Apps For Adolescent Anxiety: Creating a Resource For Primary Care Providers

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Background

Adolescent anxiety epidemiology:
o Anxiety disorders are the most common mental health disorders of adolescence[1]
o 1 in 3 adolescents will meet criteria for an anxiety disorder by 18[2]

Prevalence of mental health apps:
o Apple voted Calm App of the year in 2017
o 1 in 5 Americans admits to using these apps[3]

Benefits of Apps:
o Pragmatic option for those with: limited transportation, limited finances, rural settings, intervention after disaster[4]
o Treatment is available 24/7
o Smartphone delivery especially relevant to adolescents[4]

Why are providers not recommending now?
o Lack of confidence in modality[5]
o Concern for privacy and confidentiality[5]
o Lack of knowledge about apps[5]

Question/Hypothesis

Question: To what extent will PCPs exposed to an educational video regarding apps for adolescent anxiety increase their intention to recommend mindfulness apps as measured by differences in survey responses compared to a control group

Hypothesis: If providers are given an educational PowerPoint on apps to help treat adolescent anxiety, then they will have a be modestly more likely to recommend apps to their patients

Methodology

o Presentation and survey structured using Technology Acceptance Model Theory 2 (TAM2)
o Received COMIRB exemption as an educational stufy
o Video/survey distributed to providers via redcap, twitter and the University of Colorado Dept. of Family Medicine Newsletter
o Half of subjects received video and survey, half received survey only
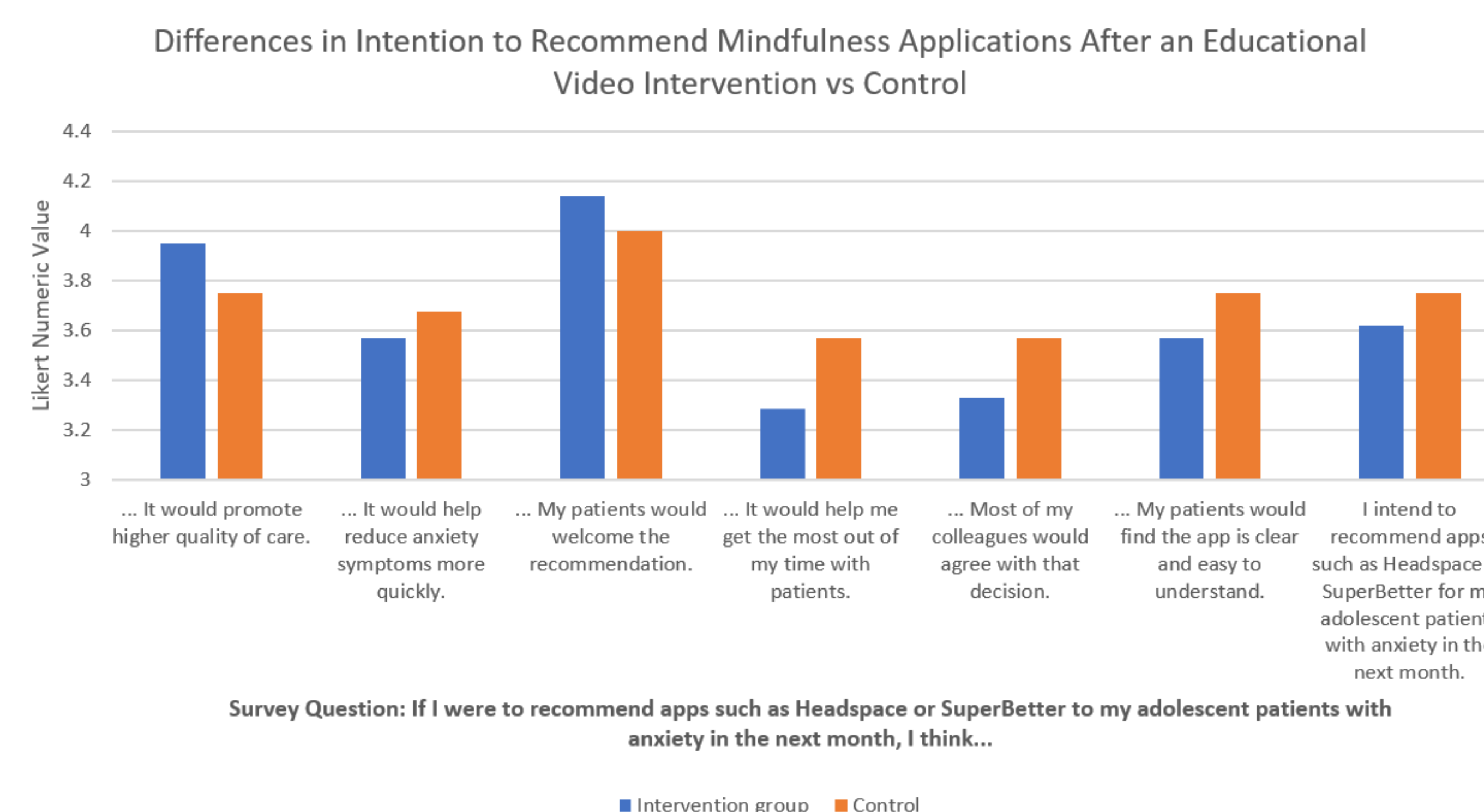o T-test analysis to determine efficacy of the video

Technology Acceptance Model
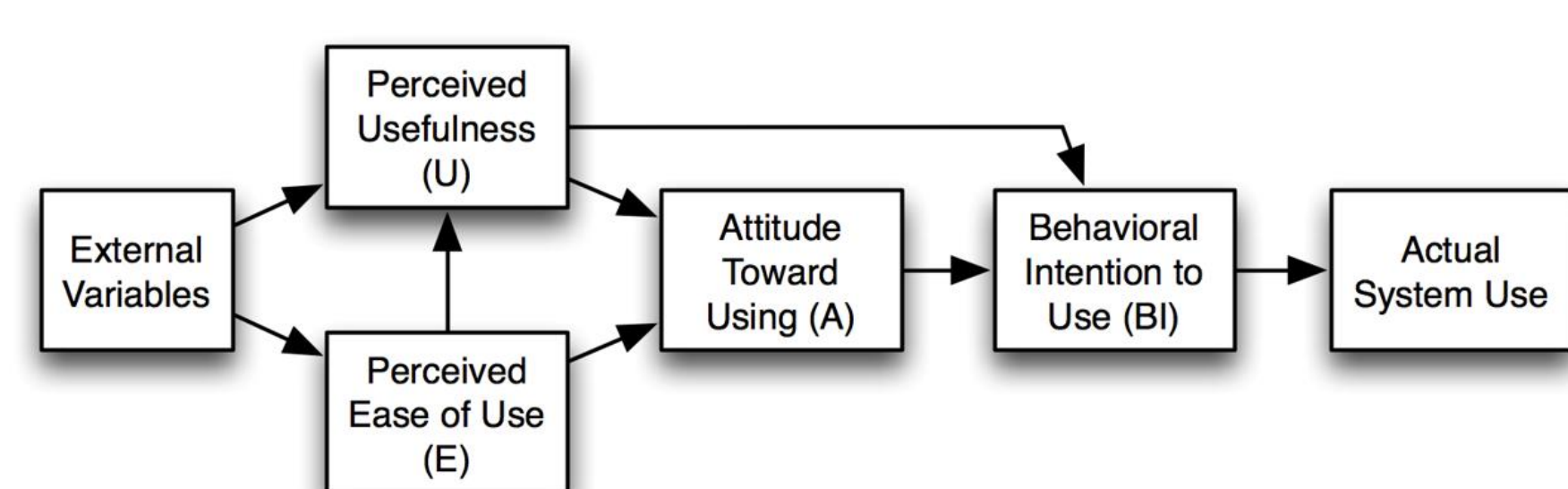
Provider Survey

If I were to recommend apps such as Headspace or SuperBetter to my adolescent patients with anxiety in the next month, I think...	Strongly Agree	Agree	Neither agree or Disagree	Disagree	Strongly Disagree
1. … it would promote higher quality of care.	1	2	3	4	5
2. … it would help reduce anxiety symptoms more quickly.	1	2	3	4	5
3. … my patients would welcome that advice.	1	2	3	4	5
4. … it could help me get the most out of my time with patients.	1	2	3	4	5
5. … most of my colleagues would agree with that decision.	1	2	3	4	5
6. … my patients would find the app is clear and easy to understand.	1	2	3	4	5
7. I intend to recommend apps such as Headspace or SuperBetter for my adolescent patients with anxiety in the next month.	1	2	3	4	5

RESULTS

o No Statistically significant results achieved- p values >0.05 for all data collected

Differences in Intention to Recommend Mindfulness Applications After an Educational Video Intervention vs Control

Survey Question: If I were to recommend apps such as Headspace or SuperBetter to my adolescent patients with anxiety in the next month, I think...

■ Intervention group ■ Control

Discussion

Expectations:
o Would have expected increase in intention to recommend based on previous literature showing knowledge surrounding apps is a significant barrier to provider recommendation

Lack of statistical significance related to:
o Small sample size
o Small effect of intervention
o Inherent difficulty in measuring changes on Likert scale

Future Directions

Future Directions:
o Gain more participants by offering incentives for survey completion
o Increase participants by surveying providers for any age of patient
o Improve video quality/obtain expert video production consultation
o Use 7-point Likert scale instead of 5-point for increased sensitivity

Reference

1. U.S. Census Bureau. (2014). Current Population Survey, annual social and economic supplement, 2014. Retrieved January 21, 2016, from http://www.census.gov/cps/data/cpstablecreator.html.
2. Merikangas, K., Hep, J., Burstein, M., Swanson, S., Avenevoli, S., Cui, L., Benejet, C.,…. Swendsen, J. (2010). Lifetime prevalence of mental disorders in U.S. adolescents: results from the National Comorbidity Survey Replication—Adolescent Supplement (NCS-A). *Journal of American Academy of Child and Adolescent Psychiatry*, 49(10), 980-989. doi: 10.1016/j.jaac.2010.05.017.
3. JMIR Mhealth Uhealth 2019;7(6):e1319 https://mhealth.jmir.org/2019/6/e13199
4. Byambasuren O, Beller E, Glasziou P. Current Knowledge and Adoption of Mobile Health Apps Among Australian General Practitioners: Survey Study
5. Luxton, D. D., Nelson, E.-L., & Maheu, M. M. (2016). A practitioner's guide to telemental health: How to conduct legal, ethical, and evidence-based telepractice. Washington, DC, US: American Psychological Association. http://dx.doi.org/10.1037/14938-000
6. Gordon, W. J., Landman, A., Zhang, H., & Bates, D. W. (2020). Beyond validation: getting health apps into clinical practice. NPJ digital medicine, 3, 14. https://doi.org/10.1038/s41746-019-0212-z
7. Bry, Chou, Miguel, & Comer. (2018). Consumer Smartphone Apps Marketed for Child and Adolescent Anxiety: A Systematic Review and Content Analysis. Behavior Therapy, 49(2), 249-261.
8. Berry, R., & Lai, R. (2014). The Emerging Role of Technology in Cognitive–Behavioral Therapy for Anxious Youth: A Review. *Journal of Rational-Emotive & Cognitive-Behavior Therapy*, 32(1), 57-66.
9. Novotney, Amy. (2016)Should you use an app to help that client?. Monitor on Psychology, 47(10). 64. Retrieved from https://www.apa.org/monitor/2016/11/client-app