

A PRELIMINARY EXPLORATION OF RESEARCH ON
ANXIETY MANAGEMENT TOOLS

by

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A THESIS

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This thesis is a preliminary exploration of research on anxiety and anxiety management interventions. The future direction of anxiety research should be to make anxiety management interventions more available and improve their efficacy (Robinson, 2013; Craske, 2014). The goal of this thesis is to simplify a holistic set of techniques for managing anxiety so that they can be helpful to students at the University of Oregon. Increasing the availability of anxiety management interventions via video, and their efficacy (a therapy's ability to effectively manage anxiety) through combining multiple interventions, is how my thesis fits into the future direction of anxiety management research.

I hypothesize that a sample is impacted by anxiety and that a 10-minute video summary of a holistic set of anxiety management tools will improve the sample's use, knowledge, and confidence in these tools. The anxiety management methods I will cover include Cognitive Behavioral Therapy (CBT), Exposure Therapy (ERP), and Dialectical Behavior Therapy (DBT). I will examine elements of these anxiety management interventions, their effectiveness, availability, and discuss how they could be helpful to people without an anxiety disorder diagnosis.

Keywords: Cognitive Behavioral Therapy (CBT), Yuck Diagram, Exposure Therapy (ERP), Dialectical Behavior Therapy (DBT).

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Introduction

When I think of mental health, I think of long walks, good food, friends, yoga, mindfulness, and all the other things that people do to support their mental health. I never hear people talking about anxiety management interventions. Clinically approved anxiety management interventions are not the magic solution. However, they are a set of information and tools that is untapped. Some people struggle with mental challenges that may not be directly linked to anxiety. But anxiety is pervasive, and its impacts are hard to track. I believe that public knowledge in the United States needs to include clinically approved anxiety management interventions when discussing a holistic plan to support mental health.

I wish I had proactively managed my anxiety and my mental health. In a brief synopsis of my challenges, I must state that I am vulnerable to OCD. Obsessive-Compulsive Disorder is an anxiety disorder. When I was a collegiate Sophomore, I asked myself, what would I do to get back the six hours a day I was spending on nothing, and my answer was anything. With support from my family, I enrolled in an intensive outpatient program (IOP) at NW Anxiety Institute. That is where I learned how to use the clinically approved anxiety management interventions discussed in this thesis.

You are like me. This statement is against and in support of everything that my IOP and research have taught me. You probably don't have an OCD diagnosis, but anxiety impacts you. I am willing to bet you felt a bit of anxiety during Covid. You may have doubted your socializing abilities, or maybe you conjured up thoughts of

brokenness. Anxiety impacts you, me, and all of us. But the most critical question that you need to ask yourself is, did anxiety limit you?

One final note. Experts are necessary to implement interventions like ERP, CBT, and DBT. However, there is a limit on access because of availability and cost. The average waitlist time for individual sessions at one treatment center was 6 months; they wished to remain anonymous. Coward (2021) says the average national wait time for behavioral health services is 48 days. The current system cannot supply such a massive demand. There need to be more treatment centers, more experts, and more information available to help fulfill this need.

Maybe in the future, interventions will be presented in a way that does not require experts. But the point of this thesis is to add clinical interventions to the public knowledge and supplement treatment. It is not meant to replace experts or treatment. All I want out of this thesis is to take a step to give people better access to at least a baseline understanding of anxiety management interventions. Adding this information to the public's understanding could make people aware of anxiety and lead them to manage it. In a best-case scenario, everyone would proactively manage their mental health; they would not wait until they are in dire need.

I believe in this work, and I plan to make this a lifelong passion.

Background & Literature Review

Anxiety

Robinson (2013) defines anxiety as “the response to prolonged, unpredictable threat, a response which encompasses physiological, affective, and cognitive changes (Grillon et al., 1991; Grillon, 2008; Davis et al., 2010)” (Robinson, 2013, p. 2).

Robinson’s definition accounts for a variety of impacts caused by anxiety. The strengths of accounting for these impacts include giving readers a broad understanding of anxiety and helping them recognize the pervasive effects anxiety has on cognition, behavior, and emotion. Robinson’s definition supports the goal of my thesis, to simplify a holistic set of techniques to help a sample manage their anxiety by allowing readers to recognize what anxiety is and what it does. For example, a few cognitive effects of anxiety include the following thinking traps: all or nothing, catastrophizing, negative filter, fortune-telling, overgeneralizing, mind reading, and shoulding.

There are many types of anxiety responses, but they all fall into one of two categories, adaptive and maladaptive anxiety (Robinson, 2013). Adaptive anxiety is helpful, like being able to detect and avoid danger. Maladaptive anxiety is not helpful and leads to a reduced quality of life, like the thinking traps mentioned above. If adaptive anxiety is habituated more than needed, it can become maladaptive anxiety. Moreover, both forms perpetuated over a long period of time have harmful effects.

The study in this thesis is designed to reduce the long-term impacts of anxiety (primarily maladaptive). This is relevant today because anxiety is a widespread problem among college students. Denizet-Lewis (2017) says the number of college students that struggle with anxiety has steadily increased, “Over the last decade, anxiety has

overtaken depression as the most common reason college students seek counseling services. In its annual survey of students, the American College Health Association found a significant increase — to 62 percent in 2016 from 50 percent in 2011 — of undergraduates reporting “overwhelming anxiety” in the previous year” (Denizet-Lewis, 2017, p. 1). Anxiety negatively impacts mental health, and it is becoming more and more common.

If people avoid their anxiety now, they put themselves at serious risk for mental damage in the future. Robinson (2013) deduced the effects of anxiety on cognitive function from over 200 studies that involved thousands of participants. They found anxiety decreased productivity and quality of life through, “Threat of shock [(a translational anxiety induction)] and increased detection of potentially harmful stimuli at multiple levels of cognition from perception to attention to memory and executive function” (Robinson, 2013, p. 7). Adaptive and maladaptive anxiety takes up space and time in multiple parts of the brain. The longer someone spends on anxiety, and the more intense their reaction, the greater the impact on mental health. As a result, decreasing the time and intensity of a response to anxiety decreases the impact of anxiety.

Anxiety comes from fear. Mowrer (1960) says fear is an emotion, and anxiety is the response to fear, “Most explicit are the behaviorists who have viewed anxiety disorders as continuous attempts to avoid confrontation with fear-evoking cues” (Foa, 1986, p. 1). Foa (1986) also describes how anxiety is a response to fear, “Emotions are viewed as represented by information structures in memory, and anxiety is thought to occur when an information structure that serves as a program to escape or avoid danger is activated” (Foa, 1986, p. 1). Since anxiety is a process, action, and a response to fear,

anxiety is the thing that harms quality of life, not fear. Anxiety is also the thing that cognitive-behavioral therapies are designed to manage. However, not all anxieties are equal. For example, maladaptive anxiety has a much more significant impact than adaptive anxiety because it takes up more time.

Arntz (2000) says maladaptive anxiety is more impactful than adaptive anxiety. Arntz's research is on a sample of 186 subjects, with four groups of patients with anxiety disorders and one control group of patients with no anxiety disorders. The sample was divided into various categories to test responses to objective danger information and anxiety response information. Responding to objective danger is helpful and known as adaptive anxiety. Maladaptive anxiety is not helpful, and it is what they are testing for. The researchers found that, "anxiety patients were not only influenced by objective danger information, but also by anxiety response information, whereas normal controls were not" (Arntz, 2000, p. 1). The patients who are more vulnerable to anxiety think they are in danger because of their anxiety response rather than objective danger. The more anxiety a patient experiences, the more likely anxiety will have an impact. In a broader sense, a feedback loop comes from maladaptive anxiety and is more likely to be experienced by people vulnerable to anxiety. Breaking this feedback loop through interventions is essential for reducing anxiety (Arntz, 2000; Foa, 1986; Robinson, 2013; Harvey, 2014; Deacon, 2013; Craske, 2014; Linehan, 2018; Abramowitz, 2019; and Hezel, 2019).

To break the feedback loop and reduce anxiety, people vulnerable to anxiety could work to manage maladaptive anxiety. Many internal and external sources contribute to anxiety, but maladaptive anxiety is the one this thesis focuses on. External

sources include COVID-19, social media, global warming, racism, war, toxic relationships, and poverty. A few internal sources include people's subjective responses to anxiety, mood, and medication. Many of these variables are unsolvable, so working on the one that leads to the most significant reduction in an individual's anxiety, is an excellent approach if the goal is to reduce anxiety. As a result, people could work to manage their maladaptive anxiety.

Some common ways to manage anxiety are through cognitive and behavioral interventions. Many researchers believe that improving the efficacy of these interventions can come from combining multiple interventions, using behavioral and cognitive interventions, and improving the screening, use, and strategic intents of medication (Harvey 2014, Deacon 2013, Katie 2013, Linehan 2018 and Hezel 2019). Because of the scope of this paper, I will not be going into any information on medication. Instead, what I will do is give evidence of the efficacy of Cognitive Behavioral Therapy (CBT), Dialectical Behavior Therapy (DBT), and Exposure Therapy (ERP), and how using this holistic set of interventions together could improve their efficacy.

Emotional processing of fear is aided through cognition and behavioral reinforcement. Foa (1986) discusses the importance of habituation when creating new pathways designed to manage fear and anxiety, "Emotional processing (EMP) is defined as the modification of memory structures that underlie emotions [...]" Physiological activation and habituation within and across exposure sessions are cited as indicators of EMP". They hypothesize that exposure to feared information and the

presence of new information must be available for new growth to occur. As a result of this growth, a reduced reaction to feared stimuli occurs.

Robinson (2013) advocates using anxiety management interventions to preserve cognitive function and quality of life. They recommend future work be done to include cognitive interventions in anxiety-related mental wellness plans, “Future work should attempt to delineate the causes of these differences [adaptive and maladaptive anxiety], as well as explore the possible use of (1) cognitive interventions for the treatment of anxiety and (2) the use of threat of shock as an analog screen for candidate anxiolytics” (Robinson, 2013, p. 22). This thesis’s study uses multiple therapies to combat anxiety via a holistic approach. Using the therapies of DBT, CBT, and ERP in this thesis study addresses Robinson’s first exploratory future work idea.

In a position differing from Robinson (2013), Hezel (2019) only discusses the efficacy of behavioral interventions in reducing anxiety prompted somatic symptoms. I believe combining these two articles is a perfect representation of how we need to use multiple interventions to reduce the impacts of anxiety. Combining Robinson’s (2013) and Hazel’s (2019) interventions to include cognitive and behavioral interventions is a central piece of this thesis. It is why I include CBT, ERP, and DBT into a combined intervention for managing anxiety.

CBT

CBT was designed to help patients vulnerable to anxiety understand the relationship between cognition, behaviors, and feelings so they could change their habituated responses and manage their anxiety. The origins of CBT come from Ellis’s

(1962) rational-emotive-behavior-therapy (REBT), which is a type of therapy under the umbrella of rational-emotive psychotherapy. In 1962, REBT was a cutting-edge therapy that focused on the impact cognition had on behavior and emotions, “It clearly emphasizes the cognitive-persuasive-didactic-reasoning method of showing a patient what his basic irrational philosophies are, and then of demonstrating how these illogical or groundless or definitional premises must lead to emotionally disturbed behavior and must be concertedly attacked and changed if this behavior is to be improved. And at the same time, it also indicates the primary aim of the therapy is to change the patient’s most intensely and deeply held emotions as well as, and along with, his thinking. In fact, the term implies, as the theory of rational-emotive psychotherapy holds, that human thinking and emotions are, in some of their essences, the same thing, and that by changing the former one does change the latter” (Ellis, 1962, p. 122). The unique strengths of REBT were that a patient could indirectly change their behavior, emotional responses, and long-term emotional state by changing their thoughts. This was made possible because Ellis oriented REBT to combat the impacts and relationships of illogical thinking patterns on emotionally disturbed behavior and emotional responses.

Beck (1979) developed CBT from REBT in the 1960s, and REBT became a type of CBT. Both therapies aimed to reduce the severity of emotional responses to anxiety. The main difference between the two therapies was that CBT was goal-oriented and focused on changing behaviors and thinking. In contrast, REBT was focused on changing thinking, “His empirical observations led him to start viewing depression not so much as a mood disorder but as a cognitive disorder [...] The combination of a detailed treatment protocol manual with outcome research was an innovation in

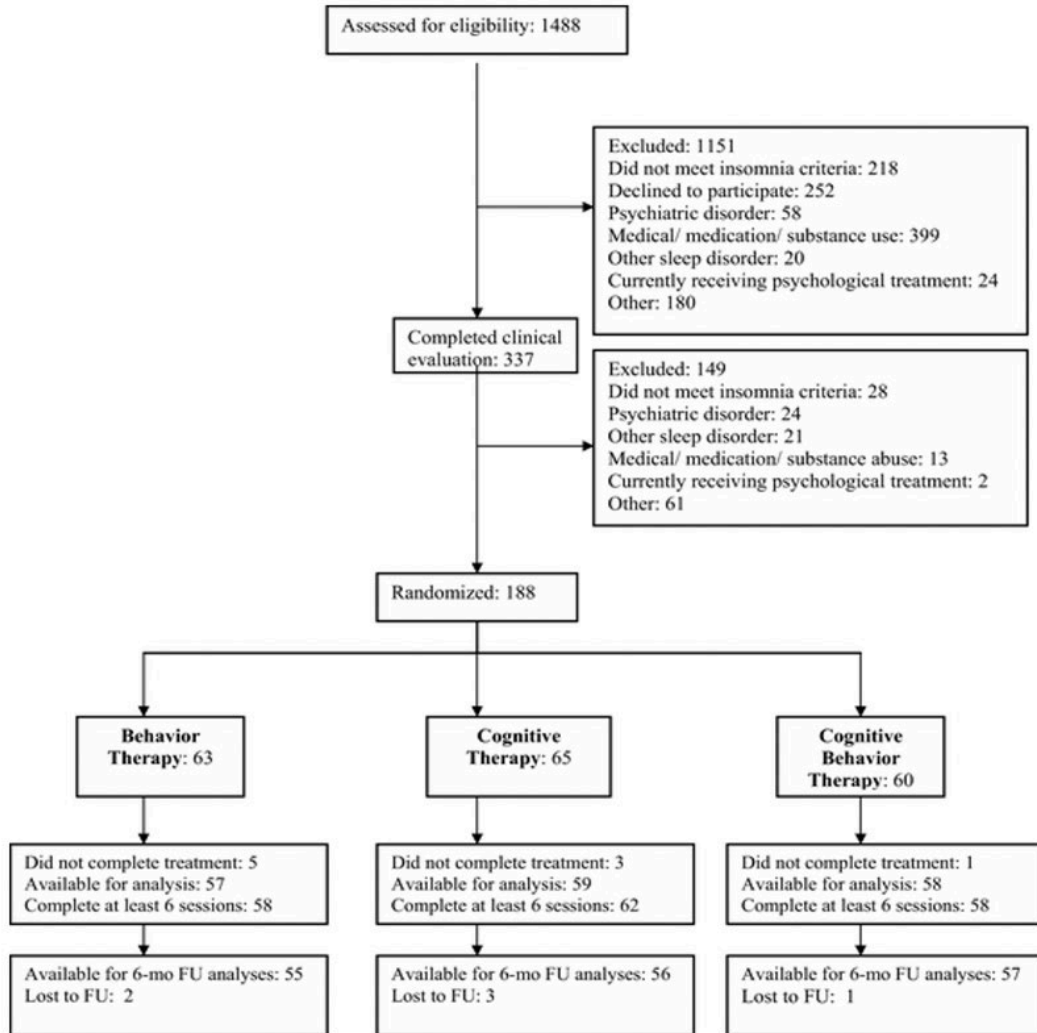
psychotherapy practice that had only previously been attempted by behavior therapists in treating discrete behavioral problems. By accomplishing the same feat with a more complex set of clinical interventions that included cognitive, emotional, and behavioral components, Beck pioneered a model for what psychologists many years later defined as an ‘empirically validated psychological treatment’” (Chand, 2021, p. 1). The strengths of Berk’s method included behavior and cognition, a protocol manual, and goal setting. Incorporating cognitive therapy with behavioral therapy was new and unique because it expanded the focus of change to cognition and behaviors instead of the REBT’s more limited focus on only changing cognition. The addition of goal-oriented CBT was vital because it gave patients a gauge of their success. Also, goals were customized by each patient with help from a clinician, breaking away from a one size fits all approach. Finally, the protocol manual Berk created helped make CBT the same across the board, regardless of which expert-taught it. This is opposed to a free for all, subjective version of CBT prescribed by an expert’s interpretation of the therapy.

Over the years, CBT evolved into what it is today and included many other therapies like REBT, ERP, and DBT. The method of CBT used in this thesis’s study is expressed in Harvey and Persons’ research (2006), “A case formulation driven approach (Harvey, 2006; Persons, 2006) [...] to determine the relative time and ordering of CT vs. BT” (Harvey, 2014, p. 5). This form of CBT is clinically focused and designed to be taught to patients who struggle with anxiety. Its strengths are that it is broad, simple, and a great introduction to psychotherapy. Based on Harvey’s (2014) and Craske’s (2014) use of CBT, the present study will include this intervention in the toolkit.

CBT describes the relationship between behavior, cognition, and emotion (Harvey, 2014). Behavior is an action, often responding to an emotion or a thought. Cognition is the meaning we imbue into feelings, behaviors, and thoughts. Emotions can be broken up into classical feelings like happiness, sadness and fear, and physiological responses like shortness of breath, vertigo, and heart-pounding sensations. Behavior, cognition, and emotion make up each corner of the CBT triangle. Researchers and psychology experts of CBT believe people have the power to change their cognition and behavior, but not emotions (Harvey, 2014). By changing cognition and behavior, these two corners change emotions over time, which is the reason behind the efficacy of anxiety management interventions. However, it is incredibly challenging to change cognition and behavior without a clinically approved tool (which is synonymous with intervention in this thesis), and that is why using other interventions is an essential part of improving CBT's efficacy (Robinson, 2013; Craske, 2014; Abramowitz, 2003; Deacon, 2013; and Hezel, 2019).

Harvey (2014) discusses the efficacy of CBT and gauges its efficacy between cognitive therapy and behavioral therapy. Their research was designed to reduce insomnia, a common symptom of anxiety disorders. In this original study, 1488 people were assessed for eligibility. After evaluation, 188 participants of various ages and genders were randomized into three groups and given lessons on either cognitive therapy, behavioral therapy, or CBT (see Figure 1). The participants had eight weekly individual sessions, and, "Full CBT was associated with the greatest improvements" (Harvey, 2014, p. 1). The holistic approach of CBT did better than cognitive therapy and behavioral therapy (see Figure 2). As a result, combining interventions can lead to

higher efficacy (Robinson, 2013; Craske, 2014; Abramowitz, 2003; Deacon, 2013; and Hezel, 2019).



Flow diagram of participants through each stage of the study. FU = follow-up.

Figure 1: Harvey measures efficacy of behavioral therapy, cognitive therapy, and cognitive behavior therapy.

Table 1
Participant Characteristics at Baseline

Variable	CBT (n = 60)				CT (n = 65)				BT (n = 63)				Total (N = 188)				Statistic
	%	n	M	SD	%	n	M	SD	%	n	M	SD	%	n	M	SD	
Gender (female)	53.3	32			69.2	45			63.5	40			62.2	117			3.42, <i>p</i> = .18
Age (years)			46.9	11.3			46.7	12.8			48.5	13.6			47.4	12.6	0.40, <i>p</i> = .67
Ethnicity (non-Caucasian)	8.5	5			9.2	6			3.2	2			6.9	13			3.61, <i>p</i> = .23
Marital Status																	1.73, <i>p</i> = .78
Single	33.3	20			24.6	16			27.0	17			28.2	53			
Married/Partnered	51.7	31			53.9	35			55.6	35			53.7	101			
Divorced/Separated/ Widowed	15.0	9			21.5	14			17.5	11			18.1	34			
Education (years)			16.7	3.0			15.9	3.4			15.5	3.3			16.0	3.2	2.00, <i>p</i> = .14
Employment																	7.42, <i>p</i> = .12
Full- or part-time/ student	82.8	48			76.6	49			67.7	42			75.5	139			
Unemployed	12.1	7			6.3	4			12.9	8			10.3	19			
Retired	5.2	3			17.2	11			19.4	12			14.1	26			
Insomnia duration (years)			13.8	11.9			14.8	12.9			14.8	13.6			14.5	12.8	0.11, <i>p</i> = .90
Insomnia Severity Index			17.9	3.4			17.6	3.5			18.3	3.4			17.9	3.4	0.70, <i>p</i> = .50
Type of insomnia																	9.53, <i>p</i> = .30
Initial	6.7	4			4.6	3			6.4	4			5.9	11			
Middle	21.7	13			29.2	19			12.7	8			21.3	40			
Late	3.3	2			9.2	6			6.4	4			6.4	12			
Mixed	65.0	39			56.9	37			73.0	46			64.9	122			
Nonrestorative	3.3	2			0.0	0			1.6	1			1.6	3			
Number of apnea/hypopnea/ hour (PSG)			0.26	0.86			0.15	0.39			0.14	0.38			0.18	0.58	0.74, <i>p</i> = .48
Number of PLM associated with arousals (PSG)			0.97	2.64			0.74	1.55			0.52	1.58			0.74	1.98	0.78, <i>p</i> = .46
Prior medication																	
Antidepressant	1.7	1			6.2	4			3.2	2			3.7	7			2.66, <i>p</i> = .26
Hypnotic	35.0	21			30.8	20			39.7	25			35.1	66			1.17, <i>p</i> = .57
OTC	20.0	12			15.4	10			20.6	13			18.6	35			0.69, <i>p</i> = .71
Comorbidity																	
Medical (any)	59.3	35			52.3	34			69.8	44			60.4	113			4.16, <i>p</i> = .13
Psychiatric (any)	25.0	15			23.1	15			23.8	15			23.9	45			0.06, <i>p</i> = .97
Anxiety	18.3	11			21.5	14			23.8	15			21.3	40			0.55, <i>p</i> = .76
Mood	6.7	4			6.2	4			6.4	4			6.4	12			0.01, <i>p</i> = .99

Note. CBT = cognitive behavior therapy; CT = cognitive therapy; BT = behavior therapy; PSG = polysomnography; PLM = periodic limb movements during sleep; OTC = over-the-counter.

Participant Characteristics at Baseline

Figure 2: Data analysis of Harvey's study

DBT

DBT is a cognitive-behavioral therapy used to challenge particularly tough cognitive anxiety provokers. DBT started in 1981 as an adapted form of behavioral therapy designed to help people at risk of suicide, “DBT was a trial-and-error clinical effort based on the application of behavioral principles (Bandura, 1969) and social learning theory (Staats & Staats, 1963; Staats, 1975) to suicidal behaviors (Linehan, 1981)” (Linehan, 2018, p. 1). Linehan was the first researcher to show DBT's efficacy

and unique benefits instead of only using behavioral therapy. The unique benefits are that it helps patients overcome particularly challenging behaviors like suicidal tendencies. According to Linehan (2018), clinicians use this tool today to help patients who struggle with challenging maladaptive anxiety behaviors. The summary of DBT in the literature and how it can be used will be described in the present study as a tool in the toolkit.

Linehan (2018) says DBT is designed to help people hold two seemingly opposing views in the mind simultaneously and see them as both true, with the goal being to get some space between ourselves and our fixation or perspective. The process helps patients identify thoughts and behaviors that perpetuate maladaptive anxiety. Once a patient identifies a negative pattern, they can work to create positive cognitive and behavioral changes. For example, I am about to go to a test and feel anxious. I can respond to this anxiety information and think, I am going to freak out and not do well because all I am going to focus on is anxiety. Alternatively, I could think, I am anxious, I recognize this, and now I will do the best I can on this test. The thought of anxiety is still there, but it is not the focus, so people work not to habituate that content. Reassurance, problem-solving, and rumination are some of the cognitive habits stimulated by maladaptive anxiety. DBT can lead a patient to recognize these habits and reduce their responses to them.

DBT is particularly useful for reducing the intensity of difficult content like suicidal and self-harm behavior. Content like this is hard to address by only using other anxiety management interventions like CBT and ERP because thoughts of suicide and self-harm act as barriers, diminishing these interventions' effectiveness. These thoughts

act as barriers because people avoid, work not to recognize, and actively deny their habituated response (their safety behaviors) to taboo content like suicidal thoughts. As a result, interventions like CBT and ERP do not work if a barrier keeps patients from exposing themselves to the theme (an example is self-harm) responsible for the maladaptive anxiety behavior. DBT is excellent at breaking through barriers built for challenging cognitive content because that is what it is made for. However, DBT's efficacy depends on addressing cognition and behavior, just like CBT and ERP (Harvey, 2014; Linehan, 2018).

Linehan discusses the implementation and effectiveness of dialectical behavioral therapy (DBT) for adolescents in the age range of 12 to 18 years old who engage in suicidal and self-harm behaviors, “≥3 prior self-harm episodes, suicidal ideation, or emotional dysregulation” (Linehan, 2018, p. 1). DBT is effective for managing difficult anxiety content like suicidal and self-harm behaviors. Linehan used a randomized clinical trial of 173 adolescents and found that DBT was effective, and more effective than IGST (a different intervention) in their component analysis. As a result of their findings, DBT is considered “the first well-established, empirically supported treatment for decreasing repeated suicide attempts and self-harm in youths” (Linehan, 2018, p. 6).

ERP

ERP was a behavior therapy designed to inhibit safety behaviors. Taylor was the first clinician to use ERP in the 1950s, but it was first published and distributed by Krasner in 1971, “In an interview with Leonard Krasner, Taylor described treating several patients with anxiety using techniques we would today call situational exposure

with response prevention (Krasner, 1971)” (Abramowitz, 2019, p. 14). Taylor gave examples of how he helped patients overcome their anxieties, like exposing patients who obsessively washed their hands to anxiety-provoking circumstances and blocking their hand-washing behavior. Now, clinicians regularly use ERP as a tool to help patients manage their anxiety. Based on the necessary factors and improvements mentioned by Abramowitz (2019), Hezel (2019), Craske (2014), and Deacon (2013), the present study will include ERP as a tool within the toolkit.

ERP focuses on behavior. When behavior is repeated, habituation occurs, and a habit is formed. Habits can lead a person to have adaptive or maladaptive anxiety (Abramowitz, 2019). For example, if a subject feels claustrophobic, they may immediately go outside; this is maladaptive anxiety, and it robs the individual from building a relationship with their anxiety. In other words, it is a safety behavior. Under ERP (synonymous with exposure therapy in this thesis), patients abstain from safety behaviors to build a relationship with their anxiety and become confident in their ability to handle it, hence anxiety management. This is typically done by a psychologist, who plans out a patient’s strategy to slowly build a relationship with the feared source (and theme) of anxiety. Over time, after tackling multiple sources, an improved relationship with anxiety can be achieved. In this thesis, sharing ERP is to help people understand what it is, so they can ask an expert or do their own research on it to see if it would be a helpful tool in their proactive or reactive anxiety management plan.

Abramowitz (2019) explains why exposure therapy is used to respond to fear (and anxiety) and how it is through an in-depth analysis of the method’s credibility, history, and specific variations made to exposure therapy based on anxiety content. He

discusses types of anxiety disorders that would benefit from exposure therapy while maintaining the belief that everyone sits on the anxiety spectrum. The time anxiety distracts from the day is the gauge used when prescribing the use of exposure therapy in their research.

Abramowitz (2003) discusses Walitzky-Taylor's meta-analysis of exposure therapy research. It is, "the only meta-analysis to date" (Abramowitz, 2019, p. 24), for exposure therapy. Response to any intervention is subjective, but randomized controlled trials and meta-analysis remain the best ways I know of to prove whether an intervention is helpful. However, there is a lack of consistency between randomized control trials because some only use clinically anxious individuals. According to this article, compared to an average person, a clinically anxious person, "overpredicts how frightened they will feel when encountering external conditioned fear stimuli, while also fearing anxiety itself" (Abramowitz, 2019, p. 39, paraphrased). Thus, they should use exposure therapy. In addition, everyone sits somewhere on the anxiety spectrum, and exposure therapy is meant to help anyone on this spectrum (Arntz, 2000; Robinson, 2013). Evidence in the literature shows that people do not have to be clinically anxious to benefit from ERP.

Walitzky-Taylor's meta-analysis, cited by Abramowitz, was a meta-analysis that proved the effectiveness of exposure therapy. This study tested if exposure therapy was better than no intervention at reducing anxiety and disorder-related symptoms in specific phobia, panic disorder, OCD, hypochondriasis, PTSD, social phobia, GAD, and child anxiety. They used effect size (ES) to measure the sizes of differences in the group means. An ES of 0.2, 0.5, and 0.8 represents a small, medium, and large effect

respectively. The study examined 33 studies with adults and children conducted between 1977 and 2004. The eight anxiety-related disorders listed above were represented in the collective samples, and “The horizontal line indicates an ES of 0.8, which is considered a large treatment effect” (Abramowitz, 2019, p. 24). This is evidence of the effectiveness of exposure therapy for patients with anxiety-related symptoms.

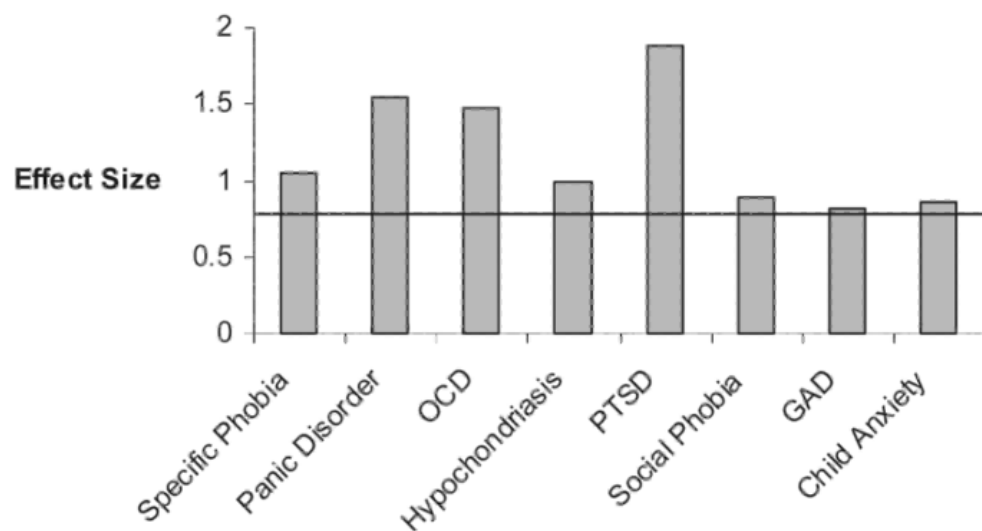


Figure 3: Taylor measures effect size of Exposure Therapy

It is important to note that exposure and response prevention (ERP) is a type of exposure therapy (E) made to manage OCD. Exposure therapy exposes a patient to an anxiety trigger, and it is helpful for all forms of anxiety disorders. Whereas ERP exposes a patient to an anxiety trigger and asks them to avoid safety behaviors, hence the response prevention (RP) part of ERP. For example, if someone fears contamination, touching the ground in a bathroom is exposure (E). Resisting the urge to wash your hands after touching the ground is response prevention (the RP in ERP). Response prevention was added to exposure therapy for OCD patients because people

vulnerable to OCD will use safety behaviors to reduce the anxiety of exposure, and as a result, reduce the efficacy of the intervention. To stay within the scope of this thesis, I'm going to treat these two as the same thing. I'm doing this because they are similar, and the information that I know focuses on ERP. It is my understanding that the tools in exposure therapy are also used in ERP because people repeat safety behaviors regardless of whether they have OCD. For example, if you were in an argument with someone and had to talk to them 20 minutes later, you might be tense. Somatic tension is a behavior that is repeated on instinct because of habituation. The assumption I am making is that this symptom could be managed under ERP, and exposure therapy. The only limitation to this assumption is that some behaviors are not somatic, but it is a common reaction to anxiety regardless of whether someone has OCD.

Abramowitz (2003) discusses the effectiveness of ERP when treating OCD. In their large sample of 126 patients with OCD, ERP's effectiveness is measured in the following five vulnerability clusters: harming, contamination, hoarding, unacceptable thoughts, and symmetry. There were two significant findings. The first was that ERP works for this large sample, "ERP reduces OCD symptoms specifically by weakening associations between (a) obsessional thoughts and anxiety and (b) compulsive rituals and anxiety reduction" (Abramowitz, 2003, p. 1055). The most significant barrier to managing OCD and reducing OCD-related symptoms are the habits patients depend on to reduce their anxiety. ERP breaks down these habits and gives space for new ones to form. Think of it like making a new trail. The trail you have been on is worn down to the dirt, but it gets you nowhere. You want to go somewhere, so you make a new trail, but the path of least resistance, the path worn down to dirt, is right there. And

sometimes, it's easy to take the easier path. ERP helps people stay on the hard path and make growth away from OCD habits a goal-oriented, strategized journey; and this is called extinction learning.

Another significant finding was that ERP was similarly effective between the five clusters, “suggesting that there are phenomenological similarities between the clusters beyond the presence of repetitive thoughts and behaviors” (Abramowitz, 2003, p. 1055). The significance of this finding is that patients with OCD may, on average, find improvements using ERP, regardless of the cluster they fall into. Though this is a generalization, there is evidence to support it. And if everyone with OCD benefits from ERP, and there is a similarity with its benefits that lie outside of the repetitive thoughts and behaviors, then who is to say that anxiety, in general, would not be better managed using ERP on average. Abramowitz's findings support the claim that ERP helps manage OCD and anxiety, but also suggest that the OCD dimensions of symmetry and ordering have not been thoroughly researched as a part of exposure therapy.

Hezel (2019) mentions how ERP effectively reduces OCD symptoms, which I have also personally found. One weakness in this article is that it is a meta-analysis of other research, meaning it does not include a testable sample of the information given. Instead, it focuses on general takeaways from other research, which is still helpful but cannot be generalized to my sample without a note of caution. That note of caution is that Hezel's interpretations of the data comes from other research, and inherently has confirmation bias, just like my thesis. Regardless, they looked at a combination of research done by others to find connections and meaning to support their hypothesis, “ERP is a highly efficacious treatment for many people who suffer from OCD” (Hezel,

2019, p. 5). Their article focuses on how ERP works, why it's effective, who it applies to, and where it needs improvement in the future. Our shared citations include Foa (1986), Craske (2014) and Abramowitz.

Hezel's (2019) ideas for how to improve OCD treatments in the future include making ERP more available, improving its viability, and combining it with pharmaceuticals, "Some especially notable challenges in treating OCD include addressing people's limited access to evidence-based treatments, finding novel ways to improve upon ERP to increase its efficacy, and integrating biological and psychological frameworks to fine-tune treatment" (Hezel, 2019, p. 3). Hezel takes a holistic approach to improve the efficacy of the single ERP intervention and a toolkit made up of interventions and medication.

Deacon (2013) improves the efficacy of ERP by optimizing inhibitory learning and incorporating CBT. The patients in their research have panic disorder, which falls under the broader category of clinically anxious because of the limited scope of this thesis. Inhibitory learning is the method within ERP that reduces anxiety. It works by exposing patients to anxiety and breaking their safety behavior habit loop, ultimately leading them to develop a relationship with anxiety instead of a fear response. In Deacon's research, he measures the effectiveness of CBT and inhibitory learning in ERP. 120 participants were involved in their randomized control trial, where "The findings suggest that the intensive delivery of IE [(interoceptive exposure)] exercises has the potential to improve the efficacy of exposure-based treatments for PD [(panic disorder)]" (Deacon, 2013, p. 1). The takeaway from this research is that IE is effective, and its efficacy is improved with the addition of CBT and inhibitory learning. This

takes away supports the theme that runs through this literature review; that a holistic strategy leads to the most beneficial outcome for managing anxiety and reducing anxiety-related symptoms via interventions.

Like Deacon (2013), Craske (2014) discusses multiple techniques that could be used in exposure therapy to maximize its ability to manage anxiety. Deacon used original research, whereas Craske's article is a meta-analysis of other people's research. After concluding their research, Craske lists eight measures discussed in the collective literature to optimize the effectiveness of exposure therapy, "1) expectancy violation, 2) deepened extinction, 3) occasionally reinforced extinction, 4) removal of safety signals, 5) variability, 6) retrieval cues, 7) multiple contexts, and 8) affect labeling" (Craske, 2014, p. 1). These measures are all discussed in the aggregate research on this topic. Through extensive analysis, Craske condensed and summarized ways to maximize the effectiveness of inhibitory learning. As a result, Craske (2014) improved the efficacy of exposure therapy through the holistic integration of methods that address the eight variables listed.

Direction of Research

Summary

This thesis will present a holistic set of interventions to subjects with the goal of making them aware of methods designed to manage their anxiety. Using behavioral and cognitive interventions together improves the efficacy of the intervention (Robinson, 2013; Craske, 2014; Abramowitz, 2003; Deacon, 2013; and Hezel, 2019). Combining multiple interventions into a single toolkit improves the efficacy of the interventions (Harvey 2014, Deacon 2013, Katie 2013, Linehan 2018 and Hezel 2019). The future direction of research for managing anxiety should be to include more methods, find new ways to improve efficacy, and make them available to the public (Robinson, 2013; Craske, 2014). Increasing the availability of anxiety management interventions via video and their efficacy through combining multiple interventions is how my thesis fits into the future direction of anxiety management research.

The efficacy of CBT, DBT, and ERP is supported by the research discussed in the literature review. CBT gives direct evidence for both my inclusion of this intervention within the toolkit I use in my survey, and the overall benefits of including multiple tools within a toolkit (Harvey, 2014). In other, equally complicated words, you could say that CBT is a tool kit within a tool kit. DBT shows unique benefits for difficult maladaptive safety behaviors (Linehan 2019), which supports my inclusion of it in the present study. And the literature supports the use of ERP for those who are, and are not clinically anxious (Abramowitz, et al., 2013; Robinson, 2013) which in turn supports my inclusion of the intervention in the present study. Combined, these interventions are proven to be more effective at overcoming maladaptive anxiety

responses than if they were implemented individually. Therefore, I plan to make and utilize a combined toolkit made up of CBT, DBT, and ERP, to prove efficacy for a sample, and increase the availability of information on anxiety management interventions.

To make anxiety management interventions more available to the public, I made a 10-minute video summarizing CBT, DBT and ERP. I hope that people, at the very least, learn that there are tools, experts, and collections of information designed to help people manage anxiety. In a perfect world, this would lead people to proactively find some holistic combination of interventions and mental health practices that work for them.

I wanted to prove the efficacy of the toolkit I made, but that is a difficult, subjective variable to prove. In place of efficacy, I hypothesize that a 10-minute video summary of a holistic set of anxiety management tools will improve my samples knowledge of the interventions (more than comprehension), confidence in managing anxiety (perception they can do something, self-efficacy in it), and use of the interventions (likelihood to use these skills). I also hypothesize that anxiety has an impact on this sample of students. To test these hypotheses, a quantitative survey was taken by 39 UO students via Qualtrics. The survey was approved by the IRB, and it gauges baseline anxiety using a test called the GAD-7, along with changes in knowledge, confidence, and use in relation to the toolkit.

I used the GAD-7 measure in this study, which is a seven-question survey designed to screen for, and measure the severity of General Anxiety Disorder, “The GAD-7 is a 7-item self-report scale developed to assess the defining symptoms of GAD

[(Generalized Anxiety Disorder)]” (Rutter, p. 1). I included this measure in my survey to test for a baseline anxiety level, by screening for GAD. According to Spitzer (2006), the strengths of the GAD-7 is its reliability and procedural validity, “The internal consistency of the GAD-7 was excellent (Cronbach $\alpha = .92$). Test-retest reliability was also good (intraclass correlation = 0.83)” (Spritzer, p. 2). In addition, other strengths include that all questions share the same numerical scale, which makes the data easier to analyze. Also, seven questions likely keep participants’ attention and lead to more accurate results than a survey that is too long or too short.

Present Study

The present study made anxiety management interventions more available and improved their efficacy. This idea originated from Robinson (2013), Craske (2014), Abramowitz (2003) and Hezel's (2019) ideas on the future direction of anxiety management interventions. The researchers predicted that using a holistic set of interventions would improve the efficacy of each method and the collective methods towards managing anxiety and reducing anxiety-related symptoms. Although it would be ideal to gauge a toolkit over the efficacy of each individual intervention, it is beyond the scope of this thesis. So instead, I tested the use, confidence, and knowledge of a toolkit I made to see if it has efficacy. Here's a link to the video I made, <https://www.youtube.com/watch?v=JIIrivNbfv0>. The video summarizes a holistic set of interventions, and I also refer to it as a toolkit. The toolkit includes cognitive interventions and behavioral interventions: CBT, DBT, and ERP. The video also uses visuals and additional techniques to help illustrate the efficacy of these interventions, like the Yuck Diagram. In addition, I used the GAD-7 to test the availability of clinically approved anxiety management information to collect a baseline anxiety level. I did this by asking if the sample had taken the GAD-7 before, and then I gauged the impact anxiety had on the sample through the questions presented. Through this study, I found that the sample was impacted by anxiety, they were not previously aware of the interventions, and their knowledge, confidence, and use of the interventions changed directionally because of the toolkit. In addition, this study served as an example of how future research can be done to improve the efficacy and availability of anxiety management interventions.

Method

Design

Participants were asked to answer a survey via Qualtrics anonymously. It was expected that participation would last anywhere from 7-32 minutes depending on how involved the participants wanted to be in the data collection process. There were two ways people could participate in this study. The first was to take the GAD-7 survey, which would have taken less than 7 minutes after they signed the consent form. The second was to take the GAD-7 survey, the pretest and post-test, and see the intervention video, which would have taken anywhere from 22-32 minutes total. The GAD-7 survey was used to measure a baseline level of anxiety. The pretest and post-test were used to measure changes in knowledge, confidence and use due to the intervention video. Please feel free to take the survey below and select Level 2 if you would like to see what this looked like.

Link: https://oregon.qualtrics.com/jfe/form/SV_2uycbqHnZwrGF5I

Materials

The only material used was the 10-minute video intervention (the toolkit) between the pretest and post-test of the survey. Here is a link to the video: <https://www.youtube.com/watch?v=JIIrivNbfv0&t=1s>. The goal of the video was to summarize CBT, the Yuck Diagram, ERP, and DBT, to change participant's

knowledge, confidence, and use of the material. The figure below represents an outline of the material covered.

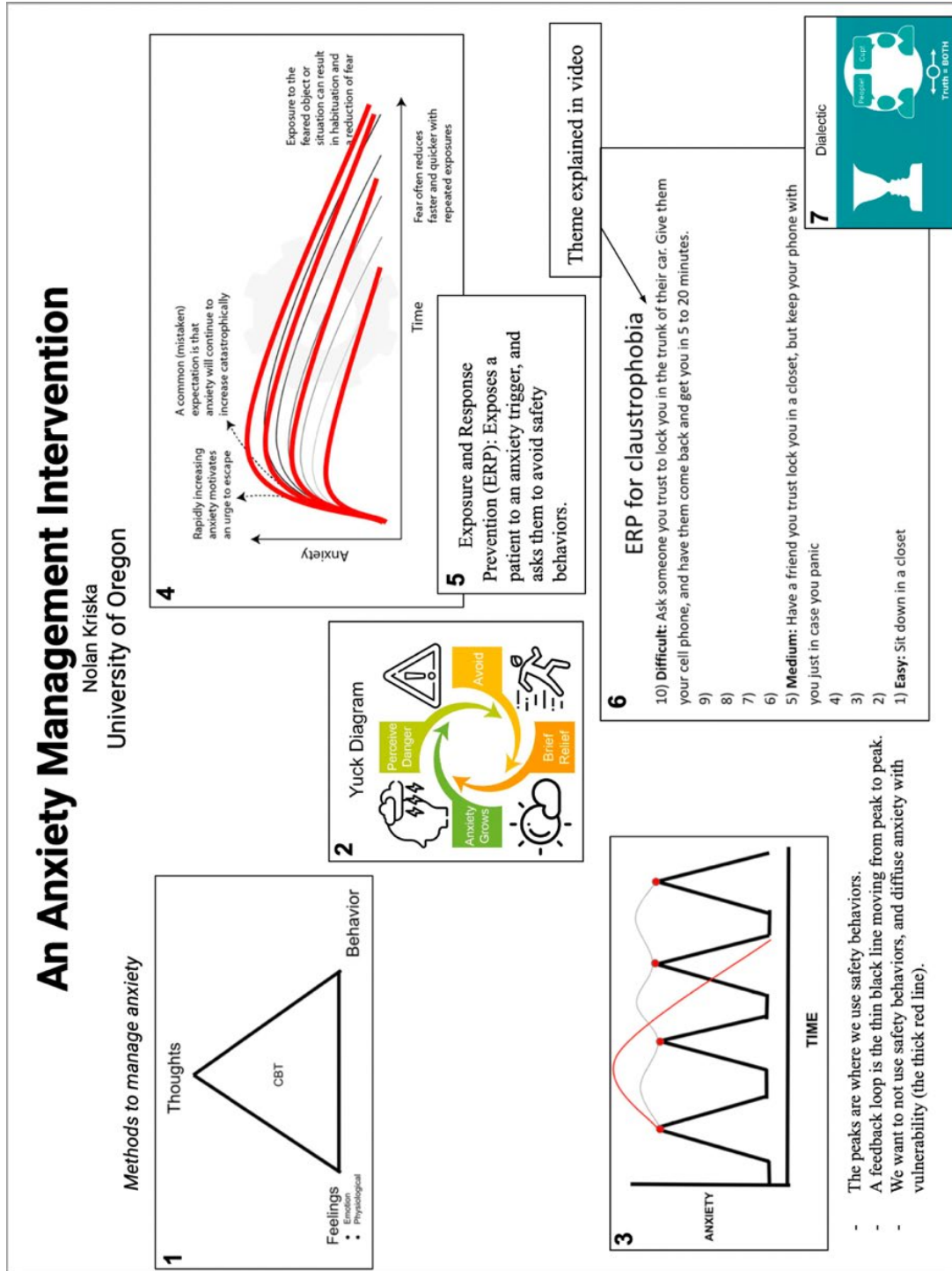


Figure 4: Outline of video content used as the intervention in this thesis's study.

Video Summary

The video started with an introduction to CBT, like the one described in the literature review. CBT says feelings like anxiety can be indirectly changed through thoughts and behaviors. Thoughts, also known as cognition, include a wide variety of content, including rumination and problem-solving. Behaviors are actions like avoidance but can also be a part of rumination if the action is a repeated behavior (this is known as habituation and is a cognitive behavior). Emotions are classical feelings like happiness and sadness and physiological sensations like sweaty palms and a pounding heart. Feelings cannot be directly changed, but thoughts and behaviors can be directly changed through practice and effort.

I discussed how anxiety perpetuates itself via the yuck diagram. The yuck diagram tells us that anxiety starts when we perceive danger. As a result of seeing danger, we avoid the danger and find brief relief. When anxiety grows again, the cycle continues. The negatives of getting caught in this loop are that people vulnerable to anxiety become dependent on safety behaviors. To break away from relying on safety behaviors, people could expose themselves to the perceived danger (not real danger) and allow their anxiety to persist. Eventually, anxiety will reduce to normal levels. The goal is to build a relationship with anxiety. The benefits of this strategy are that the next time people expose themselves to their anxiety, they already know what anxiety feels like. Confidence in handling anxiety grows, and over time it leads to a gradual reduction in the anxiety response. Anxiety's impact becomes less and less until there is no urge to partake in a safety behavior. Boredom of anxiety, confidence in dealing with it, and desire to do more in life than repeat safety behaviors are the main reasons this process

works. There is no linear path to building resilience to anxiety, and a relationship with it. There will be times when anxiety surpasses what you thought possible, and that is okay because that is the new high. Moreover, the next time this happens, you have been there before, and you've overcome it.

Then I discussed ERP. To find what you are anxious about, learn how to expose yourself to the perceived danger and develop the resilience needed to manage your anxiety response, use ERP. This therapy breaks down a variable that you are anxious about, like claustrophobia, and makes it something you can work through. From what I learned in my intensive outpatient program, an expert is helpful when planning ERP because it is about building a tolerance to discomfort and avoiding danger. An expert might help a patient narrow down a theme they are vulnerable to, which happens to be claustrophobia. Then, they make a ranked list of one through ten anxiety-provoking actions to test practice discomfort under the theme of claustrophobia. A one on the list is easy, and a ten would most likely induce a panic attack; experts ask patients to practice in the range of five and seven. A hypothetical example for a one could be sitting down in a closet. A five could be having a friend you trust lock you in a closet, but you are allowed to keep your phone. And a ten might be having someone you trust lock you in the trunk of a car, with no cell phone, and have them come back anytime between 5 and 20 minutes. As a patient gets comfortable practicing, the six on the list moves to a five. Similarly, the ten moves to a nine when practicing lower numbers because it exists in the overall relationship with anxiety. Then nine moves to an eight and a seven, and suddenly the patient can be vulnerable and still able to manage their anxiety.

The last thing covered in the toolkit is DBT, a therapy used to tackle particularly challenging thoughts. DBT takes two seemingly opposing views and says both can exist and be true simultaneously. For example, I am excellent at managing anxiety, or I am broken, and it changes daily. DBT says you can have both ideas simultaneously, and both are true. F. Scott Fitzgerald famously wrote: “The test of a first-rate intelligence is the ability to hold two opposing ideas in mind at the same time and still retain the ability to function. One should, for example, be able to see that things are hopeless yet be determined to make them otherwise”. A more salient example might be that a patient vulnerable to suicidal ideation might think that suicide is good or bad. DBT says that thinking in one or the other terms perpetuates ideation inside the yuck diagram. Again, both can be true, and maybe they can lead to a better question. For example, when these thoughts come on, do you like the person you are? Are you avoiding any thoughts through safety behaviors? If so, what thoughts are you avoiding? What would a one look like on an ERP scale, versus a five and a ten?

Creating habits through ERP, to avoid the perpetual yuck diagram, changes cognition and behavior. Through changing cognition and behavior, feelings can change, and responses to anxiety can become manageable. CBT teaches us that long-term management of anxiety is possible. And DBT teaches us that there is no content too challenging to not fit under the umbrella of CBT.

Measures

I asked participants to take the GAD-7 measure in this study. If people wanted to participate more, they could take a pre-survey that had a total of 14 items (questions) on knowledge, confidence, and use. There were 5 knowledge questions, 4 confidence questions and 4 use questions. One knowledge question was to fill in the blank and the rest were multiple choice. All the confidence questions were on a scale of 0 to 4. All the use questions were dichotomous, with options of yes or no. Participants were then asked to watch a recorded 10-minute intervention. Finally, the same nine questions were given as a post-survey.

Participants

There were 29 participants who answered the GAD-7 by taking Level 1. 14 of those participants also took the pretest and posttest by taking Level 2. All the participants were undergraduate students at the University of Oregon.

Results

GAD-7 for all participants

29 undergraduate students at the University of Oregon completed the GAD-7 survey. A score of 0-4 indicates minimal anxiety, 5-9 is mild anxiety, 10-14 is moderate anxiety, and 15-21 is severe anxiety (see figure 5). 3 participants had minimal anxiety, 18 had mild, 4 had moderate and 4 had severe (Mean [M] = 8.62; Standard Deviation [SD] = 4.55).

Question 3 had the largest mean (M = 1.75), “Worrying too much about different things”. The question with the lowest mean was question 5 (M = 1.13), “Being so restless that it is hard to sit still”. The question with the highest standard deviation (spread between responses) and the highest variation was question 1 (SD = 1; V = 1), “Feeling nervous, anxious or on edge”. At least one respondent was experiencing each problem listed nearly every day (Max = 3 for all questions). At the same time, at least one respondent did not experience each problem listed (a score of 0), excluding question 3 (Min = 0 for all questions excluding #3).

GAD-7 Anxiety Test

Over the <u>last two weeks</u> , how often have you been bothered by the following problems?	Not at all	Several days	More than half the days	Nearly every day
1. Feeling nervous, anxious, or on edge	0	1	2	3
2. Not being able to stop or control worrying	0	1	2	3
3. Worrying too much about different things	0	1	2	3
4. Trouble relaxing	0	1	2	3
5. Being so restless that it is hard to sit still	0	1	2	3
6. Becoming easily annoyed or irritable	0	1	2	3
7. Feeling afraid, as if something awful might happen	0	1	2	3

Column totals _____ + _____ + _____ + _____ =
Total score _____

If you checked any problems, how difficult have they made it for you to do your work, take care of things at home, or get along with other people?			
Not difficult at all	Somewhat difficult	Very difficult	Extremely difficult
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Source: Primary Care Evaluation of Mental Disorders Patient Health Questionnaire (PRIME-MD-PHQ). The PHQ was developed by Drs. Robert L. Spitzer, Janet B.W. Williams, Kurt Kroenke, and colleagues. For research information, contact Dr. Spitzer at ris8@columbia.edu. PRIME-MD® is a trademark of Pfizer Inc. Copyright© 1999 Pfizer Inc. All rights reserved. Reproduced with permission

Scoring GAD-7 Anxiety Severity

This is calculated by assigning scores of 0, 1, 2, and 3 to the response categories, respectively, of "not at all," "several days," "more than half the days," and "nearly every day." GAD-7 total score for the seven items ranges from 0 to 21.

- 0–4: minimal anxiety
- 5–9: mild anxiety
- 10–14: moderate anxiety
- 15–21: severe anxiety

Figure 5: GAD-7 Anxiety Test

Total GAD-7 results

GAD-7	
Mean	8.62
SD	4.55
Minimal (0-4)	3
Mild (5-9)	18
Moderate (10-14)	4
Severe (15-21)	4
Impact of anxiety	
Mean	2.103448276
SD	0.488790606
Have they taken this before	
Yes	1
No	28

Figure 6: This thesis's study results of the GAD-7

In the next part of the GAD-7, as hypothesized, anxiety impacted this sample ($M = 2.1$; $SD = 0.49$). The impact of anxiety was not difficult at all for 1 respondent (a score of 1), somewhat difficult for 25 respondents (a score of 2), very difficult for 2 respondents (a score of 3) and extremely difficult for 1 respondent (a score of 4). 1 participant had taken the GAD-7 before, and 28 hadn't.

GAD-7 for the 14 participants who took the pretest and posttest (Level 2)

Out of the 29 UO undergraduate students that took the GAD-7, only 14 also took the pretest and posttest (which measured changes in knowledge, confidence and

use in response to a 10-minute video intervention). Of those 14, 2 participants had minimal anxiety, 9 had mild, 1 had moderate and 2 had severe ($M = 8.29$; $SD = 4.1$).

As hypothesized, anxiety had an impact on this sample ($M = 2.21$; $SD = 0.57$). The impact of anxiety was somewhat difficult for 12 respondents (a score of 2), very difficult for 1 respondent (a score of 3) and extremely difficult for 1 respondent (a score of 4). All 14 participants hadn't taken the GAD-7 before.

GAD-7 results, for Level 2 participants

GAD-7 for participants who took level 2	
Mean	8.285714286
SD	4.410277707
Minimal (0-4)	2
Mild (5-9)	9
Moderate (10-14)	1
Severe (15-21)	2

Impact of anxiety	
Mean	2.214285714
SD	0.578934224

Have they taken this before	
Yes	0
No	14

Figure 7: This thesis's GAD-7 results, for participants who selected Level 2.

Pretest and Posttest

As hypothesized, all the outcomes improved at posttest. Knowledge changed directionally between pretest ($M = 2.86$; $SD = 1.29$) and posttest ($M = 3.36$; $SD = 0.84$) though not significantly, $t_{(13)} = 1.99$, $p = .068$ (a t test was used to identify statistical non-significance). Confidence improved significantly at posttest ($M = 2.321$; $SD = .675$) compared to pretest ($M = .964$; $SD = 1.13$), $t_{(13)} = 4.51$, $p < .001$. Use improved significantly at posttest ($M = 1.696$; $SD = 0.297$) compared to pretest ($M = 1.321$; $SD = 0.372$), $t_{(13)} = 3.606$, $p < 0.003$.

Individual items

The significance of individual knowledge items cannot be tested because of the design of this measure. For confidence, all items were significant ($p < .05$). For use, all items were significant ($p < .05$) excluding the question on DBT, which was directionally improved but not significant ($p = .165$).

Effect Size

Cohen (Linehan, 2018) suggested that $d = 0.2$ be considered a 'small' effect size, 0.5 represents a 'medium' effect size and 0.8 a 'large' effect size. Knowledge had a medium effect size ($d = 0.532$), confidence had a large effect size ($d = 1.206$), and use had a large effect size ($d = 0.964$). There were 14 responses, all of which were from students at the University of Oregon (see figure below).

Pretest and posttest results

	Pretest		Posttest		t-test	p	Cohen's D
	Mean	SD	Mean	SD			
Knowledge	2.857	1.292	3.357	0.842	1.989	0.068	0.532
Confidence	0.964	1.130	2.321	0.675	4.512	<.001	1.206
Use	1.321	0.372	1.696	0.297	3.606	0.003	0.964

Figure 8: Data analysis of results from Pretest and Posttest

Discussion and Limitations

Increasing the availability of anxiety management tools, and improving those tool's efficacy, is the future direction for research, according to Robinson (2013), Craske (2014), Abramowitz (2019) and Hezel (2019). I increased the availability of these tools by creating a video explanation of some intervention material. I also tried to improve the efficacy of this material by including a holistic set of interventions. Unfortunately, as stated in the results, few participants chose to do Level 2, so its efficacy can only be applied to the respondents.

Using accurate communication was challenging. This thesis is supposed to make people aware of anxiety management interventions. However, when people hear the word intervention, they tend to think of an alcoholics anonymous meeting. That is not what intervention means in the context of anxiety management. What it means to researchers like Hezel (2019) and Abramowitz (2019), is a tool for managing anxiety. In this context, a holistic set of interventions is a toolkit. In the future, more research should be done on how to communicate the value of anxiety management interventions to an audience that has no knowledge of psychology research.

I also used different messages to recruit people to take the survey, and that variable had an unknown impact. For example, during an earlier round of recruiting, I wrote, "If you want to get it [the survey] done quick, do level one. If you want to learn about anxiety management interventions, do Level 2". As a result, most of these participants took Level 1. I had to adjust, so during a later round of recruiting, I said, "If you participate in Level 2 or 3, the second survey you take will be about a bunch of info you probably don't know yet, so you can go through it quickly. Then, you'll watch a

video and take the same survey, but you'll know the info on it". I told participants they could go through the first survey quickly, which may have impacted some results.

When writing this thesis, one of my goals was to share as much of my IOP experience as possible in a 10-minute intervention video. However, there were many parts of my experience I could not share, including a variety of social learning, expert advice, and ERP practice. OCD-specific group sessions and one-on-one sessions were one of the most important parts of how I learned to manage my anxiety. Seeing others with OCD led me to believe in the potential of the anxiety management tools provided. The fact that there were no group discussions in this thesis likely lessens the tools comprehensiveness.

Further limitations

Literature review

- I did not include evidence to support the Yuck Diagram or goal setting in the literature review.
- The literature review could have been organized better, to help the reader and reduce confusion.
- A more extensive analysis of the tools could have been done.
- I could have consulted experts earlier than the defense to find better citations.

Survey & Intervention

- I asked 500+ undergraduate UO students to take this thesis's survey sometime in the first three weeks of Spring term 2022. I knew some of those people, and others were in my classes. As a result, whoever responded to the survey had a

personal interest in me, or in this information, so the findings cannot be generalized to the larger UO population. The findings can only reflect the students that responded.

- I could have sent my survey to more people sooner.
- I decided to not collect video interviews for my thesis because it would not have contributed to the findings in a significant way. Only two people scheduled the Level 3 interviews, and I didn't have questions that would contribute to the results. This information would be useful in a future paper, but for now, video interviews and the analysis of video interviews were not included in this thesis.
- I couldn't contact participants after they took the survey because of a failed scheduling link, so I pivoted to have participants email me directly if they chose Level 3. Unfortunately, the pivot didn't help, and as a result, I cut Level 3.
- I did not include goal setting or holistic self-care in the survey or the intervention video.
- I could not have included the GAD-7 because a baseline test of anxiety is not the focus of the research.
- I could have designed the survey so that the data would've been more focused on the toolkit video instead of the GAD-7 results.
- Having people take the same survey twice in a row may have led them to not finish the survey out of frustration.
- The summary of anxiety management tools in the video was not verified by an expert.

- Doing the anxiety management intervention in person might have shown interesting results.
- Maybe a survey isn't the best medium for this information.
- I could have chosen more proven variables than knowledge, confidence, and use.
- I added in 0's for unmarked responses in the use questions, because the untouched numerical scale shows a 0.
- I was not able to walk subjects through an ERP experience.

Future Direction of Research

If I were to continue to work on the study in this thesis, the first thing I would do is to figure out better variables to replace knowledge, confidence, and use. These variables would likely be proven to be an effective measure for anxiety management interventions in other credible studies. Then I would do research to see if there were other interventions I could add to the toolkit. I would also improve my description of DBT in the video, and how it is proven to be particularly effective in combating challenging thoughts like suicidal ideation. Goal setting and the yuck diagram would need to be added to the literature review, and better defined in the video. Finally, I would address all the limitations mentioned above.

Future research directions mentioned in the literature review include increasing the availability of anxiety management interventions and maximizing the efficacy of individual and multiple interventions. Another future research direction could be how to captivate an audience in need of anxiety management tools. TikTok, HBO, Audible, Spotify and YouTube all compete for time. Even if students recognize how anxiety inhibits their productivity, they may not want to spend time learning how to use tools because they are captivated by something else. Why this happens, and how to bypass it to help people help themselves, is a challenging subject that does not lie within the scope of this thesis.

Assumptions

If there were empirically proven benefits for a holistic set of interventions as broad as the one described in this thesis's study, we wouldn't know which tools to use and which not to use to improve the efficacy of the toolkit. I chose CBT, DBT and ERP as the tools for this thesis's research because they worked for me, in my IOP, and that is the definition of confirmation bias. However, in Robinson (2013) and Craske (2014), they say this information needs to be made more available. So, I decided to make assumptions to fit my hypothesis and research model, and I documented the biases involved in the assumptions.

Assumption number one is that OCD is on a spectrum of anxiety, and everybody exists on that spectrum. Since CBT, ERP and DBT are proven to be effective at managing anxiety, they will also work for people without a formal diagnosis. Assumption number two is that proactively managing anxiety has massive health benefits. Though it is hard to gauge this, managing anxiety when it is a problem has huge health benefits according to Robinson (2013), Arntz (2000) and Foa (1986). Assumption number three is that people are not entirely aware of how anxiety impacts them. Assumption number four is that presenting these materials will help people become aware of their anxiety. Assumption number five is that the information presented in the survey is a simplified version of anxiety management interventions. Though my holistic intervention is probably missing many pieces, expert analysis and feedback, the survey represents a first step towards making a holistic anxiety management intervention plan more available to the public. Assumption number six is that this holistic, anxiety management toolkit is a part of a larger holistic mental health

plan, like mentioned in the introduction. Combining this toolkit with healthy eating habits, sleep habits and social habits will likely improve the efficacy of the anxiety management toolkit. Assumption seven, is that people will become more aware of their anxiety, and proactively manage it, if they know more tools and interventions.

There is a massive amount of bias that exists in these assumptions. The most prominent bias is likely generalization. For example, I state that because ERP works for OCD, it will not only help patients without OCD manage anxiety but will also help people manage their anxiety even when they don't know they have it. Another bias that impacts these assumptions is confirmation bias because I am taking my experiences and relating them to a whole set of research. For example, I am only using three anxiety management interventions instead of the much larger set of available tools. Other biases include anchoring, availability heuristic, illusory correlation, egocentric, and self-assessment. Further research must be done to reaffirm or disapprove assumptions made, so that biases can be separated from the thesis.

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