INNOVATIVE CLINICAL APPROACHES
Treating Mental Health Crises with Biofeedback

Yousef Turshani MD
Chief Medical Officer
OUR VISION & MISSION

Every patient will live their healthiest life.

We partner with our community to provide excellent healthcare for patients, including those experiencing social, environmental, or economic challenges.
WE ARE THE SAFETY NET

• The only public hospital and clinic system in San Mateo County (some counties don’t have public hospitals)
• We are a small community hospital with a large ambulatory system
• Most patients have health coverage through the County, state, or federal government
MEDICAL HOME FOR 61,000 PATIENTS

21 CLINICS
7 LOCATIONS
Call first to check vaccine availability.

Daly City Health Center
Daly City Youth Health Center
South San Francisco Clinic
Coastside Clinic
San Mateo Clinics
Sequoia Teen Wellness Center
Fair Oaks Health Center
Ethnicity refers to how society groups people based on a shared heritage.
We provide care in the preferred language of each patient.
DEPARTMENT OF PSYCHIATRY

• Psychiatric Emergency Services
• Acute Inpatient Services
• Consult Liaison Services
• Integrated Behavioral Health (IBH)
INTEGRATED BEHAVIORAL HEALTH

• Provides integrated medical and behavioral care in the primary care setting.

• Promotes access, equitable treatment, and whole-person care

• Reduces stigma associated with mental health treatment
MEET MARIA

- 42 years old from Michoacan, Mexico
- History of severe trauma
- 3 – 4 visits to Emergency Room every year for 7 years with high blood pressure and headaches
- Reported neck and shoulder pain, chest tightness, feeling tired, and other physical symptoms known to be stress-related
- Primary care provider referred to IBH for evaluation
- Maria declined mental health treatment due to the belief that her problems were medical and "therapy is for crazy people.”
MENTAL ILLNESS STIGMA
- Higher among racial/ethnic minorities
- Major barrier to accessing treatment
- Cultural, linguistic, literacy factors
- Underuse of mental health services

STRESS / TRAUMA
- One of the top ten determinants of health disparity
- Can directly affect biological processes that lead to disease
- High stress burden in racial/ethnic groups from trauma
- Lack of resources & other structural barrier

Unique challenges to racial/ethnic minority patients like Maria

HEALTH DISPARITIES
- Well documented among racial/ethnic groups
- Many chronic illnesses have been clearly linked to high levels of stress
- Stress-related chronic diseases common
Vicious Cycle of Stress Related Health Problems

- Untreated Stress/Trauma
- Worsening of Chronic Health Conditions
- Underutilization of Mental Health Services
- Mental Health Stigma
How can we provide culturally-congruent treatment that also addresses stress-related mental and physical health issues?
BIOFEEDBACK

Evidence based treatment using specialized equipment to train people on how to recover from stress and stress-related medical conditions

When you are stressed
- Heart & breathing rates increase
- Muscles tighten
- Blood pressure increases

Biofeedback trains you to
- Slow heart and breathing rates
- Relax muscles
- Lower blood pressure
BIOFEEDBACK APPLICATIONS

- Anxiety / Stress
- Headaches / Chronic Pain
- Depression / PTSD
- Stress-Related Medical Conditions
  - Diabetes
  - Hypertension
  - Irritable Bowel Syndrome
Sensors-transducers measure the patient's physiological status.

Audio - Visual Stimulation Screen Display

Audio - Visual Feedback

Measured Signal From Sensor - Transducer

Signal Processing
BIOFEEDBACK TECHNIQUES

- Muscle Relaxation
- Diaphragmatic Breathing
- Mindfulness
- Established Relaxation Strategies
- Self- Compassion
SELF REPORTED IMPROVEMENTS

- Anxiety Frequency/Intensity: 84%
- Pain/Headache/Migraine Frequency/Intensity: 79%
- Depression (PHQ9): 54%
- PTSD (PCL): 62%
CHRONIC DISEASE MANAGEMENT
Home-monitoring, pre and post biofeedback treatment

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<thead>
<tr>
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<th>Pre treatment</th>
<th>Post treatment</th>
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<tr>
<td>AVERAGE SYSTOLIC BLOOD</td>
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<td>GLUCOSE (MG/DL)</td>
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MARIA’S EXPERIENCE

• From 3 - 4 Emergency Room visits each year to zero visits this past year

• Significantly better managed
  • Post traumatic stress
  • Headache
  • Blood pressure
“I’ve learned what stress is, how to manage it, and how to deal with the trauma that was causing so many problems.”
- Maria

“She looks like a different, greatly improved woman. Her somatic complaints have improved about 70% without medications!”
- Maria’s doctor
INNOVATIVE AND UNIQUE

• Highly specialized, evidenced-based treatment not normally available to minorities
• Culturally tailored to address systemic barriers to accessing mental health services
• Services integrated into our Primary Care settings
• Treatment protocols designed by our IBH team
  • At-home biofeedback training
  • Mindfulness-based
  • Trauma-ready
  • Biofeedback-integrated exposure therapy
OUR INTEGRATED BEHAVIORAL HEALTH TEAM
QUESTIONS?