



Hope and Achievement for Depressed Adolescents

A video of this presentation can be found on YouTube:

<https://youtu.be/ZhCPmplUqUI>

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Introduction



- ▶ When we treat depression, are we attempting to make negative symptoms “go away” or are we trying to improve the patient’s overall condition?
- ▶ Hopelessness → Poor outcomes in treating depression
 - ▶ Curry et al, 2006
- ▶ A lack of hopelessness does **not** equal “having hope”
 - ▶ Snyder et al, 1996
- ▶ Hope does **not** equal intelligence
 - ▶ Snyder et al, 1996
- ▶ Hope **does** correlate with better school performance
 - ▶ Ciarrochi, Heave and Davies, 2007

Introduction

- Healthy People 2020 (Office of Disease Prevention and Health Promotion)
 - <https://www.healthypeople.gov/2020/topics-objectives/topic/mental-health-and-mental-disorders/objectives>
 - 68.9% of children with mental disease received treatment in 2008
 - “Reduce the proportion of adolescents who experience major depressive episodes.”

MHMD-4.1

Reduce the proportion of adolescents aged 12 to 17 years who experience major depressive episodes (MDEs)

LHI

MHMD-4.2

Reduce the proportion of adults aged 18 years and older who experience major depressive episodes (MDEs)

Revised

Treatment Expansion

MHMD-5

Increase the proportion of primary care facilities that provide mental health treatment onsite or by paid referral

MHMD-6

Increase the proportion of children with mental health problems who receive treatment



Specific Aims

- ▶ “Youth treatment research needs to examine intervention impact in ways that go beyond assessment of the specifically targeted youth symptoms and diagnoses.”
 - ▶ Weisz, Doss and Hawley, 2005
- ▶ Explore correlation between depression treatment, hope, and achievement
 - ▶ Decrease depression symptoms → increase hope
 - ▶ Increase hope → increase achievement
 - ▶ Decrease depression symptoms → increase achievement
- ▶ Also, explore effect of pharmacotherapy vs. placebo



Hypothesis

- ▶ Null hypothesis
 - ▶ Treating depression will have no effect on hope nor achievement
- ▶ Alternate hypothesis
 - ▶ Treating depression in adolescents will improve a measurement of hope as compared to baseline and that an increase in hope will correlate with an improvement in academic achievement scores



Experimental Design

- ▶ Acquire adolescents (12-15 years old) as referred by physicians or clinicians
 - ▶ Diagnosis: moderate to severe depression
 - ▶ Randomize treatment between CBT + medication and CBT + placebo
 - ▶ Recruit an equal sized control group of unaffected adolescents
- ▶ Acquire baseline demographics
 - ▶ Age, gender, ethnicity, geographical location, SES.
 - ▶ Establish who the study represents
- ▶ Test verbal intelligence (WISC) for IQ < 80 → exempt from trial
- ▶ Test depression symptomology (Children's Depression Inventory, CDI [< 17])
- ▶ Test Hope (Child Hope Scale, CHS [next slide])
- ▶ Test Achievement (Wechsler Individual Achievement Test, WIAT)

Child Hope Scale

“Questions About Your Goals:”

1. I think I am doing pretty well.
2. I can think of many ways to get the things in life that are most important to me.
3. I am doing just as well as other kids my age.
4. When I have a problem, I can come up with lots of ways to solve it.
5. I think the things I have done in the past will help me in the future.
6. Even when others want to quit, I know that I can find ways to solve the problem.

Options for the six questions:

- 1 = “None of the time”
- 2 = “A little of the time”
- 3 = “Some of the time”
- 4 = “A lot of the time”
- 5 = “Most of the time”
- 6 = “All of the time”

- Questions 1, 3, and 5 are “agency thoughts.” Questions 2, 4, and 6 are “pathways thoughts.” Quoted from Snyder et al (1997): “Agency thoughts reflect the perception that children can initiate and sustain action toward a desired goal; pathways thoughts reflect the children's perceived capability to produce routes to those goals.”

- **Snyder et al, 1997**



Experiment timeline

- ▶ Baseline testing = Time 0
- ▶ Half-way point (42 days) = Time 1
 - ▶ Re-test hope (CHS)
- ▶ End (84 days) = Time 2
 - ▶ Re-test depression symptoms (CDI) for treatment groups
 - ▶ Re-test hope (CHS) and achievement (WIAT) in all groups



Planned Data Analysis

- ▶ Excel and “Real Statistics”
- ▶ Repeated Measure ANOVA
 - ▶ Depression treatment
 - ▶ Hope
 - ▶ Achievement
- ▶ One-way ANOVA
 - ▶ Treatment groups (each) with control group
 - ▶ Hope
 - ▶ Achievement
- ▶ Coefficient of determination (r^2) and correlation coefficient (r)
 - ▶ Depression → hope; hope → achievement; depression → achievement



Power estimation / Population estimate

- ▶ Hope, mean change: 1.7 points
 - ▶ SD = 3.01 to 6.11
 - ▶ Using SD = 4.56, Power of 80%, alpha of 0.05 and effect size of 1.7:
 - ▶ 113 subjects per group
 - ▶ 15% loss to follow-up → 133 subjects/group (399 total)
- ▶ SD for achievement = 14.0
 - ▶ 113 subjects, at 80% power, detect a difference of 5.22 points
 - ▶ Based on similar research and population averages, desire is to have a 7 point difference



Expected Outcomes

- ▶ Loss to follow-up
 - ▶ Disregard results of lost subjects
- ▶ Depression symptoms will decrease
 - ▶ Difference between placebo and medication?
- ▶ Hope will increase
 - ▶ Significance?
 - ▶ Difference between placebo and medication?
- ▶ Achievement? (See hope, above [same story])
- ▶ 80% power?
 - ▶ Tavernier and Giraudeau, 2015: 23% chance of being under powered
 - ▶ Also looking for correlation, uncertain how to measure “clinical significance”



Discussion / Commentary

- ▶ Adolescent coping
 - ▶ A small amount of time dealing with a major depressive episode can potentially have long term consequences
- ▶ New focus, positive effects vs. decreased negative effects
- ▶ NIMH and RDoC
 - ▶ <https://www.nimh.nih.gov/research-priorities/rdoc/units/self-reports/index.shtml>
- ▶ Increase awareness / renew awareness (20 years!)
- ▶ To quote Ciarrochi, Heaven and Davies (2007):

“If youth are to be successful in an ever-increasing competitive global environment, it is essential that their academic achievements reflect their innate ability.”

References

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Any questions / comments?

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➤ Thank you!

