutrition Fundamentals
- Nutrition Case Studies
- Physical Activity for Children

Dietary Supplements
- Botanical Foundations
- Micronutrients and Supplements
- Vitamins and Minerals
- Common Dietary Supplements

Whole Systems
- TCM, Ayurveda, Naturopathy, Homeopathy
- Manual Medicine

Clinical Focus
- Intake & Treatment Plan, ADHD, Autism, Immunizations, Environmental Medicine, Respiratory, Dermatology
PIMR Site Map

Pediatric Integrative Medicine in Residency
PIMR National Sites

- University of Arizona (Tucson, AZ)
- University of Chicago (Chicago, IL)
- Stanford University (Stanford, CA)
- University of Kansas (Kansas City, KS)
- Eastern Virginia Medical School/CHKD (Norfolk, VA)
- University of New Mexico Pediatric Medicine (Albuquerque, NM)
- Cardinal Glennon Children’s Medical Center (St. Louis, MO)
- Vanderbilt School of Medicine (Nashville, TN)
- University of Southern California - Pediatric (Los Angeles, CA)
- Children’s Hospital of Philadelphia (Philadelphia, PA)
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<th>Measure</th>
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<td><strong>Burnout</strong></td>
<td>Maslach Burnout Inventory (MBI; Maslach et al. 1996)</td>
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<tr>
<td></td>
<td>- Emotional Exhaustion (EE)</td>
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<td></td>
<td>- Depersonalization (DP)</td>
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<td></td>
<td>- Personal Accomplishment (PA)</td>
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<td><strong>Psychological health</strong></td>
<td>Perceived Stress Scale (PSS; Cohen et al., 1983)</td>
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<tr>
<td>Perceived stress</td>
<td>Center for Epidemiological Studies - Depression (CES-D; Radloff, 1977)</td>
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<tr>
<td>Mood state distress</td>
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<td><strong>Global life satisfaction/well-being</strong></td>
<td>Satisfaction with Life Scale (SWLS; Diener, 1985)</td>
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<td>Arizona Integrative Outcome Scale for Global Well-being (AIOS; Bell et al., 2002)</td>
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<td><strong>Affective traits</strong></td>
<td>Positive &amp; Negative Affect Schedule (PANAS; Watson, 1988)</td>
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<tr>
<td><strong>Personal characteristics</strong></td>
<td>Freiburg Mindfulness Inventory (FMI; Walach et al., 2006)</td>
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<td>Mindfulness</td>
<td>Jefferson Scale of Physician Empathy (JES; Hojat et al., 2001)</td>
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<td>Empathy</td>
<td>Interpersonal Reactivity Index (IRI; Davis, 1980)</td>
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<td>Emotional intelligence</td>
<td>- Empathic Concern (IRI EC)</td>
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<td>- Perspective Taking (IRI PT)</td>
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<td>- Personal Distress (IRI PD)</td>
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<td><strong>Wellness Behaviors</strong></td>
<td>Arizona Lifestyle Inventory (ALI; Brooks et al., 2014)</td>
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PIMR Interns: Maslach Burnout

Low Risk | Moderate Risk | At Risk

Emotional Exhaustion: 90 | 40 | 34
Depersonalization: 71 | 40 | 53
Personal Accomplishment: 7 | 36 | 121

N = 164
PIMR Interns MBI
Emotional Exhaustion & Depersonalization

Emotional Exhaustion

- Low Risk: 90, 55%
- Moderate Risk: 34, 21%
- At Risk: 40, 24%

Depersonalization

- Low Risk: 71, 43%
- Moderate Risk: 53, 32%
- At Risk: 40, 25%

N = 164
Burnout risk levels are determined by risk categories on both the emotional exhaustion and depersonalization scales. Low risk = scoring in the low category on both scales, At risk = scoring in the high category on both scales, Moderate risk = the remaining category distributions combinations.
PIMR Interns: CESD - Depression Moderately & Very Depressed Combined

N = 156

- Non-depressed: 108, 69%
- Mildly depressed: 15, 10%
- Moderately & very depressed: 33, 21%
Stanford Wellness: Peds Pulmonary Division

HealthySteps
Resilience: From Being to Doing

CONGRATULATIONS
An eight week class in Self-Care

Breathing  Compassion  Mindfulness  Gratitude  Visualization  3 Good Things  Strengths  Setting Goals  Exercise

2016 Grant Award for Pediatric Pulmonary Medicine
American Academy of Pediatrics

- Special Interest Group on Physician Health and Wellness
- National Meeting Washington DC, October 2015
- Peds 21 National Conference Topic, October 2017
National Center for Integrative Primary Healthcare (NCIPH).

The Arizona Center for Integrative Medicine (AzCIM) and the Academic Consortium for Integrative Medicine & Health (The Consortium) in cooperation with the Health Resources and Services Administration (HRSA) created the National Center for Integrative Primary Healthcare (NCIPH).

1 “This project is supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) under grant number UE1HP27710, Integrative Medicine: Empowering Communities through Interprofessional Primary Care Teams for $1,699,998. This information or content and conclusions are those of the author and should not be construed as the official position or policy of, nor should any endorsements be inferred by HRSA, HHS or the U.S. Government.”
National Center for Integrative Primary Healthcare (NCIPH): Purpose & Goals

**Purpose:** Advance the incorporation of competency- and evidence based integrative health curricula and best practices into primary care education and practice.

**Goals:**
- Establish a national interprofessional leadership team.
- Develop core competencies for interprofessional primary care teams in IH.
- Develop a 45-hour interprofessional online curriculum for integrative primary care: *Foundations in Integrative Health* – pilot Jan 2016
- **New Unit on Interprofessional Clinician Self-Care**
- Develop patient education material and facilitate access to integrative health practitioners.
Commitment to Resilience

- Assess trainees
- Intervention/Training for Trainees
- Self-Care for Personal Resilience
- Other
Participant’s Experiences
Discussion Questions

- What are you doing now? How is it working?
- Are you doing a formal evaluation? If so, what? How is it funded? Do you have results?
- Do you want to collaborate?
- How can we advocate for funding nationally to address this important problem (AHRQ)?
Thank You!

- Summary
- Next steps