Biopsychosocial Approaches to Chronic Illness: The Pathways Model

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OBJECTIVES

• Explain the importance of psychosocial factors, including life stress, in the onset and course of stress-related disorders and chronic illness.

• Discuss the three-level framework of the Pathways Model, as an approach to integrate behavioral and lifestyle changes into integrated treatments which include spiritually oriented interventions and complementary medicine.

• Design evidence-based treatment plans to include breath training, heart rate variability biofeedback in patients with anxiety.

• Summarize the application of the Pathways Model, including complementary medicine therapies to chronic pain and mood disorders.
The Biopsychosocial Model and the Pathways Model

• All facets of the patients’ history, symptom experience, psychosocial factors are considered in their evaluation

• All facets: biological, social, psychological, behavioral are considered in treatment planning and long term follow up

• Treatment teams include providers from different disciplines
Leading Causes Of Death In The U.S. 2014 and related behaviors

1. Heart disease
2. Cancer
3. Chronic respiratory
4. Stroke
5. Accidents
6. Dementia
7. Flu, pneumonia
8. Diabetes mellitus
9. Kidney disease
10. Suicide

1. Unhealthy diet
2. Sedentary lifestyle
3. Poor coping
4. Smoking
5. Over use of substances
6. High risk sexual behaviors
• https://vizhub.healthdata.org/subnational/usa
Disability due to mental illness

• Lifetime prevalence – approaches 45%
• DALY is expressed as the number of years lost to ill health, disability or early death (loss of healthy years of life).

• Psychiatric and neurologic conditions account for 28% of years lived with disability, yet only 1.4% of deaths. Chronicity of illness must be considered in treatment planning.
Social determinants of health

• **Health disparities**: Gender, race, years of education, income, occupation, history of abuse or neglect, food deserts, unstable neighborhoods, food insecurity

• Increased incidence of mortality, morbidity, disability from mental and physical illness is associated with lower socioeconomic status.
Two examples

Perceived racism and blood pressure

• **Acutely**, perceived racism drives increases in BP and decreases in heart rate variability

• **Chronically**, reactions to racism are modified by coping resources, personal attributions, sense of control and social support
“Big City Blues”

• City dwellers are more likely to suffer from depression
• Noise, social pressures, close living conditions increase risk

• Disordered neighborhoods (graffiti, garbage, violence) are associated with poorer mental and physical health

**Stress increases activity in the amygdala more in city dwellers than in people living in rural areas (over reactivity).**
Mechanisms underlying comorbidity emphasizing mind body connections

• Inflammation (markers such as C-reactive protein)
• Lower heart rate variability associated with depression and cardiovascular disease
• Disrupted sleep. Sleep deprivation is linked to hormonal dysregulation: low SES families sleep less than higher SES families
• Poor nutrition impedes successful learning
• Abuse has long term sequelae for physical and mental illnesses
Behavioral mechanisms linking comorbidity and mind body connections

• Years of education increases life expectancy across gender and race

• Poverty and fewer years of education are associated with less exercise and higher prevalence of smoking.

• Depressed persons are less motivated and less adherent to treatment, which are essential to positive outcomes in cardiovascular disease and diabetes. These disorders require daily actions by patients and vigilance for change in conditions.
Summary

• Depression and anxiety are mind body spirit illnesses

• Heart disease and type 2 diabetes are mind body spirit illnesses

• Chronic pain is a mind body spirit illness
The Pathways Model Applied to Mood Disorders and Chronic Pain: Case Illustrations

Angele McGrady PhD. University of Toledo
Depression: general population and medical patients

- Major depressive disorder
- Persistent depressive disorder (dysthmia)
- Pathological grief reactions
- Adjustment disorder with disturbance of mood
- Mood disorder in medically ill or chronic pain patients
The case of Cherie – major depressive disorder

- **Presentation**: 56 year old hospital nurse with prolonged grief reaction to death of husband one year ago
- **Problems**: low mood, blunted affect, psychomotor retardation, tearfulness
- **Effects on function**: impaired workplace performance. “I can’t take care of sick people the way that I feel”. She takes a leave from work.
Cherie’s history

• **College years**: difficulty with mastering science material; good at clinical work; low mood related to lack of confidence

• **Marriage to Eric**: two children; post partum depression after each birth; return to work each time lifts mood. Cherie functions well again at work.

• **Emotional abuse** occurs in marriage; frequent conflict about finances, child rearing and Cherie’s home responsibilities. Eric threatens to hurt her physically.
Cherie’s history cont’d

• **Work setting**: change in the atmosphere at the hospital; more negativity and tension; the hospital experiences a change in admin and defends itself against a lawsuit.

• Tension builds up at **home**. Cherie talks about leaving the hospital and Eric is furious at the possible effects on their finances.

• Eric is diagnosed with cancer and the prognosis is not good. Cherie takes a leave from work; he passes 6 months after diagnosis.

• **Effects on mood**: Cherie is very depressed, unmotivated for work, or social activities; says she misses Eric very much.
Pathways intervention plan

Level One and Level Three slow breathing coupled with HRV biofeedback and interpersonal therapy

Cherie’s response: fascinated with the biofeedback, practices the breathing exercise. HRV feedback gives Cherie a sense of control.

Therapy reveals that Cherie had decided to leave Eric because of the abuse; then he received the diagnosis of cancer.

“I wanted out but I couldn’t leave him to die alone”. The kids were so upset that their dad was sick.” She felt trapped and closed in.

Her thoughts that she was glad that he was dead further guilt-tripped her. At the same time she was angry that she had not left him when she could.

Cherie said: “I am a horrible person and maybe I am better off dead”
Psychotherapy continued

More frequent sessions: psychodynamic therapy decreases the guilt and resolves the conflict

“Cancer killed Eric, I did not kill him. He was a good father, but was not a good husband. He was not kind when I was depressed. Despite this, I took care of him during his last weeks of life”.

Angele McGrady PhD
Level 2 – spiritual support

• Cherie sought the support of her minister, describing her closed in feelings. He recommended the grief support group but she felt uncomfortable as the participants talked about their losses.

• The instructional/discernment group shared by practicing Christians and those thinking to become Christians was a better fit for Cherie.

• She felt more open to growing her spiritual life and using her faith and the people that she met as sources of support.

Angele McGrady PhD
Level 3: add acupuncture

• Psychotherapy continued for 14 months. Cherie recognized her conflicts between her loyalty to Eric and her wishes to leave. Her guilt about being happy that he was dead decreased, as she realized that it was acceptable to feel that her burden had lifted.

• Cherie also was treated by an acupuncturist. She described that series of sessions as a perfect complement to the Pathways intervention. Acupuncture “opened up my energy to flow normally”.

Angele McGrady PhD
Outcome

Cherie initially presented with a prolonged grief reaction. Careful evaluation revealed an underlying recurrent major depressive disorder.

Pathways treatment consisted of Levels One, Two and Three. Patient initiated interventions comprised spiritual support and acupuncture. The challenges were Cherie’s feelings of guilt, trapped and closed in.

Cherie terminated treatment when mood was consistently euthymic. She returned to work in a different setting. At last contact she was functioning very well.

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The Pathways Model in Chronic Pain

• Most instances of acute pain resolve within days, weeks or months with standard treatment.

• In contrast acute pain can transform into chronic enduring pain which becomes much harder to manage and produces disability.

• The neurophysiological mechanisms responsible for the transformation involve changes in peripheral and central neuronal function in addition to emotional and behavioral factors.
The Case of Doreen

• 35 year old college teacher with intractable migraine: 14 per month and daily milder headaches with medical management

• Threatened with loss of job due to absenteeism

• History of abuse from brother’s friend (sexual) and dance teacher (emotional – criticism and belittling)

• Divorced from husband – he wanted “normal things”. Criticism from parents – “why can’t you keep a good man like Jerodd happy?”
Pathways Model in the Case of Doreen

• **Level One**: mindful breathing, movement, educate about transformed pain
  • Response: Acceptance of breathing exercise; resists walking

• **Level Two**: progressive muscle relaxation, exercise, assertive communication
  • Fears increasing tension; reluctant to try assertiveness

• **Level Three**: biofeedback, psychotherapy
  • Accepts thermal, HRV and sEMG feedback.
  • Progress in hand warming, slowing breaths, reducing tension
  • Headaches slowly decrease

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Level 3 cont’d

• **Psychodynamic therapy** meets with great resistance. Memories of the abuse resurface and result in suicidal ideation and intent
  - Suicide prevention plan is implemented
  - Support from friends is elicited

• Slowly, trauma focused therapy reduces the anguish of the traumatic memories; emphasis is placed on Doreen reclaiming her life. Headaches continue to decrease.
Outcome

• Treatment length - three years
• Medications adjusted and maintained
• Daily mild headaches decreased to 3 per week
• Frequency of severe headaches requiring sumatriptan decreased from 3-4 per week to 2 per month
• Year 2 of treatment does not miss a single day of work

• Mood improved; no thoughts of suicide
The case of Michael – chronic back pain

- 43 year old married mortgage banker. Height: 6’2”; weight 170
- Three daughters – all active in sports
- Onset of pain is after a fall in college; pain resolves
- Later pain returns gradually increases in frequency and intensity.
- Michael’s job is entirely sedentary. His posture is slumped.
  His eating and sleep habits are not healthy
  “I am looking for simple biofeedback”
Pathways Intervention

• **Level One**: breathing, correction of slumped posture, adjustment of eating schedule to improve sleep

• **Response**: works on posture but resists suggestions of change; reports no improvement in pain

• Life coach mentions ergonomic evaluation for the office and his boss accepts the suggestion; posture improves; pain lessens
Level Two: progressive muscle relaxation

Michael’s response: reluctance at first, then acceptance and commitment to practice the exercise. Some decrease in pain
Level Three

- sEMG biofeedback combined with progressive relaxation

- HRV biofeedback combined with mindful breathing

- Michael’s response: Practice recommendations not followed; back pain sometimes severe; but over all improved
- Psychotherapy recommended.
Level three: psychodynamic psychotherapy

• Therapist identifies key words:
  *on my back, bent over, carry the kids.*

• Michael reveals that his wife suffers from severe chronic depression, which at times limits her function at home and at her part time job. He does it all.

• Michael reacts negatively to exploration into his relationship with wife. Any perceived criticism of Julianne is immediately countered. “Her depression is “biological” and therefore it is her state in life”.
Michael drops out of treatment

• Weeks later, Michael comes in with severe back pain.
• He reveals that he is very active outside of work, plays basketball and softball all year. “You will want me to give this up and I can’t do it. These are my friends from high school”. You are negative about my wife and want me to leave her”.

• He requests the name of the sports medicine program and discontinues Pathways.
Redesign of the treatment plan

• Six months later Michael returns. Sports medicine recommends coming back to therapy to resolve emotional issues. CBT is initiated and Michael responds better to this intervention.

• Biofeedback is emphasized as a method that works well with sports medicine so relaxation and biofeedback are resumed.

• Marriage therapy is offered
Marriage therapy: one session

• Daughters love both of their parents and are willing to make changes to decrease some of their father’s responsibilities.
• The daughters take on more tasks; Michael can stay at the office longer and his boss notices.
• Michael returns for follow up six months later.
• He has implemented the pre- exercise and post exercise routines learned from sports medicine. He practices relaxation and mindfulness daily. He describes Julianne as “amazing” because she has been preparing one or two meals a week.
Outcome

• Michael says: “I guess I did not have simple back pain”.

• A multi component intervention plan was necessary, including a life coach, sports medicine therapist, psychologist, biofeedback therapist and marriage therapist.

• Positive outcome required recognizing resistance, getting Michael to be honest about his activity, discerning emotional conflict, but not pursuing drastic change in the relationship.

• One year later, Michael reports mild back pain on most days; some days are pain free; severe pain occurs about once a month.
The Pathways Model

Special Applications

Conclusion

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Pathways in Intensive Outpatient Settings

- **Typical schedule**: two hours 3 days a week for 6 weeks
- **Typical patients**: severe depression, complicated grief reaction, chronic pain, substance abuse

- **Application of Pathways**: the group process provides support for change; participants may work on different Level One strategies
- Personal biofeedback devices can be used to build skills in Level Two
- Level Three: Mindfulness based stress reduction and group therapy

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Patients with Medically Unexplained Symptoms

• **Level One**: very important to re-establish normal rhythms

• **Level Two**: skill building gives patients a greater sense of control
  Mindfulness: BE in the moment; enjoy the times without symptoms

• **Level Three**: cooperate with other providers; be flexible in choice of psychotherapy; consider complementary therapies
Pathways in Telemedicine

• **Typical patients:** long distance to travel to the clinic, chronic pain, no transportation; severe anxiety; PTSD

• **Level One:** Use online materials – fact sheets and worksheets
  • Assess adherence by patient log in

• **Level Two:** Provide hand held biofeedback devices, relaxation apps
  • Assess adherence and request data
  • At least bi monthly check ups to review skills in real time

• **Level Three:** real time therapy; observe the patient at rest and ambulating
  • CBT and homework
Conclusion

• The Pathways Model and the Biopsychosocial Model

• Case examples: anxiety, mood disorder, chronic pain are mind body spirit illnesses.

• Pathways is flexible as demonstrated by the examples provided and by the special applications to settings, types of clients and telemedicine
Thank you for your participation

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Introducing the Pathways Model

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The Pathways Model for Integrative Care
Developed by McGrady and Moss (2013, 2018)

• Pathways Principle: The Pathways model addresses the continuum of health and disease, and the role of health risk behaviors and well behaviors in shaping the individual’s overall health.
• The Pathways model assesses where the individual is currently on the continuum, and identifies current levels of health, insufficiency, deficiency, or disease.
The John W. Travis

Illness-Wellness Continuum

Pre-Mature Death

Disability  Symptoms  Signs

Treatment Paradigm

Wellness Paradigm

Awareness  Education  Growth

Neutral Point
(No discernable illness or wellness)

High-Level Wellness
Pathways Model for Integrative Care
Developed by McGrady and Moss (2013, 2018)

- Combining interventions at three levels to actively engage patients in their own care.
  - Level One includes self-directed behavior/lifestyle changes, such as increased activity, enhanced sleep, and self-guided nutritional changes.
  - Level One interventions restore basic biological rhythms
  - Examples: increased physical activity, self-guided dietary change, and sleep hygiene changes
Pathways Model for Integrative Care
Developed by McGrady and Moss (2013, 2018)

- Level Two includes acquisition of adaptive coping skills, with assistance of educational resources and community based supports.
- Examples of Level Two: Learning mindfulness skills, Progressive Muscle Relaxation, Autogenic Training, or hatha yoga using an educational CD or with guidance of community-based class.
Pathways Model for Integrative Care
Developed by McGrady and Moss (2013, 2018)

- Level Three includes use of professionally delivered evidence-based treatments
- Level Three interventions include biofeedback, neurofeedback, hypnosis, psychotherapy, medical care, medication, acupuncture, spiritual counseling, nutritional counseling, and therapeutic massage
Pathways Model May Apply A Single Skill Area Across Levels

• Level One: A patient may undertake mindful breathing after simple in-office demonstration
• Level Two: The patient may undertake Mindfulness Training and Mindfulness Meditation using a Jon Kabat-Zinn CD or a community-based class.
• Level Three: The patient may receive MBSR or mindfulness-based ACT psychotherapy, provided by a trained therapist.
Personalizing the Pathway: A Coaching Process

• The Pathways Model operates through a collaborative “alliance for health”
• The patient and the counselor/wellness coach identify the patients’ needs through a dialogal assessment process
• In dialogue, the patient sets personal goals for change at each level
• Follow through is optimal when the patient autonomously sets goals
• The coaching process matches the level and type of intervention to the person’s goals, needs, motivation, and resources
Stages of Change Model: Prochaska

- Pre-contemplation - not motivated
- Contemplation – open to information, but delays starting
- Preparation/Determination – ready to adopt change
- Action – doing it
- Relapse
- Maintenance - routine
Level One Interventions in Pathways Model

- Mindful breathing – learning effortless, mindful diaphragmatic breathing
- Nutrition and feeding behavior – learning to make healthy nutritional choices and to eat with attention, mindfully
- Sleep and rest – targeting any maladaptive sleep habits, and restoring a healthy sleep cycle. Introducing sleep hygiene
- Simple movement – walking short distances, moving with music
Level 1 Intervention: Example -- Nutrition

- Mindful eating
- Eating as source of energy
- Food as beauty
- Food as pleasure
- Food as comfort
Level 1 Intervention: Example -- Soothe

- Rocking
- Humming
- Praying
- Quieting
Level Two Interventions in Pathways Model

- **Progressive Relaxation** -- alternating tension and relaxation in specific muscle groups of the body.
- **Exercise** -- begin exercise by stretching or slow walking, then increase the distance and then the speed of the walk.
- **Meditation** – a variety of meditation practices can be mastered with educational CDs or community-based classes.
Level Two Interventions in Pathways Model (Cont.)

- Mindfulness Training -- a particular way of directing attention and focusing on what is going on in the present moment, without judgment.
- Pause: Introducing a Moment of Awareness -- the ability to pause and consider is critical in the process of regaining control over stressful situations.
Level Two Interventions in Pathways Model: Use Community Resources

- Gentle Yoga Classes
- Tai Chi
- Qi Gong
- Aquatherapy
Level 3 Interventions

- Applied Psychophysiology: Biofeedback and Relaxation Therapies
- Neurofeedback
- Clinical Hypnosis
- Physical Therapy and Rehabilitation
- Psychotherapy
- Guided Imagery
- Medical Management: Strategic Pharmacology
Integrative Practices: The Pathways Model Draws on CAM Therapies and Spiritually Based Practices

• CAM Therapies
  – Acupuncture and Acupressure
  – Energy Medicine – Reiki and Therapeutic Touch
  – Functional Medicine/Functional Nutrition
  – Somatics: Bodywork
    • Feldenkrais Method and Hannah Somatics
  – Therapeutic Massage
  – Homeopathy and Naturopathy
Integrative Practices: The Pathways Model Draws on CAM Therapies and Spiritually Based Practices

- Spiritually-Based Practices
  - Prayer
  - Healing prayer and healing prayer circles
  - Study of sacred scriptures (east and west)
  - Spiritual imagery
  - Meditation strategies
  - Pastoral counseling
  - Spiritual retreats
“My House is Crashing Down on Me:” A Pathways Approach to Anxiety Disorders

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- The case narrative is based on a chapter in the McGrady and Moss (2018) volume.
Anxiety Disorders
Normal Life Experience vs. a Disorder

- Anxiety is a normal dimension of human existence
- Anxiety, fear, and worry are healthy responses to major life transitions/threatening situations
- Anxiety becomes disorder when persistent (generally $\geq$ six months in duration), and when it impairs everyday life functioning
Anxiety Disorders

The Varieties of Anxious Experiencing

- The anxiety disorders in DSM-V include:
  - Panic Disorder,
  - Agoraphobia,
  - Specific Phobia,
  - Generalized Anxiety Disorder,
  - Social Anxiety Disorder,
  - Separation Anxiety Disorder, and
  - Selective Mutism.
Prevalence and Costs of Anxiety Disorders

- Anxiety disorders are the most common mental disorder in the US and Europe
  - Anxiety disorders affect approximately 40 million adults in US, or 18.1% of US population (ADAA, 2018)
  - The estimated lifetime prevalence is about 28% to 33.7%, depending on study
    - Based on the National Co-morbidity Survey Replication (Kessler, Berglund, Demler, Jim, & Walters, 2005)
    - European Study of the Epidemiology of Anxiety Disorders (Alonso et al., 2007)
The Costs of Anxiety

- Individuals with anxiety disorders utilize more medical visits and laboratory services, miss more work-days, and cost more in short term disability and workers compensation payments (Marciniak, et al., 2004).
- The annual direct medical expenditures attributable to anxiety disorders, for the U.S. ambulatory adult population, is approximately $33.71 billion in 2013 US dollars.
- The 2013 societal cost of anxiety disorders was estimated at $48.72 billion (Shirneshan, 2013)
The Natural Course of Anxiety Disorders

- Anxiety disorders typically follow a chronic pattern, and a remitting and relapsing pattern.
- The media age of onset for anxiety disorders – age 11 -- is earlier than for mood disorders or substance disorders (Kessler et al.)
- There is a natural decrease in prevalence rates with older age (Bandelow & Michaelis, 2015)
Genetics and the Anxiety Disorders

• Anxiety disorders differ in heritability
  – Panic attacks 5 xs more concordant in monozygotic than dizygotic twins
    • Panic disorder in 17 % of first degree relatives of a patient with panic, 1.8 % of first degree relatives of non-panic patients
  – Frequency of GAD in relatives of GAD probands is 30.1 %
    • Family members of GAD patients are at higher risk for GAD, but not other anxiety disorders
  – The rate of social phobia is three times higher in families of social phobics, than general population
  – PTSD shows low heritability, with onset following trauma
Case Narrative

Application of Pathways Model to Anxiety Disorders
Case Narrative

Introducing Judy

“Judy” was a 71-year-old retired social worker, and wife of a retired dentist with debilitating Alzheimer's disease.

- She was a mother of four adult children and grandmother of six.
- She experienced anxiety episodes intermittently from college years through present.
- She completed several episodes of counseling for anxiety, and thought her coping skills should be more effective now.
Psychosocial Background

• Judy grew up in professional family, with a physician mother and an attorney father, who was amateur cellist.
• She was gifted child academically and musically, aspired in adolescence to career as concert pianist.
• She attended a private liberal arts college, and was encouraged in musical aspirations by faculty.
Initial Episode of Anxiety Disorder

• In Fall of her sophomore year, her father died suddenly of a heart attack.

• She flew home for funeral and during turbulence developed panic attack with fears of plane crashing.

• She experienced intermittent panic in following weeks about father's absence from her life, yet completed Fall courses.
“The House is Crashing Down on Me”

- At Christmas, her mother asked her to leave her studies at the private college, due to family finances.
- She began shaking physically during this conversation, and experienced worst panic attack yet, with rapid breathing, rapid heart rate, and physical sense of “the house crashing down on her body.”
Initial Treatment with CBT

• The family physician steered her to a female psychotherapist who used CBT to help her manage the panic episodes.
• Judy used self-talk and systematic desensitization, facing and coping with progressively more frightening situations.
• Judy was impressed with her psychologist's compassion and skill, and re-directed her career aspirations toward social work and counseling.
Education and Career

• Judy earned a bachelor's degree in music at nearby state college, but added sociology and psychology courses.
• She earned an MSW, and joined a nearby group practice.
• She married her husband David while he was in dental school.
Recurrent GAD and Panic

• Judy experienced intermittent anxiety and worry through graduate school and the years of young adulthood.
• She suffered panic episodes when youngest daughter (youngest child) left for college.
• She worked again with female psychotherapist and used cognitive strategies to manage anxiety.
Judy continued social work practice until she was 68.

Her spouse’s occasional forgetfulness progressed to frightening and pervasive cognitive decline, with diagnosis of Alzheimer’s disorder.

She closed her practice and dedicated herself more and more fully to caregiving.
Recurrent Panic

- Two weeks after Judy's 71st birthday, she saw David staring blankly at her and realized he did not recognize her.
- She experienced her heart racing, felt terribly alone, and felt herself back in the moments after her father’s death.
- She felt as if “the house was crashing down on her.”
- As her spouse deteriorated in coming months, her panic episodes became more frequent and severe.
Referral for Pathways Treatment

• Judy’s daughter and physician insisted she accept help for herself.
• She felt shame as a professional therapist, not able to master her own symptoms.
• Her physician referred her to mental health professionals, who provided an integrative Pathways Model program of behavioral and life-style change
Pathways Assessment

• She met DSM-V criteria for Panic Disorder with Agoraphobia.
  – She reported severe episodes at least twice weekly of overwhelming experience of anxiety, with attacks persisting over six months.
  – She reported racing and pounding heart beat, rapid and shallow breathing, facial flushing, and profuse sweating.
  – She experienced fears of her life crashing in on her, of being alone in the world, and of dying.
Agoraphobia and Psychometric Data

• Increasingly stayed home, avoided public places.
  – Rationalized she was needed as caregiver at home, yet acknowledged fears of having an anxiety attack in public.

• On Beck Depression Inventory scored 23, moderate depression.

• Beck Anxiety Inventory scored 38, severe anxiety.
Psychophysiology and Genetics

• Ten-minute sample of heart rate variability:
  – Respiration rate 21 BPM, in the hyperventilation range.
  – SDNN (a statistical index of heart rate variability) was 39, indicating compromised HRV and lowered resilience.

• Family history suggested genetic predisposition to anxiety disorders.
  – Her mother suffered lifelong anxiety disorder, requiring long-term and recurrent treatment.
Pathways Intervention Plan
Impediments to Change

• Judy expressed enthusiasm at making lifestyle changes
  – Yet broke down in tears at burden of caregiving
  – It seemed impossible to leave the spouse alone in the house, or to go into the next room for exercise or self-care.

• With great reluctance she agreed to trial of two afternoons of respite care weekly, allowing her to commence personal care.
Pathways Model Treatment

Level One

Level One Activities: Mindful Breathing

- Mindful, paced diaphragmatic breathing is a useful skill in managing anxiety symptoms
- Judy recognized rapid shallow breathing as part of her anxiety experience, and set mindful breathing as her first Level One activity
Pathways Model Treatment
Level One

- She practiced the mechanics of mindful, paced breathing with her therapist
  - Monitored breathing with one hand on chest, one on abdomen, to follow process of breathing.
- She learned to breathe in through nostrils and out through »pursed lips»
- She learned to breathe mindfully, with full awareness, and slowly, often assisted by smart phone app, Breathing Zone
Pathways Model Treatment
Level One

• Level One Activities: Nutrition

  – She was knowledgeable about meal planning, the use of fresh market ingredients, and advantages of high fiber, low fat diet with garden vegetables and fruit

  – Under stress of caregiving, she had slipped into reliance on pre-packaged meals with high sodium content
Pathways Model Treatment
Level One

• Level One Activities: Nutrition
  – She set the goal to return to a farmers’ market and resume preparing two to four healthy dinners each week
  – With encouragement of physician and therapist, she also agreed to try the senior lunch « meals on wheels » program for three days a week
Level One activity: Sleep hygiene

- Her anxiety about the husband's occasional nocturnal wandering severely disrupted her sleep.
- On one occasion she found him wandering three blocks from home.
- She purchased a motion sensor alarm for the hallway, and the electronic chime served to wake her whenever he moved outside master bedroom area.
Pathways Model Treatment

Level One

- Level One activity: Sleep
  - She also committed to using mindful breathing at bedtime to ease sleep onset and in the night to assist her to resume sleep
Pathways Model Treatment
Level One Progress

- Breathing: She reported a calming and inward absorption each time she practiced the mindful breathing
  - By the three-week point, she was breathing at six breaths per minute, for 20 to 30 min./day
  - In many cases physical symptoms of anxiety moderated from severe to mild with ten minutes of mindful breathing
Pathways Model Treatment

Level One Progress

- She included her spouse in her breathing sessions, sitting quietly with him, breathing audibly, and stroking his arm with each breath
  - This process often calmed him when he was agitated
- Nutrition: Initially the senior meals were the most successful part of her Level One goals
  - She set up a six-day meal delivery, with a luncheon meal for herself when David was in respite
Pathways Model Treatment
Level One Progress

- Nutrition:
  - She supplemented the delivered meals with salads and fruit from the farmer’s market.
  - The presence of respite care gave her some precious free time to review new recipes and resume cooking herself.
  - She regained eight pounds in the ten weeks she spent on Level One.
Pathways Model Treatment
Level One Progress

- **Sleep:**
  - The use of the motion sensor greatly reduced her nighttime anxiety and enabled deeper sleep
  - Using mindful breathing aided sleep onset, reduced sleep latency
  - She also found that if she could not return to sleep, it was helpful to get up and play her keyboard with a headset for 20 minutes, after which she could usually resume sleep
Pathways Model Treatment

Level Two

- Level Two activity: Mindfulness training and mindful meditation
  - She came to appreciate the way that mindful breathing slowed her mind and relaxed her body
  - She asked for more mindfulness skills
  - She read Jon Kabat-Zinn’s *Full Catastrophe Living*
  - She began listening three times a week to audio-CD programs on mindfulness awareness and mindfulness meditation
Level Two activity: Emotional journaling

- She had found that keeping a journal soothed her in college years.
- She agreed to begin an emotional journal following the format described by James Pennebaker in his recent workbook, *Expressive Writing, Words that Heal*. 
Pathways Model Treatment
Level Two

- Journaling

Dr. Pennebaker's Basic Writing Assignment

Over the next four days, write about your deepest emotions and thoughts about the emotional upheaval that has been influencing your life the most. In your writing, really let go and explore the event and how it has affected you. You might tie this experience to your childhood, your relationship with your parents, people you have loved or love now, or even your career. Write continuously for 20 minutes.
Pathways Model Treatment
Level Two

- Level Two Activities: Pastoral Care
  - Judy reported troubling guilt feelings at sending her spouse away from the home for respite care
  - She was able to joke about Lutheran guilt, yet ruminated on guilt and the sin of selfishness
  - She decided that one of her Level Two activities would be weekly pastoral sessions with her senior pastor, a biblical scholar who seemed to convey acceptance
Pathways Model Treatment
Level Two: Progress

- Mindfulness: Judy embraced a mindful awareness toward her life and anxieties.
  - She set goals each morning, about situations that she wished to approach mindfully
  - She began to meditate for the first time in her life, on days when her spouse was in respite care
  - The combination of mindful coping and frequent meditation increased her sense of calm in daily life, even when her husband had a disturbing day
Pathways Model Treatment
Level Two: Progress

- Journaling: The journaling absorbed her strongly, and she began journaling daily.
  - Initially she journaled about fears for her spouse’s future and her own
  - Then journaling led her to greater awareness of parallels between her life after her father’s death and the time since David’s decline
Pathways Model Treatment
Level Two: Progress

- Journaling:
  - Remembering her new beginnings and new directions after the father’s death emboldened her now.
  - She remembered and began to use a phrase she had frequently used as a therapist, «I have this one, I have it,» indicating confidence and mastery.
Pathways Model Treatment
Level Two: Progress

- Pastoral care: Her initial pastoral care sessions were as intense with grieving as her initial journaling
  - She grieved her loss of David as a companion
  - She expressed her sense of burden and duty to be a good caregiver
  - She read Psalms with the pastor, and the words of Psalm 88 stayed with her
Psalm 88:1-4

I am overwhelmed with troubles and my life draws near to death. I am counted among those who go down to the pit; I am like one without strength...
I call to you, LORD, every day; I spread out my hands to you.
Pathways Model Treatment
Level Two: Progress

- Her pastor encouraged her to use her new mindfulness skills to encounter moments of grieving and guilt.
- She found herself accepting the sense of loss more fully, and experiencing guilt and regret with less judgment and more peace.
After six weeks of her Level Two activities, David fell in the bathtub, while she helped him bathe, fracturing the right femur.

- Given an analgesic he exhibited more confusion.
- Eventually he was placed in restraints and transferred to an extended care rehab setting.
- She continued her mindfulness exercises and journalling, as well as paced breathing, but suspended her sessions.
Pathways Model Treatment
Level Three

- After David was eventually placed in an Alzheimer’s unit, she expressed again that she "had this," that is, that she was able to face and manage her transitions.
- She asked to move into Level Three activities, and specifically asked for a counseling component to reach deeper acceptance of losses.
Pathways Model Treatment
Level Three

- Level Three activity: Heart rate variability (HRV) biofeedback.
  - She decided to begin Level Three activities with HRV training, because of its benefits for anxiety.
  - She spent a session watching a biofeedback display -- a multiple line graph showing breathing and fluctuations in heart rate
  - She learned to further smooth her breathing producing a corresponding smoothing in HR
Pathways Model Treatment

Level Three

- HRV biofeedback.
  - She was guided to call to mind her grief, and watched the disruption of her smooth respiratory and HR line graphs, then used mindful breathing to restore the smooth oscillations in the line graph.
  - A Resonance Frequency (RF) assessment showed her RF to be seven breaths/minute.
  - She agreed to practice breathing at this RF twice daily for 20 minutes, guided by a breath pacer.
Level Three activity: Acceptance and Commitment (ACT) Therapy

Judy read about various forms of psychotherapy, and ultimately asked for a referral to an ACT therapist, because it would build on the base of mindfulness skills she was already practicing.

Through ACT, patients learn to “just notice,” accept, and even embrace their moment to moment experiences, especially those they have previously combatted.
Pathways Model Treatment
Level Two (Continued)

- Meditation: Judy continued meditation practice during David's treatment, rehabilitation, and long-term placement.
  - She experienced a recurring image of a circle, first a geometric circle and then a circular path.
  - She explained that her father's death had taken her away from her original dream of music career, and now David's decline was calling her back to music
Pathways Model Treatment
Level Three

- Level Three activity: Master class in piano
  - Judy decided that the mind-body/therapeutic aspects of her Pathways treatment were sufficient, and chose musical instruction as her final Level Three intervention.
  - She announced that she was taking two weeks away, for a piano master class in Germany
  - Her oldest daughter agreed to stay at Judy's home and visit her father several times a week, while Judy immersed herself in music.
Pathways Model Treatment
Level Three Progress

- HRV Training:
  - Judy was able to produce smooth, synchronized oscillations of heart rate and respiration consistently after five sessions of training
  - She continued to practice RF breathing with the pacer set at 7 breaths per minute
  - After her spouse suffered another fall in her sixth week of HRV training, she was overwhelmed with sadness and anxiety
Pathways Model Treatment
Level Three Progress

- HRV (cont):
  - By the 8th week of training, she again produced high level
    HRV with over 90% of her HRV in the low frequency
    target range
  - She described the effects of the HRV training as
    strengthening her management of anxiety and negative
    emotion
  - She shifted her motto from “I have this” to “bring it on”
  - She declared herself the “Dirty Harry” of anxiety
    management
Pathways Model Treatment
Level Three Progress

- ACT Therapy:
  - She reported that acceptance of events and acceptance of her thoughts was producing an ability to experience her life in slow motion.
  - She embraced the ACT model as more suited to herself professionally than her past efforts to dispute or restructure anxious thoughts.
  - She decided to seek out additional training as an ACT therapist.
Pathways Model Treatment
Level Three Progress

- Piano Master Class: After her HRV and ACT treatments were complete, Judy left for a two-week piano class in Germany.
  - She enrolled in classical and improvisational piano, and extended her stay to participate in an improvisational music festival
  - Upon return from the piano class, she declared her Pathways treatment complete, but agreed to participate in a final assessment
Objective Markers:
- Beck Depression Inventory -- 14 -- indicating mild depression.
- Beck Anxiety Inventory -- 9 -- indicating minimal, normal range anxiety.
- Her final psychophysiological baseline showed an SDNN of 88, indicating higher health/resilience and basal breathing rate of 12 breaths per minute.
Life Decisions:

- She decided to sell the family home, and purchase a condominium near several friends.
- She looked forward to walking away from the house that was “crashing down on her”.
- She persuaded the rehabilitation system where her husband was placed to take her on 15 hours/week as a medical social worker/music therapist.
Pathways Model Treatment
Final Post-Treatment Assessment

- Life Decisions:
  - She intended to blend breath training, meditation, and piano in group sessions, and in patient rooms.
  - She was excited at the image of becoming an iterant performer around the rehabilitation system.
Pathways Model Treatment

Perspective

- Anxiety disorders are chronic relapsing and remitting conditions
- Judy was re-assured that it would be normal for anxiety to recur in some future time of loss, stress, or ill health, but also that the self-care skills she was practicing would serve her well in any recurrence
Judy’s story is a reminder that life transformation is not confined within the services of mental health profession.

- Educational pursuits, volunteer service, and expressive arts activities all frequently impart powerful life-transformative effects
- Both her master piano class and her new volunteer work played vital roles in personal renewal