Wisconsin Public Psychiatry Network Teleconference (WPPNT)

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WPPNT Reminders

• Call 877-820-7831 before 11:00 a.m.
• Enter passcode 107633#, when prompted.
• Questions may be asked, if time allows.
• To ask a question, press *6 on your phone to un-mute yourself. *6 to remote.
• Ask questions for the presenter, about their presentation.

• The link to the evaluation for today’s presentation is on the WPPNT webpage, under today’s date: https://www.dhs.wisconsin.gov/wppnt/2019.htm
Exercise as an antidepressant: What’s the evidence, and how can I help my clients to do it?
(update 8 years later)

DHS Mental Health Teleconference
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Disclosures

None
Objectives

- List reasons why it is important to consider the use of exercise for patients with mental illness.
- Describe the evidence base for the psychiatric benefits of exercise in treating mood and anxiety disorders.
- Apply practical skills in helping patients to exercise, including helping to choose an activity, to get started with an exercise program, to overcome barriers to adherence to an exercise program, and to stay motivated.
- Consider psychiatric risks that may go along with use of exercise by psychiatric patients.
Outline

- **Background**
- Evidence for psychiatric benefits of exercise
  - Mood Disorders
  - Anxiety Disorders
- Incorporating exercise into psychiatric practice
- Not without psychiatric risk...
Why exercise for mental illness?
Why exercise for mental illness?

- Our meds and psychotherapy don’t always fully work!
- And medications certainly are not always tolerated...
- Some people prefer “natural” therapies
- It’s cost effective
- Good for patients physically
- And in fact it does help mental illness! (as you’ll see...)
Why it might work...
Why it might work...

Diversion from negative thoughts

Why it might work...

- Diversion from negative thoughts
- Mastery of a new skill

Why it might work...

- Diversion from negative thoughts¹
- Mastery of a new skill¹
- Social contact

Why it might work...

- Diversion from negative thoughts\(^1\)
- Mastery of a new skill\(^1\)
- Social contact
- Increased endorphins and monoamines\(^2\)

Why it might work...

- Diversion from negative thoughts\(^1\)
- Mastery of a new skill\(^1\)
- Social contact
- Increased endorphins and monoamines\(^2\)
- Decreased cortisol\(^2\)

Why it might work...

- Diversion from negative thoughts¹
- Mastery of a new skill¹
- Social contact
- Increased endorphins and monoamines²
- Decreased cortisol²
- Thermogenesis

Why it might work...

- Diversion from negative thoughts\(^1\)
- Mastery of a new skill\(^1\)
- Social contact
- Increased endorphins and monoamines\(^2\)
- Decreased cortisol\(^2\)
- Thermogenesis
- Increased BDNF and neurogenesis...\(^3-4\)

Exercise grows your hippocampus

120 adult patients randomized to either a sedentary lifestyle or to a walking program (starting at 10 minutes per day and increasing to 40 minutes per day) for 1 year. The exercise group (blue line) had an increase in hippocampal volume, while the sedentary group had a decrease.

Erickson K, et al 2011. PNAS.
Outline

✧ Background
✧ **Evidence for psychiatric benefits of exercise**
  – Mood disorders
  – Anxiety disorders
✧ Incorporating exercise into psychiatric practice
✧ Not without psychiatric risk...
New research on effectiveness of exercise as an antidepressant...

**Physical Activity and Incident Depression: A Meta-Analysis of Prospective Cohort Studies**

Felipe B. Schuch, Ph.D., Davy Vancampfort, Ph.D., Joseph Firth, Ph.D., Simon Rosenbaum, Ph.D., Philip B. Ward, Ph.D., Edson S. Silva, B.Sc., Mats Hallgren, Ph.D., Antonio Ponce De Leon, Ph.D., Andrea L. Dunn, Ph.D., Andrea C. Deslandes, Ph.D., Marcelo P. Fleck, Ph.D., Andre F. Carvalho, Ph.D., Brendon Stubbs, Ph.D.

**Objective:** The authors examined the prospective relationship between physical activity and incident depression and explored potential moderators.

**Method:** Prospective cohort studies evaluating incident depression were searched from database inception through Oct 18, 2017, on PubMed, PsycINFO, Embase, and SPORTs. Depression in youths (adjusted odds ratio=0.90, 95% CI=0.83, 0.98), in adults (adjusted odds ratio=0.78, 95% CI=0.70, 0.87), and in elderly persons (adjusted odds ratio=0.79, 95% CI=0.72, 0.86). Protective effects against depression were found across geographical regions, with adjusted odds ratios ranging from 0.65 to 0.84 in Asia, Europe, North America, and Oceania, and against increased incidence of positive screen for depressive.
New research on effectiveness of exercise as an antidepressant...

- Meta-analysis of 49 studies (266,939 people)
- Exercise protective against depression in:
  - All ages (youth, middle age, elderly)
  - All geographic areas studied (Asia, Europe, North American, Oceania)
  - Across genders
Depression & Exercise: Take-Homes

- Patients should do it
Mood Disorders & Exercise: Bipolar Depression

- Very little data\(^1\)-\(^2\)
- Overall physical activity levels in bipolar probably lower than the general population\(^2\)-\(^3\)
- No RCTs
- What we have:
  - 1 small study showing improved bipolar depression and anxiety in inpatients participating in walking group 5 days/week x 40 minute sessions vs control\(^4\)
  - 1 small study showing single bout of exercise (walking on treadmill x 20 minutes) significantly improved bipolar patients’ perception of well-being\(^5\)
Mood Disorders & Exercise: Bipolar Mania

- Very little data
- “Exercise may be a double-edged sword for patients with bipolar disorder”¹
- “Association of exercise with quality of life and mood symptoms in a comparative effectiveness study of bipolar disorder”, Journal of Affective Disorders, 2013:²
  - Population: 482 patients with bipolar in a multi-site study
  - Methods: cross-sectional
  - Results: Less frequent exercise was associated with more time depressed, more depressive symptoms, and lower quality of life and functioning. More frequent exercise was associated with higher quality of life, better functioning, more mania in the past year, and more current manic symptoms (dose-response relationship: for every 10 pt increase in the BISS mania score, they reported exercising 3 more days per week).
  - Implications: Chicken or egg problem. However, there appears to be a mood-specific relationship between exercise frequency and polarity. Does this suggest a targeted intervention for patients with current bipolar depression or bipolar mania?

Bipolar Disorder & Exercise: Preliminary Take-Homes

- Exercise might be relevant to bipolar disorder in many ways, e.g., via direct mood-elevating effects, and physical activity as a core constituent of social rhythm.
- The potential physical health benefits in this population are substantial.
- In general, recommend a stable, consistent exercise regimen for bipolar patients.
- Prescribe a mood stabilizer (or refer for consideration of such) along with exercise.
- Monitor exercise just as you do sleep and other markers of mood vulnerability.
Outline

✧ Background
✧ Evidence for psychiatric benefits of exercise
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  – Anxiety disorders
✧ Incorporating exercise into psychiatric practice
✧ Not without psychiatric risk...
Anxiety Disorders & Exercise

- Exercise appears effective\(^1\)
- Caveat: minimal literature on patients with actual anxiety disorders\(^1\)
- Data are mixed, but **AEROBIC** exercise may be key (unlike in MDD, for which both aerobic and strength training have benefit)\(^1\)\(^-\)\(^4\)
- May require sessions >30-40 mins\(^2\)\(^,\)\(^5\)

1. Stonerock GL et al. 2015.
Outline

Background

Evidence for psychiatric benefits of exercise
  – Mood disorders
  – Anxiety disorders

Incorporating exercise into psychiatric practice

Not without psychiatric risk...
What are the actual recs?
What are the actual recs?

▫ At least 150 minutes per week of moderate-intensity aerobic activity OR 75 minutes per week of vigorous aerobic activity, preferably spread throughout the week
▫ Get up and move throughout the day (any activity is better than none)

American Heart Association 2018. www.heart.org
What is the most frequently reported exercise activity among adults meeting these recommendations?
Helping your client get started: picking an activity

• Walking is often easiest (cheap, easy to do)
• The activity should be easily accessible on a regular basis
• The activity should fit easily into the client’s daily schedule
• The activity should not generate unbearable financial or social costs
Association between physical exercise and mental health in 1.2 million individuals in the USA between 2011 and 2015: a cross-sectional study

Sammi R Chekroud, Raïtza Gueorguieva, Amanda B Zheutlin, Martin Paulus, Hiran M Krumholz, John H Krystal, Adam M Chekroud

Summary

Background Exercise is known to be associated with reduced risk of all-cause mortality, cardiovascular disease, stroke, and diabetes, but its association with mental health remains unclear. We aimed to examine the association between exercise and mental health burden in a large sample, and to better understand the influence of exercise type, frequency, duration, and intensity.

Methods In this cross-sectional study, we analysed data from 1237194 people aged 18 years or older in the USA from the 2011, 2013, and 2015 Centers for Disease Control and Prevention Behavioral Risk Factors Surveillance System survey. We compared the number of days of bad self-reported mental health between individuals who exercised and those who did not, using an exact non-parametric matching procedure to balance the two groups in terms of age, race, gender, marital status, income, education level, body-mass index category, self-reported physical health, and previous diagnosis of depression. We examined the effects of exercise type, duration, frequency, and intensity using regression methods adjusted for potential confounders, and did multiple sensitivity analyses.

Findings Individuals who exercised had 1.49 (43.2%) fewer days of poor mental health in the past month than individuals who did not exercise but were otherwise matched for several physical and sociodemographic...
New research on type of activity...

- Cross-sectional study of 1.2 million individuals in the USA between 2011 and 2015

- Types of exercise most associated with improved mental health:
  - Popular team sports
  - Cycling
  - Aerobic and gym activities

- Duration/frequency of exercise most associated with improved mental health:
  - 45 minutes
  - 3-5 times per week
Helping your patient get started: the other details

- Make sure your client does not need medical evaluation first
- Nail down ALL the details with your patient:
  - Time of day (more likely to become a habit if it is the same time every day)
  - Days of week
  - Workout clothes
Helping your client get started: the client who just can’t get going...

- Set reasonable expectations
- Discuss chances to be more active during the day:
  - Take the stairs instead of the elevator
  - Park farther away, or get off the bus one stop early, or walk to the cafeteria or library on the far end of campus
  - Take 5-10 minute breaks while studying to get up and walk around
Staying motivated

- Find a reliable workout partner
- Listen to motivating/favorite music or podcasts
- Track success (big visible calendar!)
- Reward success
- Build in a dual purpose to the activity (e.g., walking dog; walking to destinations)
Cultural factors

- Recent study of 4000 adolescents and 3300 young adults:

JAMA Pediatrics | Original Investigation

Association of Physical Activity With Income, Race/Ethnicity, and Sex Among Adolescents and Young Adults in the United States
Findings From the National Health and Nutrition Examination Survey, 2007-2016

Sarah Armstrong, MD; Charlene A. Wong, MD, MSHP; Eliana Perrin, MD, MPH; Sara Page, MD; Lauren Sibley, BS; Ashley Skinner, PhD
Cultural factors

Recent study of 4000 adolescents and 3300 young adults:

- **Higher income** associated with higher likelihood of physical activity
- **White race** associated with higher likelihood of physical activity
  - Black and Hispanic females 13% and 11% less likely, respectively, to exercise compared to white females
- **Males** engage in more daily minutes of physical activity compared with females (persists across all race and income groups)

Cultural factors: why the disparities?
Cultural factors (cont’d)

- Masculine gym environment can be intimidating and frightening
- Women especially (but not exclusively) describe sexual harassment/lewd comments while exercising
- In grade/high schools of lower financial means, there are fewer resources for exercise/sport
  - Less exercise during a formative time for establishing lifelong exercise habits
- Neighborhoods with lower income residents less likely to have gyms, sidewalks, connected streets, bike trails, and perceived safe outdoor spaces
- Sexual minority clients more likely to have been excluded from sport
- Exercise equipment/classes not always accessible by students with disabilities
- Religious/cultural attire and beliefs about public exercise can limit participation in some activities
- In some cultures/families, exercise can feel “selfish”
- Overweight/obese clients can feel very self-conscious

My two most important pearls

- Write a prescription (start with 10 minutes 3x/week)
- Emphasize the need for sustainability
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Psychiatric risks associated with exercise...
Psychiatric risks associated with exercise...

- Substance use (e.g., stimulants including caffeine, steroids)
- Eating disorders/RED-S
- “Exercise addiction”
- And no exercisers, from recreational to elite levels, are immune to these risks...
Psychiatric risks associated with exercise...

Questions to ask your client if you think they’re heading into unhealthy territory:

– Do you regularly skip obligations or time with friends/family to exercise?
– Is working out negatively affecting your school, work, or family/friends?
– Do you feel overwhelmed by guilt when you take a day off from your exercise routine?
– Are you counting calories and adding exercise time to make up for food you eat?
Outline

minated Background

Evidence for psychiatric benefits of exercise
  – Mood disorders
  – Anxiety disorders

Incorporating exercise into psychiatric practice

Not without psychiatric risk...
Conclusions

- There are many reasons why exercise makes lots of sense for clients with mental illness.
- Evidence exists for benefits of exercise for depression > anxiety > bipolar disorder. We need more study.
- When prescribing exercise: start low, go slow, spend time discussing it, and make it sustainable.
- We must be sensitive to how factors such as gender stereotypes, the built environment, and opportunities to exercise/play sports limit whether clients can act on our recommendations.
- Exercise isn’t a panacea and isn’t without risk.
Thank you!

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