RATIONAL EMOTIVE BEHAVIOR THERAPY FOR DEAFBLIND INDIVIDUALS WITH PROGRESSIVE VISION LOSS

A dissertation submitted in partial fulfillment
of the requirements for the degree of

DOCTOR OF PSYCHOLOGY

to the faculty of the

DEPARTMENT OF PSYCHOLOGY

of

ST. JOHN’S COLLEGE OF LIBERAL ARTS AND SCIENCES

at

ST. JOHN’S UNIVERSITY
New York
by
Chelsey Laurito

Date submitted: ________________

Date approved: ________________

____
Chelsey Laurito

____
Dr. Raymond DiGiuseppe

ABSTRACT

RATIONAL EMOTIVE BEHAVIOR THERAPY FOR DEAFBLIND INDIVIDUALS WITH PROGRESSIVE VISION LOSS

Chelsey Laurito

Deafblind individuals with progressive visual conditions are presented with the challenge of adjusting to the gradual loss of sight over time and the social, psychological, environmental, and communicative implications relative to that process. Mental health treatment for these individuals is not widely researched due to the lack of homogeneity in the deafblind population; therefore, exploratory studies are necessary. Rational Emotive Behavior Therapy (REBT) is an evidence-based treatment that has successfully addressed a range of symptoms in many psychological and medical diagnoses but has not been researched with individuals who are deafblind. In this multiple baseline design study, the researcher delivered a six-week REBT intervention to investigate its effect on symptoms of emotional distress, rational/irrational beliefs, and acceptance and adjustment towards vision loss. The study occurred during a global pandemic (COVID-19) and was therefore conducted via telehealth. The intervention resulted in improvement for two out of the three participants, with little improvement observed in the one participant likely due to confounding variables outside of the study's control. Additionally, results were maintained one month after the intervention was completed. These findings contribute to the research on REBT and support the need for more research using REBT with individuals who are deafblind.

ACKNOWLEDGEMENTS

My deep gratitude, love, and appreciation goes to my parents for supporting me throughout my personal, educational, and professional journeys. I have never been one to follow the straight and narrow path, so I cannot imagine how tough it has been to watch and listen to my emotional outcries when I have not felt strong enough to endure some obstacles. The foundation that they have built for my siblings and me has taught me to be patient, never stop learning, trust in the process, trust in myself, and address problems with honesty, forgiveness, and kindness. I am here because of them, and part of them will always be with me.

Secondly, I would like to thank my siblings for tolerating me as a sister, ha! Without my older sister and my younger brother, I would not have been fortunate enough to be the middle child (jokingly). In all honesty, my siblings and I have been there for one another our entire lives, and I cannot express how thankful I am for them. To my sister in-law, I cannot thank her enough for helping me navigate my frustrations with writing, editing, and utilizing Microsoft programs. She has been a lifesaver!

My appreciations extend from our immediate family to my extended family, including my maternal grandparents, paternal grandparents, brother-in-law, aunts, uncles, and cousins. I hope that I continue to make them proud. While reflecting on the family members who are no longer here on earth, specifically my maternal and paternal grandparents, I feel their love and presence every day. Throughout my life, they have wanted to be there for me and to attend major events such as softball games, dance recitals, graduations, and so on. I am sad that they are not around to celebrate in person, but I know that they will be celebrating elsewhere.

Third, I would like to thank my fiancé who has loved me unconditionally from the moment we met. He entered my life at a time when I needed him the most, to make me laugh, to go on adventures, and to hold my hand (or rub my back) while writing this dissertation. Education has been my focus for many years, putting love on the backburner, but our love was something I could never dismiss. From the moment he helped me study for an exam on our first "date," I knew he was something special.

Fourth, I would like to thank my friends from various aspects of life (childhood, high school, St. Francis University, Florida State University, St. John's University, softball communities, dance communities, and general fitness communities) for helping me stay emotionally, mentally, and physically healthy. They have all imprinted something special in my heart that I will cherish forever. In addition, I would like to thank colleagues who work in education, Deafblind rehabilitation, and psychology for being available to bounce ideas off of and to send resources when I needed help. Specifically, I would like to than Erin Quinn who volunteered her time as my American Sign Language Interpreter throughout the dissertation process. She had an important role in this project and is also a dear friend of mine.

Next, I cannot recognize Dr. Raymond DiGiuseppe enough for his mentorship throughout my time at St. John's University and while working on this project. He has taught me a lot about rational emotive behavior therapy in addition to other evidenced based treatments that I hope to utilize and develop my skills throughout my professional career. I would only be lucky if I had the opportunity to continue learning from and working with him in the future. Furthermore, my thanks extend to my entire dissertation committee. Dr. DiGiuseppe, Dr. Mark Terjesen, and Dr. Angela Mouzakitis provided me support, flexibility, and insight while developing this project during a challenging year not only academically but globally with the Coronavirus pandemic. Additionally, this dissertation could not have been done without the three individuals who volunteered their time to participate in my study. Their effort and time dedicated to the work done in this project helped make it successful.

Last but not least, I would like to thank God for giving me the strength and health to complete this dissertation. When I had doubts, I could always turn to him. When I needed help, he guided my support system outlined in this acknowledgment section to be there for me, and I will be forever grateful!

TABLE OF CONTENTS

Acknowledgements……………………………………………………………………..ii

List of Tables…………………………………………………………………...…..vii

List of Figures……………………………………………………………………….viii

Introduction…………………………………………………………………………..1

Deafblindness………………………………………...................................2

Psychosocial Implications……………………………..6

Rational Emotive Behavior Therapy………………………………........................9

Present Study and Hypotheses……………………………….........................13

Method……………………………………………...…………………………14

Experimental Design……………………………………………………………..14

Participants………………………………………………………………………15

Setting………………………………………………………………………………19

Measures…………………………………………………………………………19

Treatment Integrity and Level of Knowledge……………………………………24

Procedure……………………………………………….........................25

Results……………………………………………......................................27

Data Analysis…………………………………………………………….…27

Outcome Questionnaire (OQ-45.2)………………………………...…………28

RIBS Progressive Blindness Scale………………………………………….…...32

Acceptance and Self Worth Adjustment Scale (AS-WAS)……….……………37

Discussion……………………………………………………………………….42

Strengths, Limitations and Directions for Future Research…………………….47

Implications for Practice in School Psychology……………….......................................51

Conclusion………………………………………………………………….52

Appendix A: Informational Email about the Research Study…………………………...54

Appendix B: Demographics Form…………………………………………………….55

Appendix C: Consent Form…………………………………………………………...57

Appendix D: Treatment Manual……………………………………………………59

Appendix E: The Outcome Questionnaire (OQ-45.2)……..……………………………65

Appendix F:19 Item Acceptance and Self-Worth Adjustment Scale……………………70

Appendix G: RIBS-Progressive Blindness Format………………………………………73

References…………………………………………………………………………..75

LIST OF TABLES

Table 1. *Demographics Questionnaire*………………………………………………………..21

Table 2. *Descriptive Statistics: Mean, Median, Standard Deviation, and Range*……….40

Table 3. *Effect Size: Non-Overlapping Pairs (NAP)*……………………………………….41

LIST OF FIGURES

Figure 1. *Scores on the Outcome Questionnaire 45. 2- Baseline, Intervention, and Follow Up*……………………………………………………………………………….…...31

Figure 2. *Scores on the RIBS-Progressive Blindness IB Subscale- Baseline, Intervention and Follow Up*…………………………………………………………………………...33

Figure 3. *Scores on the RIBS-Progressive Blindness RB Subscale- Baseline, Intervention, and Follow Up*…………………………………………………………………………...36

Figure 4. *Scores on Acceptance & Self-Worth Adjustment Scale- Baseline, Intervention, and Follow Up*…………………………………………………………………………...39

Introduction

The inclusion of individuals who are deafblind in therapy research is limited, and consequently, many clinicians are reluctant to assess, treat, or intervene with this population as the evidence-based methods have not included this population. Deafblindness does not have to limit one's experience of the world, nor does it lead to adverse psychosocial events. Instead, the current study's purpose is to highlight the potential negative implications of deafblindness and expand the literature currently available inclusive of this population.

Dual sensory loss/deafblindness is a rare condition described as adversely affecting one's overall emotional well-being and self-concept (Bodsworth et al., 2011; Dammeyer, 2012). Although dual sensory loss includes several medical conditions, the present study focuses on individuals with progressive visual conditions (National Eye Institute, 2019). Given the nature of progressive vision loss, individuals must adjust to their vision loss over time, which can affect their access to social and leisure activities, vocational opportunities, communication, and physical wellness (Bodsworth et al., 2011; Dammeyer, 2012). Research on the use of school-based services from certified orientation and mobility specialists, teachers of individuals with visual impairments, teachers for the Deaf, and special education teachers have been found as protective factors that buffer the effects of the progressive sensory loss over time (Bodsworth et al., 2011; Zatta & McGinnity, 2016). Training from these professionals includes compensatory skills (e.g., language and braille), concept development, vocational skills and planning, independent living skills, technology, advocacy skills, social skills, curriculum support, and orientation and mobility (Bodsworth et al., 2011; Zatta &

McGinnity, 2016). However, due to the nature of the sensory losses, services might not be accepted or consistently provided; therefore, later in life, the individuals are required to learn new skills to function independently (National Center on Deaf-Blindness, 2020; Zatta & McGinnity, 2016). State, federal, and private agencies support these individuals in post-secondary school and are provided in various formats such as in-home and residential instruction (McDonnal & Cmar, 2019). The amount and frequency of training depend on various factors (e.g., funding or degree of sensory losses); therefore, it is essential to effectively use the time spent in these various services (McDonnal & Cmar, 2019; Zatta & McGinnity, 2016). Because research has shown that individuals with progressive vision loss experience significant emotional and social distress, effective intervention for psychological challenges may be necessary throughout their lifetime. Psychological interventions such as psychotherapy or counseling might be useful in supporting educational and rehabilitation services while also working on emotional and social dysfunction to live a more healthy and independent life (Bodsworth et al., 2011).

Deafblindness

For the study's purposes, descriptions of deafblindness and other conditions primarily reflect educational and federal definitions. However, deafblindness is not a homogenous population. It is an umbrella term for a broad group of individuals that may share diverse identities associated with different cultural/ethnic groups. The deaf part in the word deafblind(ness) might include members of the Deaf culture (Dunn & Andrews, 2015; Lane, 2005; National Federation of the Blind, 2015). The Deaf culture in the United States primarily utilizes American Sign Language (ASL), shares a specific set of beliefs, customs, values, and knowledge, and identifies as members of the minority culture (Lane, 2005). The English definitions of deaf and hard of hearing describe a larger group of individuals and are not specific to members of the Deaf community (Lane, 2005). In the scholarly literature, one can differentiate between using a capital D for Deaf, meaning a Deaf cultural group member, and using identify-first language (i.e., Deaf individual not an individual who is Deaf) (Lane, 2005). Person first language is often emphasized as the golden standard when describing individuals with disabilities, but members of the Deaf community have stressed the importance of identity first; therefore, it is essential to confirm with the person how he/she/they wish to identify (Dunn & Andrews, 2015; Lane, 2005; National Federation of the Blind, 2015). In the community of blindness and visual impairments, many have argued that their community is not necessarily a cultural group (National Federation of the Blind, 2015). Consequentially, the usage of capital letters in the word deafblind is not consistently observed. Throughout the paper, the author chose not to capitalize deafblind so that its usage includes members who identify or do not identify with a specific cultural group or community.

Dual sensory loss, otherwise known as deafblindness, is defined as the combination of legal blindness and a chronic hearing impairment where speech cannot be understood with amplification, including progressive vision and hearing loss, that causes "extreme difficulty in attaining independence in daily life activities, achieving psychosocial adjustment, or obtaining a vocation" (29 U.S.C. § 1905 [2]). Moreover, according to the Individuals with Disabilities Education Act (IDEA), deafblindness is defined as "concomitant hearing and visual impairments, the combination of which causes such severe communication and other developmental and educational needs that they cannot be accommodated in special education programs solely with children with deafness or children with blindness [34 CFR 300.8(C)(2)] (IDEA, 2017). As stated in the definitions, many individuals considered deafblind are not totally blind or deaf but rather encompass a range of loss in both senses. Specifically, legal blindness is highlighted in the definition, and it does not mean totally blind; instead, it means having a central visual acuity of 20/200 or less in the better eye with correction, visual fields less than 20 degrees, or a progressive visual condition that leads to one or both conditions (American Foundation for the Blind, 2020). Common etiology associated with deafblindness includes CHARGE syndrome, Usher syndrome, Down syndrome, Norrie Disease, Stickler syndrome, Dandy-Walker syndrome, premature birth, age-related loss, trauma, and various other hereditary syndromes/disorders (Miles, 2018; National Center on Deaf-Blindness, 2020).

In 2019, The National Center on Deaf-Blindness (2020) identified approximately 11,335 deafblind children eligible to receive services through state deafblind projects. In contrast, only 1,606 students ages 3 to 21 were classified with deafblindness by the U.S. Department of Education (The National Center on Deaf-Blindness, 2020). Only about 1% were considered totally blind, with a profound hearing loss, and 87% have one or more additional disabilities (National Center on Deaf-Blindness, 2020). Recent statistics in adult populations were difficult to locate. However, one report indicated that in 2008 approximately 40,000 individuals were estimated to be deafblind, with an increase in aging adults' prevalence (Miles, 2018). Some researchers suspect that these numbers are underestimated because many conditions are progressive, and some individuals are not accurately identified (Dammeyer, 2012; National Center on Deaf-Blindness, 2020).

Accurate identification of individuals with deafblindness is difficult due to inconsistent definitions, assessments used, and individuals' cooperation (Dammeyer, 2012).

Research in dual sensory loss/deafblindness is not as widely pursued due to copious limitations, including etiology, heterogeneity in the disease/disorder, severity of loss, and unfamiliarity with the population (Dammeyer, 2015). However, literature concerning deafblindness is found in mental health research with individuals diagnosed with Usher syndrome and age-related deafblindness (Dammeyer, 2015).

Usher syndrome is considered one of the most common conditions that affect both hearing and vision (National Institute on Deafness and Other Communication Disorders, 2017). It is a hereditary condition thought to cause deafness in three to six percent of children who are deaf and hard-of-hearing (Ben-Rebeh et al., 2016; National Eye Institute, 2019). There are three types of Usher syndrome, including mild to profound hearing loss and a visual condition called retinitis pigmentosa (National Eye Institute, 2019). Retinitis pigmentosa (RP) is a condition in which an individual progressively loses vision over time, beginning with night blindness and a loss of peripheral vision (National Eye Institute, 2019). During the day, individuals may have no difficulty with their vision but will notice issues in dark environments (National Eye Institute, 2019). As the condition progresses, one will experience more noticeable peripheral loss, otherwise known as tunnel vision, which continues until it begins to affect the macula (National Eye Institute, 2019). At this point, central vision begins to deteriorate. RP's onset varies across the three types of Usher syndrome (National Eye Institute, 2019).

Usher syndrome I is defined as congenital, profound hearing loss or deafness, vestibular issues from birth, and progressive vision loss with an onset around age 10

(National Institute on Deafness and Other Communication Disorders, 2017). Individuals with Usher syndrome II experience moderate to severe hearing loss at birth and visual difficulties in early adolescence (National Institute on Deafness and Other Communication Disorders, 2017). Usher syndrome III, the rarest form of the three, presents with progressive hearing loss beginning in childhood and onset of vision loss beginning in teens (National Institute on Deafness and Other Communication Disorders, 2017). The variation of visual onset, hearing onset, severity, and progression rate make Ushers syndrome (I, II, and II) a complex condition.

Psychosocial Implications

Researchers have examined the influence of vision loss, precisely degenerative conditions, on psychological wellness and quality of life (Beaty, 1994; Dreer et al., 2005; Huebner, 2000; Karlsson, 1998; Kef, 2002; Leo et al., 1999; Lowenfeld, 1975; Tuttle & Tuttle, 2004; Waern et al., 2002). People with degenerative visual impairments often have more difficulty with acceptance/adjustment because the loss is gradual, episodic, and sudden (Leo et al., 1999; Roy & MacKay, 2002; Tuttle & Tuttle, 2004). According to Leo et al. (1999), the psychological picture is worse for individuals with these conditions because they are continuously adjusting to their loss, resulting in difficulty defining themselves and maintaining a purposeful life (Roy & MacKay, 2002).

Roy and MacKay (2002) explored self-perception and locus of control in individuals with visual impairments aged 18-34. Participants were asked to define their vision loss through self-reports using the following categories: blind, low vision, stable vision loss, or deteriorating vision loss (Roy & MacKay, 2002). Qualitative data was collected using the Twenty Statements Test (TST) with a follow-up discussion between the participants and researchers (Roy & MacKay, 2002). Participants questioned whether their visual impairment affected their identity (Roy & MacKay, 2002). The results indicated that individuals with deteriorating eye diseases and sudden vision loss described their disability more negatively (Roy & MacKay, 2002). All individuals stated that their visual impairment affected their identity (Roy & MacKay, 2002).

Similarly, Karlsson (1998) investigated the different degrees of visual impairment on psychological or emotional distress (anxiety, rumination, intrusive thoughts). The study included participants with low vision and total blindness aged 18-97 (Karlsson, 1998). The results indicated a significant difference between degrees of visual impairment and its effect on psychological or emotional distress (Karlsson, 1998). Individuals who were legally blind felt more depressed and experienced a decrease in pleasure and contentment in life (Karlsson, 1998). Both Karlsson (1998) and Roy and MacKay (2002) found evidence to support a greater risk of distress in individuals with degenerative conditions or sudden vision loss. Moreover, Tolman et al. (2005) explored age-related vision loss and found a strong predictor for depression, interpersonal conflict, isolation, or withdrawal. Age-related vision loss is more often degenerative and supports the previous studies that individuals with degenerative conditions are at an increased risk for psychological and emotional distress.

The onset of vision loss in degenerative conditions varies, beginning in late adolescence, which is why most studies include individuals 18 and older. However, vision loss challenges throughout a lifespan are apparent, and the effects of visual impairments in school-aged children have also been studied (Huurre & Aro, 2000; Kef, 2002; Konarska, 2007). Overall, this group of individuals displays fewer social experiences, fewer friends, more feelings of isolation and rejection, more bullying, and a more challenging time maintaining relationships (Huurre & Aro, 2000; Kef, 2002). Students aged 13-14 and 18-19 were included in a study examining self-esteem and emotional/behavioral difficulties (Konarska, 2007). Participants in the study reported being suspicious of others and fearful of the future. Furthermore, they had a strong sense of helplessness, interpersonal difficulties and reported experiencing a wide range of somatic symptoms (Konarska, 2007).

Moreover, the research states that individuals deafblind with progressive vision loss experience a high level of psychosocial burden and lower quality of life influenced by their ability to access and navigate the environment (Ellis & Hodges, 2013; Hogner, 2015; Huurre & Aro, 2000; Kef, 2002; Konarska, 2007; Wahl et al., 2013). As individuals progressively lose their vision, environmental demands are often perceived as dangerous beyond their abilities, and therefore, individuals avoid traveling (Wahl et al., 2013; Hogner, 2015; Ellis & Hodges, 2013). Avoidance is a common maladaptive coping mechanism used by individuals with degenerative conditions, but it is ineffective long-term with managing stress related to various life demands such as traveling (Wahl et al., 2013; Hogner, 2015; Ellis & Hodges, 2013). A study by Hogner (2015) explored psychological stress in individuals with Usher syndrome using various questionnaires. Two hundred sixty-two persons participated in the study between the ages of 17-79 (m = 51.53% female) (Hogner, 2015). The researcher explored functioning in six life domains and found that individuals experienced the most stress in orientation and mobility (Hogner, 2015). Another study by Ellis and Hodges (2013) described individuals with Usher syndrome's experiences in their community/culture, identity, and ability to navigate the world. These researchers found that depression happened in the areas of change (e.g., when vision changed significantly to where new skills were needed to live independently) and areas associated with mobility, such as using a cane or giving up driving (Ellis & Hodges, 2013). Next, the author explored a therapeutic model that could help individuals who are experiencing difficulties with adjustment or acceptance regarding deafblindness.

Rational Emotive Behavior Therapy

Research implementing cognitive behavior therapy(CBT) for deafblind individuals was not found after an extensive online search, but the use of rational emotive behavior therapy, a variation of CBT, was found in individuals with vision loss and individuals who are deaf or hard of hearing (HH) (Jalali, Moussavi, Yazdi, & Fadardi, 2014). Rational emotive behavior therapy (REBT) has been found to be effective in treating individuals with anxiety, depression, and a range of psychological disorders. Considerable outcome research supports the efficacy and effectiveness of REBT. Smith and Glass (1977), in their original meta-analytic review of psychotherapy outcome studies, concluded that RET (as Ellis called it then) was the second most effective psychotherapy after systematic desensitization. More than 350 REBT outcome studies appeared from the 1960s until 2001 (DiGiuseppe & David, 2015; DiGiuseppe & Doyle 2019 for a summary). More recent metanalytic reviews have focused on more selective studies with more stringent standards (David, 2014; David et al., 2018; Gonzalez et al., 2004; Sacks, 2004). As one of the original forms of Cognitive Behavior Therapies family (Hollon & DiGiuseppe, 2010), REBT differs in the belief that emotional disturbances come from faulty thinking about an event rather than the event itself (Gonzalez et al., 2004). Two types of evaluative beliefs are emphasized: irrational and rational beliefs (DiGiuseppe et al., 2014; DiGiuseppe et al., 2018; Gonzalez et al., 2004; Sacks, 2004). Irrational beliefs are rigid, illogical, self-defeating, have no empirical support, and interfere with people meeting their goals (Cristea et al., 2016). For example, the statement "my life is awful because I am losing my vision" exhibits catastrophic thinking not supported by evidence, and so the belief is irrational. On the other hand, rational beliefs are supported by evidence, considered logical, and a more flexible way of thinking (Cristea et al., 2016). For example, "losing my vision is sad, but I am strong, and I can handle it." Since progressive vision loss is most often irreversible, the current researcher believes this theoretical model is more relevant than other models.

REBT guides the individual through the process of identifying core irrational beliefs and then dispute them so that one can develop a more adjusted and healthy philosophy in life (Cristea et al., 2016; DiGiuseppe et al., 2014). Four irrational beliefs include demandingness, awfulizing, frustration intolerance, and global evaluations of self, others, and life worth (DiGiuseppe et al., 2018; Gonzalez et al., 2004; Sacks, 2004). Therapists utilizing REBT guide the individual seeking change through an assessment that recognizes and replaces irrational beliefs with more rational ones (DiGiuseppe et al., 2018; Gonzalez et al., 2004; Sacks, 2004). The assessment, otherwise known as the ABCDE model, is the basis of REBT (DiGiuseppe et al., 2018; Gonzalez et al., 2004; Sacks, 2004). Cristea et al. (2016) outlined the ABCDE as such:

1. A= Activating event(s)
2. B= Beliefs
3. C= emotional, behavioral, and physiological consequences

4. D=Dispute beliefs
5. E= Identify new effective beliefs

Cognitive, behavioral, and emotive techniques are used throughout REBT and are dependent on the individuals' needs (Cristea et al., 2016). These techniques include – but are not limited to – psychoeducation, exposure, virtual reality, problem-solving, diaphragmatic breathing, mindfulness, and homework (Cristea et al., 2016).

As previously stated, REBT has been explored with individuals who are deaf or hard of hearing and individuals who have a visual impairment but not with individuals who have dual sensory loss. Gough (1990) proposed RET (before the name was changed to REBT) as an exploratory therapeutic intervention with Deaf and HH individuals emphasizing the importance of understanding linguistic and communication differences (Gough, 1990). This paper proposed REBT as a new alternative to treatment rather than eliminating treatment options due to little research or preconceived biases of the difficulties treating individuals who are Deaf or HH (Gough, 1990). However, the paper did not propose the next steps for research despite its support for the treatment model.

Next, Jalali et al. (2014) conducted an experimental study on 60 individuals with age-related/adventitious blindness in Mashhad-Iran. Participants were randomly assigned to either the control or experimental group, with the experimental group receiving group REBT training (Jalali et al., 2014). The researchers found a significant increase in self-esteem in addition to a significant reduction in depression, anxiety, and stress for the experimental group receiving group REBT (Jalali et al., 2014). Despite some limitations to the study, the results support that REBT can help various conditions (DiGiuseppe et al., 2018; Sacks, 2004).

In another study, Kerongo (2020) used REBT to mitigate depression and enhance academic performance in deaf and HH adolescents (all said to have profound hearing loss) in Kenya. The researcher employed a quasi-experimental design with a control and experimental group that made up a total number of 64 participants ages 14 to 20 years old (Kerongo, 2020). Findings indicated a strong relationship between depression and academic performance, with communication as the most significant barrier leading to symptoms of depression (Kerongo, 2020). REBT significantly reduced these symptoms of depression among members of the experimental group.

Although REBT's effectiveness has not been studied extensively in deafblind, deaf, HH, blind, or visually impaired populations, it has been studied in improving the quality of life and mental health of individuals post-stroke, individuals infected with HIV/AIDS, aging populations, and cancer patients (Alvarez, 1997; Mahigir et al., 2012; Malkinson & Bar-Tur, 2019; Montgomery et al., 2017; Surilena et al., 2014). For example, Surilena et al. (2014) conducted a randomized, single-blinded clinical trial with women infected with HIV/AIDS receiving outpatient treatment in a hospital setting to target mental health and antiretroviral therapeutic adherence. In the experimental group, 80 participants received 8 sessions weekly made up of six individual and two group sessions (Surilena et al., 2014). Treatment lasted eight weeks long (Surilena et al., 2014). The results were positive, with an improvement in self-reported adherence compared to the control group and improvement in the overall mental health as reported by the Self-Reporting Questionnaire (SRQ-20).

Moreover, Mahigir et al. (2012) studied the influence of REBT experiences on pain and pain intensity with cancer patients in India and Iran. Eighty-eight patients were randomly divided into two groups, the control group and the experimental group. The experimental group underwent eight REBT sessions lasting approximately two hours each. Pain was assessed through the McGill Pain Questionnaire. At the end of the study, patients receiving REBT experienced reduced pain pretest to posttest, and the results corroborate other studies stating that REBT is an effective treatment option for many situations.

Present Study and Hypotheses

Considering the current literature, the researcher suspected that deafblind individuals with progressive vision loss would benefit from REBT based on its efficacy s identified in the literature. In addition, it is likely that deafblind individuals endorse a wide range of irrational beliefs related to their vision loss, the environment, themselves, and their life. This study explored the efficacy of REBT for deafblind individuals with progressive vision loss who experience significant emotional and social dysfunction by testing the following hypotheses.

First, there would be a clinically significant decrease in emotional dysfunction as measured by the Outcome Questionnaire 45.2 total score from baseline to intervention.

Second, there would be a significant decrease in irrational beliefs and a significant increase in rational beliefs towards blindness from baseline to intervention as measured by the RIBS Progressive Blindness Scale.

Third, there would be an increase in adjustment related to vision loss measured by the Acceptance and Self-Worth Adjustment Scale after participating in the intervention.

Method

Experimental Design

The present study used a non-concurrent single-subject multiple baseline design across three participants (Watson & Workman, 1981). This method includes collecting repeated measurements of each dependent variable during baseline condition (A) and intervention condition (B). In the present study, baseline condition (A) varied in length, and participants were assigned randomly to the various baselines. All of the participants' names were changed to protect their identities. Participant 1 (called Sharon) began the REBT intervention after three weeks of the baseline condition (A). After five weeks of the baseline condition (A), Participant 2 (called Rachel) received the REBT intervention, and finally, after seven weeks of the baseline condition (A), Participant 3 (called Dee) received the REBT intervention. The intervention condition (B) lasted six weeks long.

Multiple baseline designs have helped explore new psychological treatments or treatments with unique or rare populations (Wendel et al., 2015). This design is often associated with applied behavior analysis but has become more prevalent in school psychology, education, and medicine (Gage & Lewis, 2012; Michiels et al., 2016; Olive & Franco, 2008). Because REBT is already an established, evidence-based intervention with positive effects in many populations, a multiple baseline design study was chosen to look at the effect of this treatment with individuals who are deafblind (Cristea et al., 2016; DiGiuseppe et al., 2018; Jalali et al., 2014; Sacks, 2004).

Participants

Given the difficulty in obtaining a homogenous population, the author recruited individuals with specific criteria to limit confounding variables. Individuals with progressive vision loss, considered legally blind, and having at least a mild hearing loss were chosen because the research supports degenerative conditions as more complex in which to adapt (Ellis & Hodges, 2013; Hogner, 2015; Huurre & Aro, 2000; Kef, 2002; Konarska, 2007; Wahl et al., 2013). Moreover, individuals between the age of 18 and 75 were recruited because the onset of vision loss occurs variably.

The researcher employed a convenience sample using word-of-mouth throughout Nassau, Suffolk, Westchester Counties, and New York City's boroughs. An accessible email (Appendix A) with the researcher's contact information was provided to professionals working in vocational rehabilitation to distribute to their consumers. Four individuals (male = 1, female = 3) contacted the researcher to volunteer for the study and were screened for the inclusion criteria during a 1:1 intake session using the demographic questionnaire (Appendix B) and the Outcome Questionnaire (OQ-45.2) (Appendix E). The inclusion criteria of the study included: a diagnosis of a degenerative visual condition, legally blind, at least a mild hearing loss, and a score of 63 or higher on the OQ-45.2 Total Score. Participants were excluded from the study if they were involved in psychotherapy at the time of the study. It should be noted that the four willing participants already knew the researcher before the study because she has worked in deafblind vocational rehabilitation for several years and all of the individuals had a history of vocational training. Therefore, a level of rapport was already established with the individuals.

All four individuals met the criteria and were invited to participate in the research study and fill out the consent form (Appendix C). Furthermore, participants were informed that they would receive a $50 Visa gift card on the last day if they participated in the whole study. One individual (demographics: male, Usher syndrome I, profoundly deaf, and 31 years of age) dropped out of the study early during baseline phase (A); therefore, the researcher did not include his data in the current study. The other three individuals accepted into the study participated in the entirety of the baseline and intervention phases. The names of each person who participated in the study have been changed to protect their identity. As previously stated, the individual's identity should be respected; therefore, the researcher utilized the participants' preferred identities throughout the study.

Participant 1 (Sharon). Sharon is a 33-year-old who identifies as a Caucasian cis female who is single, never married, employed full-time, and a college graduate with a bachelor's degree. Sharon has a diagnosis of Usher syndrome Type II and is identified as hard of hearing. At the time of the study, she reported using but narrowed vision referring to peripheral vision loss associated with Usher syndrome II. Sharon reported that her hearing loss occurred around four years old, and she started losing her vision at approximately 19-years-old. Sharon utilizes bilateral hearing aids for communication, and she prefers a multi-modal multi-lingual approach using both American Sign Language (ASL) and spoken English. The researcher offered Sharon a sign language interpreter, but she reported feeling comfortable communicating with the researcher directly. The researcher, proficient in ASL, met Sharon's communication needs; however, Sharon was informed that an interpreter would be provided if she changed her mind. Our sessions were held in a quiet environment to eliminate excess background noise.

Sharon's visual needs were also considered throughout the intervention. She preferred a dark backdrop with little visual clutter, away from the window and fluorescent lighting. Moreover, Sharon requested that the researcher wear dark-colored clothing to see her hand signs with more ease. Throughout the study, materials were sent electronically to Sharon, which was her preferred method of written communication. By sending materials and forms electronically, Sharon adjusted the font size and color to meet her visual needs. Due to COVID-19 and Sharon's access to a scanner, Sharon took pictures of her homework and sent them back to the researcher via email.

Participant 2 (Rachel). Rachel is a 63-year-old Caucasian cis female who identified as married, unemployed, and a college graduate with a master's degree on the demographic questionnaire. Rachel has a visual diagnosis of glaucoma secondary to cataracts and Rubella Syndrome at birth. She identifies as hard-of-hearing with moderate hearing loss in the right ear (age-related) and profound congenital deafness in the left ear. At the time of the study, Rachel reported limited functional vision and could only see outlines of people and objects in the environment and high contrasting colors when close to her face. Rachel preferred using the voice-over feature on her assistive technology devices for print material, and so materials were sent in an accessible Word document. However, at times, Rachel requested the researcher read her the documents aloud and have the researcher fill in the information.

Rachels primarily spoke English, and she wears a hearing aid in her right ear to support communication. Rachel's hearing aid was connected to the computer via

Bluetooth so that the sound went directly to her ear. Since Rachel could not see the researcher through the computer, she requested sessions be held over the phone, which was respected.

Participant 3 (Dee). Dee is a 49-year-old Caucasian cis female who identified as single, never married, and a college graduate with a master's degree on the demographic questionnaire. At the time of the intake session, Dee was employed full-time, but four weeks into the baseline, Dee resigned from her job and was unemployed for the remainder of the study. Dee has a diagnosis of Retinitis Pigmentosa, but she explained that she was unsure if her diagnosis was linked to Usher syndrome. Vision loss occurred around the age of 14, and at the time of the study, she had useable vision but reported that her vision fluctuated daily. Also, Dee identifies as being Deaf from birth and a member of Deaf culture. Dee does not wear hearing aids or have a cochlear implant. Her primary language is American Sign Language, but she reads and writes in English. Once the researcher received Dee's interest in the study, she was contacted regarding the use of an interpreter. Dee preferred to use an interpreter to support the flow of communication but was willing to talk directly to the researcher to compliment rapport building. Before assigning Dee an interpreter, the researcher met with her 1:1 to discuss her interpreting preferences and any conflicts of interest (this was done before the intake session). Dee preferred to use an interpreter that she did not know and someone who had experience working with individuals who are deafblind. Before the intake session, the researcher and Dee agreed upon an interpreter that met her requests. During the intake session, time was allocated to build rapport as a team (Dee, the interpreter, and the researcher), set up communication rules, and discuss communication preferences.

Likewise, Dee requested a similar background set up with a dark backdrop absent of glare from the sun and fluorescent lighting. Moreover, she requested dark clothing for sign language clarity and contrast. Both the researcher and the interpreter followed Dee's environmental and communication preferences. Again, materials were sent electronically to Dee, which was her preferred method of written communication. The materials were adapted with inverted contrast (white print on a black background) and 20-point font size as requested by Dee. Homework was sent back to the researcher via email.

Setting

Originally, the study was supposed to take place inside each participant's home. However, in March 2020, New York State, along with the rest of the country, entered a lockdown due to the novel Coronavirus-19 (COVID-19) pandemic. At that time, the researcher adapted the study to meet the individuals' needs and the pandemic crisis. Instead, all the baseline and intervention sessions were held virtually through Zoom or on the phone.

Measures

Demographics. Individuals completed a demographic questionnaire that asked about themselves and appears in Appendix B. The information requested consisted of the individual's age, ethnicity, educational background, socio-economic status, visual and hearing diagnosis, history of rehabilitation services, and areas of difficulty in daily life. Depending on the individual's preferred method of written and verbal communication, the questionnaire was accessible in various formats (i.e., regular print, large print, braille, electronic file, ASL transcription, and English oral transcription). As described above, two participants requested an electronic copy of the questionnaire, and one participant requested the material read aloud over the phone (oral English transcription). The demographic information appears in Table 1.

Table 1

Demographics Questionnaire

Question	Sharon (1)	Rachel (2)	Dee (3)
Age	33	63	49
Sex	Female	Female	Female
Relationship Status	Single (never married)	Married	Single/ Never Married
Race	White	White	White
Highest Educational Level	Bachelor’s Degree	Master’s Degree	Master’s Degree
Employment Status	Full Time	Unemployed	Unemployed
Vision Diagnosis	Usher syndrome-2	Glaucoma and cataracts as a result from Rubella	Retinitis Pigmentosa
Age of Onset	19	Birth	14
Degenerative or Stable	Degenerative	Degenerative	Degenerative
Hearing Loss	Hard of Hearing	Hard of Hearing	Deaf
Age of Onset	4 years old	Left ear-59 years old; right ear-birth	Birth
Degenerative or Stable	Stable	Stable	Stable
Written Communication Preference	Electronic file	Electronic file	Electronic file
Primary/Preferred Language	Total Communication (English and ASL at the Same time)	English	ASL
Please describe your training experiences related to your vision and hearing loss	Orientation and mobility training, vision rehabilitation services, audiology services, and low vision services	Orientation and mobility training, guide dog training, vision rehabilitation, vocational training, audiology services, and low vision services	Orientation and mobility training, braille, assistive technology, vision rehabilitation, and audiology services

Note. Participants used an open-ended response to the question concerning training experiences; therefore, answers were shortened for the table by only including the type of training. The length of training was not provided by the participants.

Outcome Questionnaire (OQ-45.2). The Outcome Questionnaire (OQ-45.2) measures short-term changes in emotional disturbances and functioning across a wide variety of disorders (Lambert et al., 1996). The questionnaire consists of 45 items, assessing experiences during the past week that encompass the following areas: symptoms of emotional distress, interpersonal problems, social functioning, and quality of life (Lambert et al., 1996). The individual is asked to rate their responses using a Likert scale (4=Never, 3=Rarely, 2= Sometimes, 1 = Frequently, 0=Always) (Lambert et al., 1996). A total OQ-45.2 score and three subscales are calculated measuring symptom distress, interpersonal relations, and social role with the option to use an additional scale as a risk assessment (Lambert et al., 1996). Clinical cutoff scores are provided as a guideline for scores above normal limits and are listed as the following: Total OQ-45.2 score, 63 or higher; Symptom Distress, 36 or higher; Interpersonal Relations, 15 or higher; and Social Role, 12 or higher (Lambert et al., 1996). The OQ-45.2 has high reliability, good concurrent and construct validity, is sensitive to change, and presents differences in the patient from non-patient samples (Lambert et al., 1996). The OQ-45.2 appears in Appendix E.

Acceptance and Self-Worth Adjustment Scale (AS-WAS). The Acceptance and Self-Worth Adjustment Scale (AS-WAS) measures the unidimensional latent construct of adjustment to vision loss and is a shorter version of the Nottingham Adjustment Scale (NAS) (Tabrett & Latham, 2010). The AS-WAS consists of 19 items measuring esteem, attitude, locus of control, acceptance, and self-efficacy, and all the items are either phrased positively or negatively (Tabrett & Latham, 2010). Individuals are asked to provide answers using a four-point rating scale (strongly agree, agree, disagree, and strongly disagree) (Tabrett & Latham, 2010). The scale has good convergent and discriminant validity with good item fit (Tabrett & Latham, 2010). Researchers also found that the scale demonstrated good Cronbach Alpha reliability coefficients (0.85) and item (0.96) reliability coefficients with the NAS (Tabrett & Latham, 2010). The AS-WAS appears in Appendix F.

RIBS-Progressive Blindness. The RIBS-Progressive Blindness (RIBS-PB) is a scale that measures irrational and rational beliefs related to progressive vision loss and appears in Appendix G. The author and the author's mentor (an expert in REBT) adapted the scale as it was designed to be changed to address several conditions. The scale consists of 12 questions, five items measuring rational beliefs (RB), five items measuring irrational beliefs (IB), and two neutral items. Respondents are asked to rate their beliefs using a Likert scale of 1 to 5 (1=Strongly Disagree, 2= Disagree, 3= Neutral, 4= Agree, and 5= Strongly Agree). The RIBS-PB has not been validated, but the researcher had two professionals from both the REBT field and deafblind field to review the scale prior to administration. All of the professionals agreed that the scale addressed significant areas of need and covered the construct (irrational/rational beliefs) since it was adapted from the original RIBS. The original RIBS, known as the Exam Beliefs Scale-EBS, was an 8-item scale constructed to reflect the processes assessed by the Attitudes and Belief Scale (now ABS-2) to measure beliefs associated with an exam (Montgomery et al., 2007). Items were constructed based on four irrational beliefs (Demandingness, awfulizing, low frustration tolerance, and global evaluation/self-downing) and four rational beliefs (preferences and flexibility, realistic negative evaluations, frustration tolerance, and /self-acceptacnce) (Montgomery et al., 2007). The original scale was reviewed by a panel of experts in REBT who approved the face validity of the items, and several adaptations have been made over the years (Gavita et al., 2011). The adapted scale (RIBS-PB) for the current study appears in Appendix G.

Treatment Integrity and Level of Knowledge

Treatment integrity was not collected throughout the study due to unforeseen circumstances related to the coronavirus pandemic. Instead, a treatment manual was developed and followed during the sessions. The treatment manual used in the intervention was developed from a treatment guide for anxiety using Rational-Emotive Behavior Therapy (Cristea et al., 2016) and a treatment workbook for unhealthy emotions (Garcy, 2009). Both are available from this researcher upon request. The developed treatment manual was reviewed by the researcher's mentor, who was trained extensively in REBT, has published several articles and books, and chapters on the topic, and is a recognized trainer in REBT throughout the globe. Furthermore, the researcher also received training in REBT through doctoral-level courses and a 10-hour online certification training program plus a certification exam. The treatment manual was utilized throughout the intervention phase so that the researcher can assure that she has met the objectives for each session. The manual appears in Appendix D.

In addition to instruction in REBT, the researcher has been trained in a master's level graduate program in visual impairment, blindness, and deafblindness. The researcher has a master's degree in curriculum and instruction with dual concentrations in the teaching of students with visual impairments and orientation and mobility and is a certified school psychologist. The researcher's professional experiences supported the current research project.

Procedure

Recruitment for the study was done by word of mouth and through an accessible email describing the nature of the study. Individuals willing to participate were asked to contact the researcher to set up a 1:1 eligibility intake session. During the intake session, the researcher distributed the demographic questionnaire and outcome questionnaire and reviewed background information, including visual and hearing diagnoses. Inclusionary and exclusionary criteria were evaluated in the session to determine eligibility for the study. The three participants were given a letter describing the study, including the risks and benefits, in his/her preferred method of written communication (braille, large, print, color contrast, translation) and were asked to sign the consent form detailing their voluntary participation in the study. The participants were informed that personal information obtained from the study will be kept confidential and that personal information will be de-identified in a data file followed by the destruction of all paper materials. Lastly, the individual was informed that if he/she chose to discontinue at any time but wishes to find mental health support outside the study, he/she would be assisted in searching for providers.

Baseline. The baseline phase consisted of weekly meetings held virtually to distribute the progress monitoring scales. The participants were randomly assigned to baseline phases lasting either three, five, or seven weeks long. During this time, the researcher used the OQ-45.2, the RIBS-PB, and the AS-WAS to collect baseline data. A visual analysis was performed using the OQ-45.2 to determine the stabilization of the data before advancing onto the intervention. Criteria were established prior to the study based on the OQ-45.2 manual that data with a 14-point difference would determine a significant change (Lambert et al., 1996).

Intervention. The intervention phase lasted six weeks, one session a week for approximately an hour long. The REBT intervention was provided by the researcher using a treatment manual to ensure treatment fidelity. Homework was provided at the end of each session and reviewed at the beginning of the following session. Each week, data was collected on the OQ-45.2, RIBS-PB, and AS-WAS. Again, all the electronic or paper assessments from the sessions were destroyed after transferring the de-identified information to a data file.

Since Dee requested the use of an interpreter, a debrief session was held with the interpreter after each intervention session to discuss communication. The conversation focused on language, what was easily understood, and what needed to be modified. Moreover, we discussed which words were not easily translated into American Sign Language so that we could spend time during the next session to review them.

Post-Intervention. One month after the final intervention session, data on the OQ-45.2, RIBS-PB, and AS-WAS was collected to assess if the participants-maintained results from the intervention.

Results

Data Analysis

The data were collected from the three scales (OQ-45.2, AS-WAS, and RIBS-PB) during phase A (Baseline) and phase B (Intervention) for all three participants. Descriptive statistics across participants and scales, including averages, median scores, standard deviations, and score ranges, appear in Table 2. Visual analyses were employed to determine if the REBT treatment affected the dependent variables in the areas of level, trend, the immediacy of effect, variability, and overlap (Michiels et al., 2016; Wolfe et al., 2019). Criticism on using visual analysis solely to determine intervention effects frequently occurs in the single-subject methodology literature. The guidelines for formal decision making are not standardized (Alresheed et al., 2013; Gage & Lewis, 2012; Lenz, 2012; Michiels et al., 2016; Olive & Franco, 2008; Parker & Vannest, 2009; Parker et al., 2011; Wolf et al., 2019). A study by Wolfe, Barton, and Meadan (2019) developed a protocol with step-by-step guidelines for conducting a visual analysis by comparing considerations listed in other research studies, and that protocol guided the researcher while engaged in data analysis. It should be noted that on the first day of the REBT intervention, data was collected and reflected as the first data point. Because the OQ-45.2 asks for symptoms from the last seven days, the first data point was not used to determine an immediate change across the participants. Because the RIBS-PB and AS-WAS are not bound by time, immediacy was considered cautiously while observing the first intervention datapoint for each.

Additional techniques to analyze the multiple baseline data were utilized to support more objective and precise interpretations (Alresheed et al., 2013; Gage & Lewis, 2012; Lenz, 2012; Olive & Franco, 2008; Parker & Vannest, 2009; Parker et al., 2011). A non-overlapping data analysis was utilized in this study to determine effect sizes, specifically, non-overlapping of pairs (NAP) (Parker & Vannest, 2009). Parker & Vannest (2009) argue that NAP is superior to the other analyses as it is most closely related to R^2, the most accepted effect size in research. NAP equals the number of comparison pairs with no overlap divided by the total number of comparisons (Phase A data points multiplied by Phase B data points) (Parker & Vannest, 2009). The following NAP score ranges were used to determine effects sizes as suggested by Parker and Vannest (2009): 0-65%, weak effects; 66-92%, moderate effects; and 93-100%, strong effects. The NAP effect sizes can appear in Table 3.

Outcome Questionnaire (OQ-45.2)

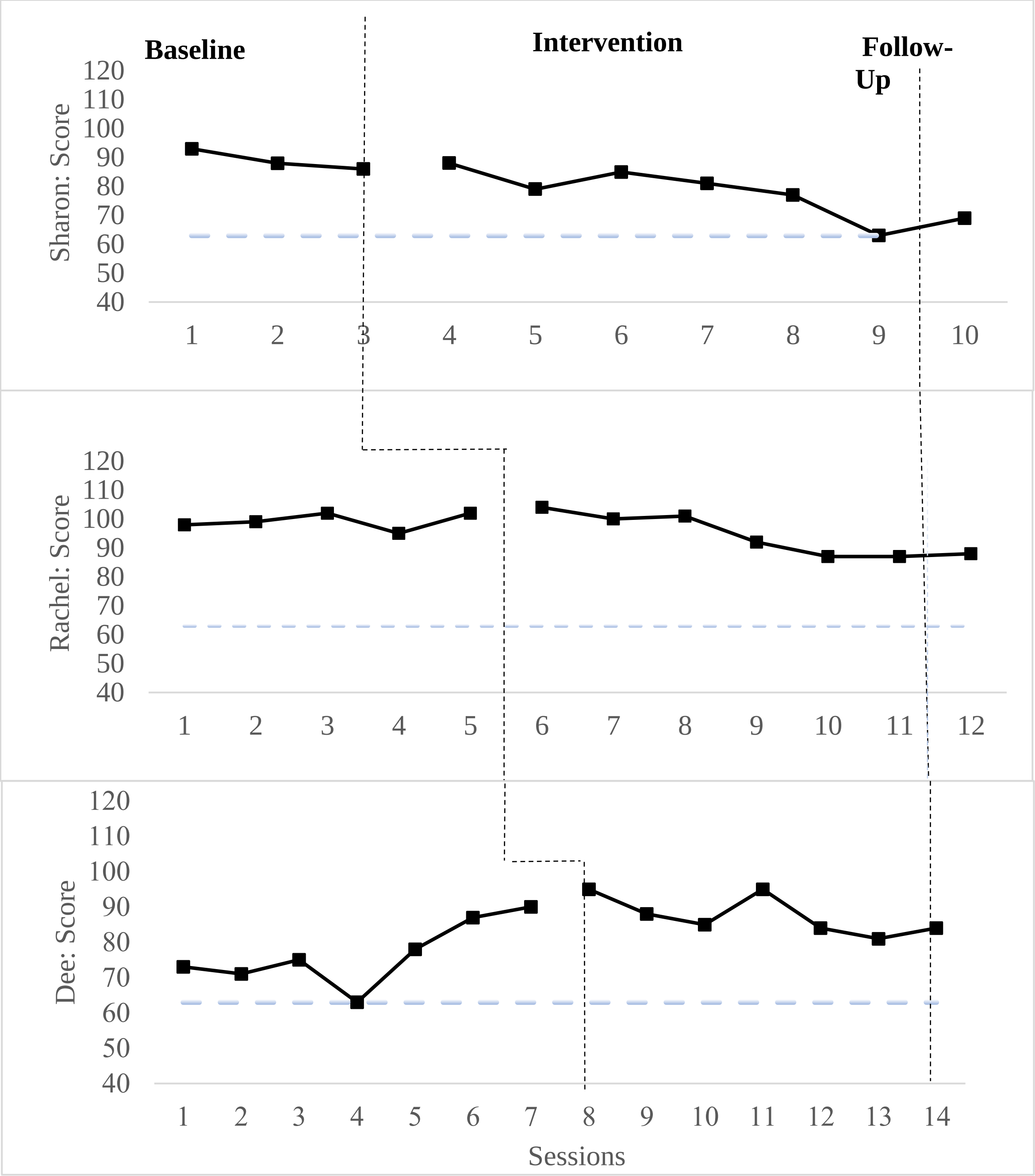
Visual analysis of the scores on the OQ-45.2 across phases for all three participants and effect size calculations show different effects from the REBT intervention on symptoms of emotional distress across participants. The effect of REBT was most visible with Sharon, who reached a score within normal limits on the last day of the REBT intervention (OQ = 63). Sharon's three data points of baseline indicated stable scores with a mean of 89 (SD = 3.61, range = 86-93, median = 88). After REBT was implemented, the overall mean score decreased to 78.83 (SD = 8.73, range = 63-88, median = 80). Generally, there was a downward trend across phases, with an immediate effect observed during the second week of the REBT intervention and a NAP effect size of 93%. After the intervention phase (B), a significant increase was not observed during the one-month follow-up (Follow up, OQ = 69).

Rachel's baseline level of symptoms of emotional distress was slightly variable with a mean of 99.2 (SD = 2.95, range = 95-102, median = 99) but did not differ more than 14-points and, therefore, met stabilization criteria. Following the REBT intervention, Rachel's overall mean level of scores decreased to 95.17 (SD = 7.47, range = 87-104, median = 96) with a decreasing trend and a moderate NAP effect size of 69%. At the one-month follow-up, Rachel's score only increased by one point (Follow up, OQ = 88).

Finally, Dee's baseline trend of scores on the OQ-45.2 were variable across the seven data points. The score during baseline week four dropped significantly, and so Dee remained in baseline until the trend was clearer. The next three data points showed an upward trend, similar to the trend seen during the first three data points, and therefore, was provided the REBT intervention on week eight. The researcher decided to begin the intervention phase as the trend was in the opposite direction of the study's goal, demonstrating worsening symptoms. Dee's baseline mean score was lower than the mean score during the intervention, changing from a mean of 76.7 (SD = 9.32, range = 63-90, median = 75) to a mean of 88 (SD = 9.32, range = 81-95, median = 86.50). The trend line across phases changed directions during the second week of the intervention, week nine, and continued mostly downward (except for week 11) while receiving the REBT intervention. The NAP effect size was also weak (NAP = 17%). During the one-month follow-up, Dee's OQ score increased by three points but did not indicate a significant change (Follow up, OQ = 84). For Sharon and Rachel, scores on the OQ-45.2 decreased in the post-intervention phase but varied in magnitude. The magnitude of treatment for Dee was weak as symptoms of emotional distress appeared to increase beginning week four of baseline; however, the change of direction while receiving the REBT intervention and post-intervention switched from an upward trend to a downward trend (with one outlier during week 11).

Figure 1

Scores on the Outcome Questionnaire 45.2- Baseline, Intervention, and Follow Up



Note. The lowest possible score on the OQ-45 is a score of 0. The number 40 was chosen to be the lowest score on the charts since no one obtained a lower score than 60.; A score of 60 indicates symptoms within normal limits.

RIBS Progressive Blindness Scale

Irrational Beliefs. Irrational beliefs were summed from five questions on the RIBS Progressive Blindness Irrational Beliefs Subscale, with a maximum score of 25. Post-intervention data indicated that, based on RIBS IB, REBT decreased irrational beliefs for Sharon and Rachel.

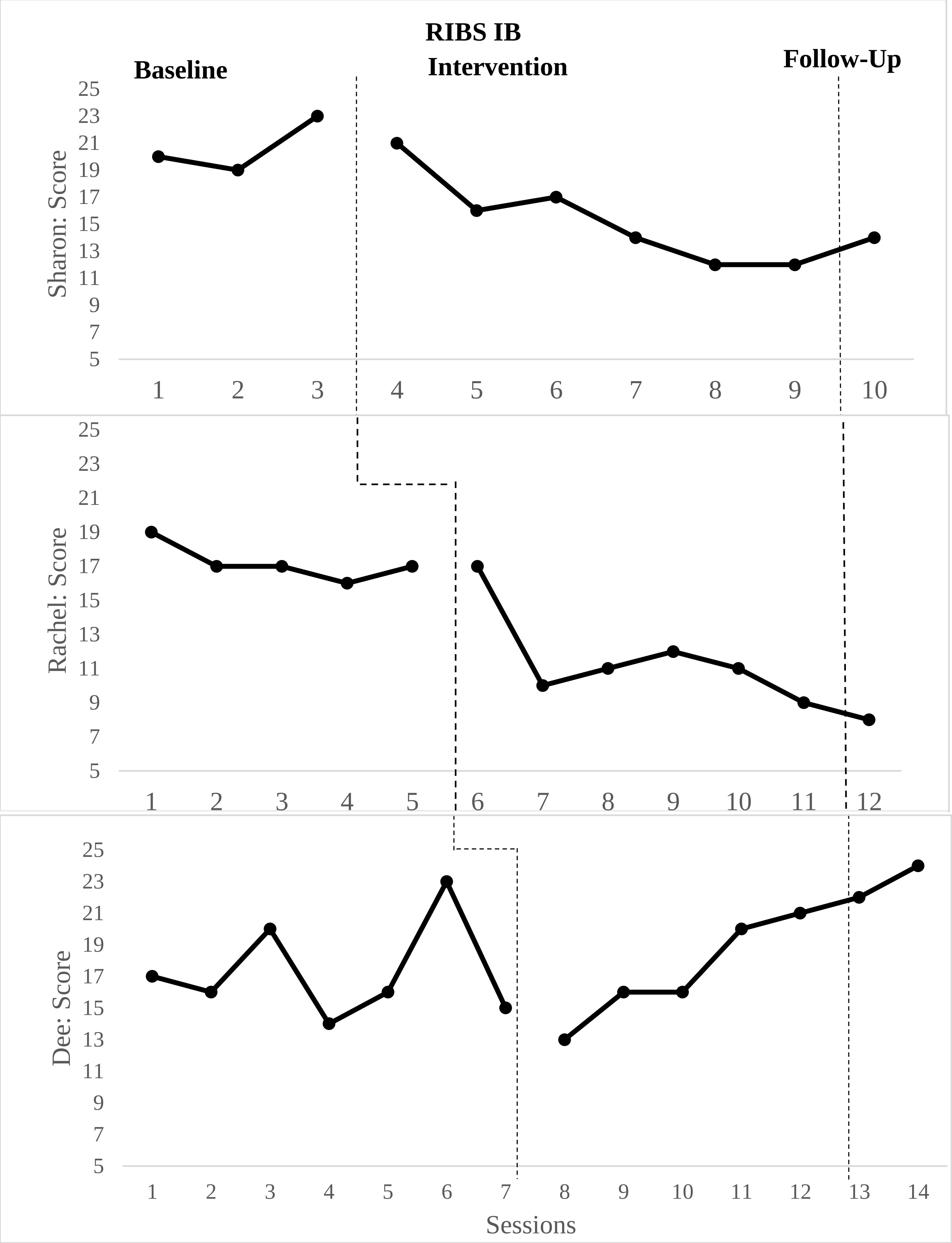
Sharon's mean level RIBS IB score decreased from 20.67 (SD = 2.08, range = 19-23, median = 20) to 15.33 (SD = 3.45, range = 12-21, median = 15), with an overall downward trend following the intervention. Moreover, a large NAP effect size was present at 98. Follow-up data included a two-point increase in irrational beliefs (Follow-up, IB score = 14).

Likewise, Rachel's mean level RIBS IB score decreased following the REBT intervention with a mean score of 17.2 (SD = 1.1, range = 16-19, median = 17) to 11.67 (SD = 2.81, range = 9-17, median = 11) consecutively. Across phases, a downward trend was observed with a strong NAP effect of 93%. Rachel's IB score during the one-month follow-up decreased by one point (Follow up, IB score = 8).

Similar to the data from the OQ-45.2, an upward trend of irrational beliefs was seen post-intervention for Dee with a mean level score of 17.29 (SD = 3.15, range = 14-23, median = 16) during baseline and a mean level score of 18 (SD = 3.52, range = 13-22, median = 18) following REBT intervention. Effect size calculations demonstrated weak results from the REBT intervention, particularly with a NAP of 38%. A two-point increase in irrational beliefs was observed at the one-month follow-up session (Follow up, IB score = 24).

Figure 2

Scores on RIBS-Progressive Blindness IB Subscale-Baseline, Intervention, and Follow Up



Note. The lowest possible score on the RIBS IB is a score of 5 and the highest score possible is a score of 25. Higher scores indicate more irrational beliefs.

Rational Beliefs. Rational beliefs towards blindness were measured by the RIBS Progressive Blindness, rational beliefs subscale. Likewise, the highest score possible is a score of 25, summed from five different questions that represents a high level of rational beliefs. An upward trend in rational beliefs towards progressive blindness was only evident for Sharon, whereas Rachel appeared to maintain an overall steady trend of rational beliefs across phases.

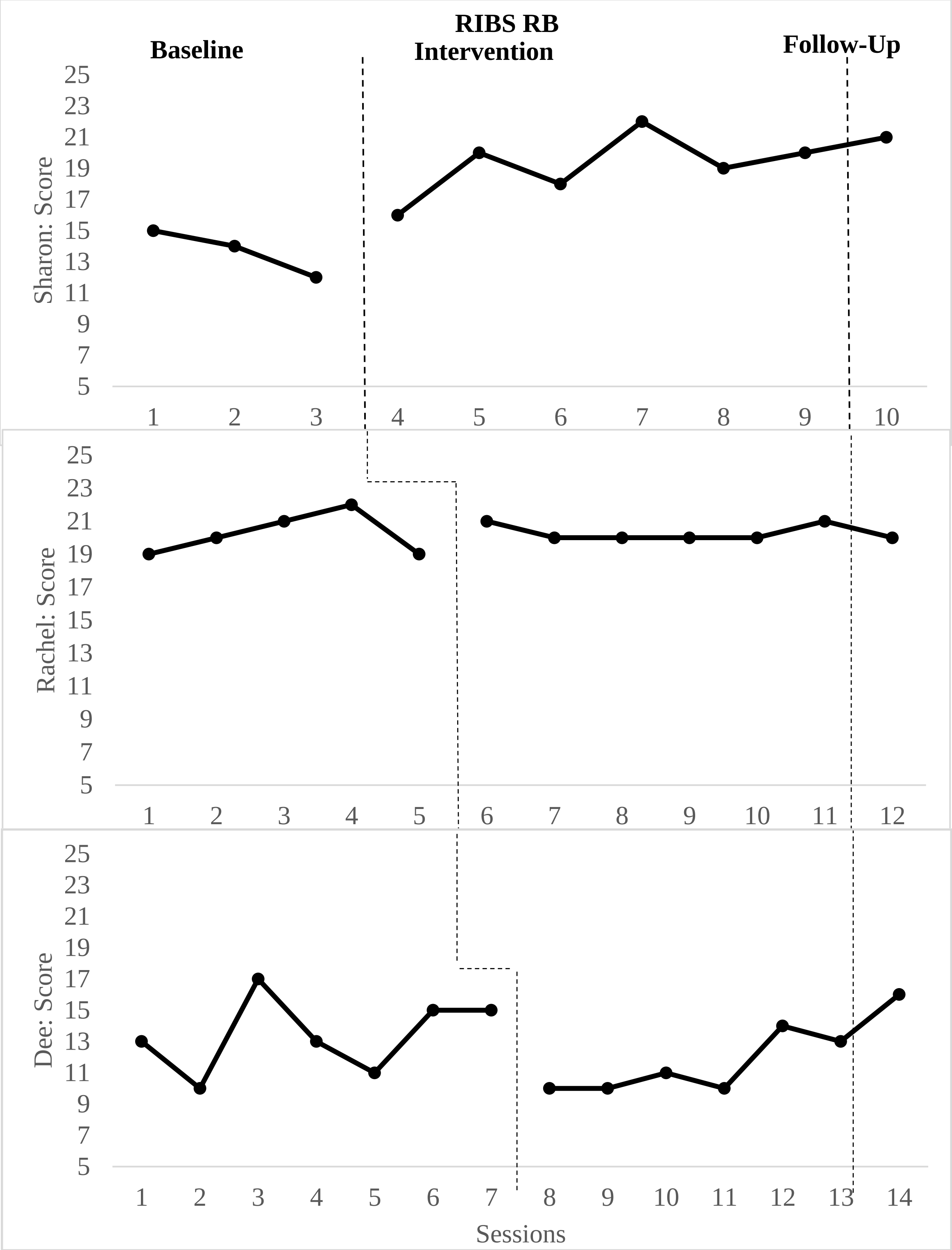
During the baseline phase, Sharon had a mean level score on the RIBS RB of 13.67 (SD = 1.53, range = 12-15, median = 14) in comparison to her intervention mean level score of 19.17 (SD = 2.04, range = 16-22, median = 19.50), demonstrating a positive change. In addition, the REBT intervention exhibited a strong NAP effect size of 100%. During the one-month follow-up, Sharon's upward trend in rational beliefs continued (Follow up, RB score = 21).

Next, Rachel's level of rational beliefs was comparable during both the baseline and intervention phases, with a mean level score of 20.20 (baseline) and a mean level score of 20.33 (intervention). Baseline data was slightly variable (SD = 1.3, range = 19-22, median = 20), but still, additional descriptive statistics demonstrated little change (SD = .52, range = 20-21, median = 20) and a weak effect size calculation of NAP = 56%. Despite overall weak effects, it appears as if Rachel already had a high level of rational beliefs before receiving the intervention, contrasted to both Sharon and Dee. During Rachel's one-month follow-up session, she reported a slight decrease from the last session of the intervention phase (B) (Follow up, RB score = 20). However, it is important to note that Rachel's median and mode score on the RB was a score of 20.

Last, Dee’s rational beliefs were variable during baseline, with an upward trend post-intervention. Dee’s mean level score of rational beliefs decreased slightly from baseline at 13.43 (SD = 2.44, range = 10-17, median = 13) to intervention with a mean level score of 11.33 (SD = 1.75, range = 10-14, median = 10.50). Dee’s performance on the RIBS RB was opposite of the goal, with a weak NAP effect size of 29%. Generally, the REBT intervention appeared to be ineffective at increasing rational beliefs. However, Dee’s rational beliefs increased during the one-month follow-up session (Follow up, RB score = 16).

Figure 3

Scores on RIBS-Progressive Blindness RB Subscale-Baseline, Intervention, and Follow Up



Note. The lowest score possible on the RIBS RB is a score of 5 and the highest score is a score of 25. Higher scores indicate more rational beliefs.

Acceptance and Self-Worth Adjustment Scale (AS-WAS)

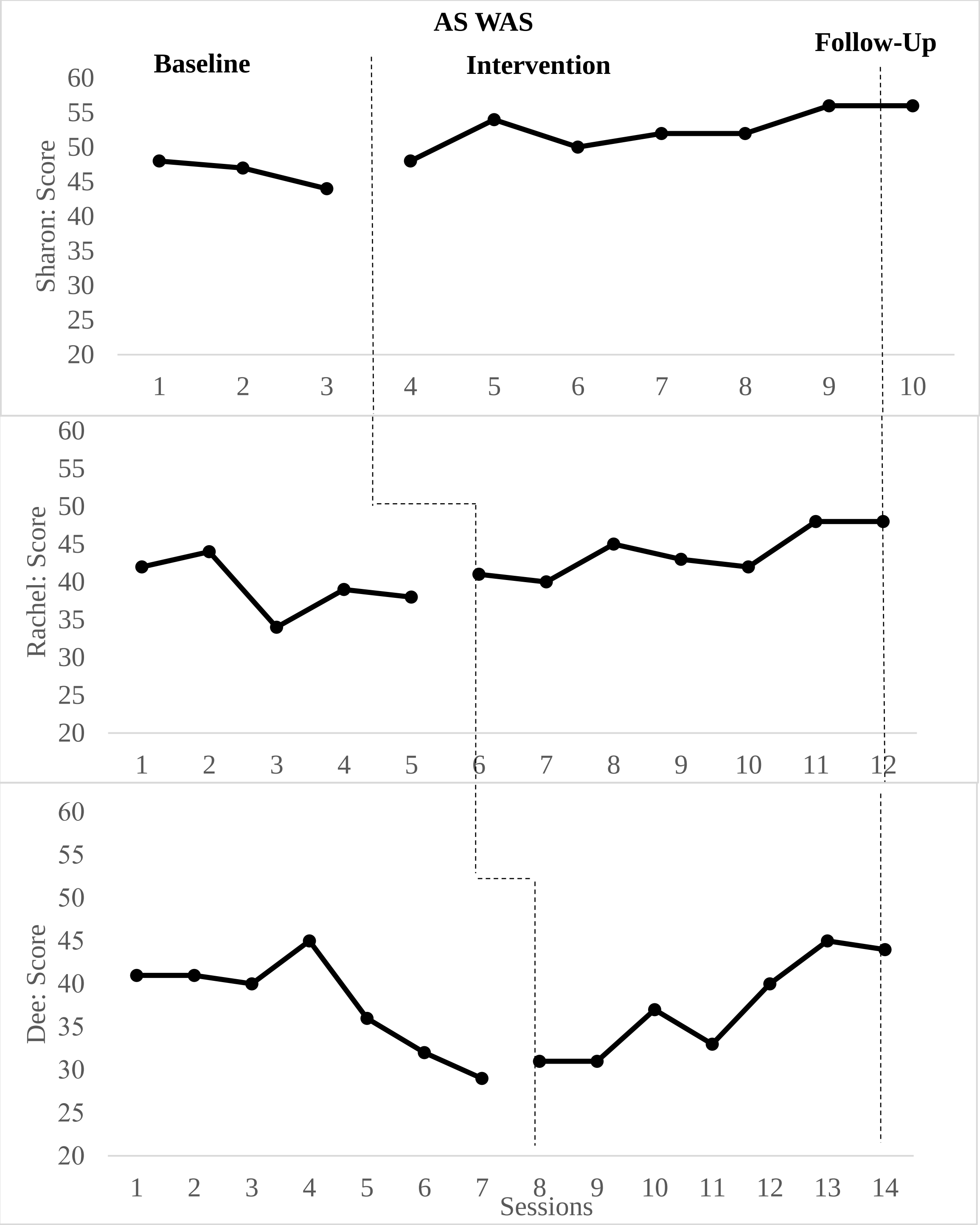
Adjustment to vision loss as measured by the AS-WAS was observed through baseline and post-intervention data. First, Sharon's mean level of scores at baseline was 46.33 (SD = 2.08, range = 44-48, median = 47), and following the REBT treatment, her mean level of scores increased to 52 (SD = 2.83, range = 31-45, median = 52), demonstrating an upward trend across phases. There was an immediate effect seen from the last data point in baseline to the first data point in the intervention (weeks three to four), and there was a strong NAP effect size of 98%.

At the one-month follow-up session, Rachel's AS-WAS score was similar to her score during the last session during the intervention phase (B) (Follow up, AS WAS = 56). Next, Rachel's baseline data was variable across the five data points, with a mean level score of 39.40 and a score range of 38-44 (SD = 3.85, median = 39). Post-intervention, Rachel's mean level score increased to 43.17 and a score range of 40-48 (SD = 2.93, median = 42.50) with a moderate NAP effect size of 81%. Rachel's score was maintained from the last data point during the intervention phase (B) (Follow up, AS WAS = 48).

Finally, Dee's scores demonstrated a downward trend during baseline with a change in the direction (upward) during the first week of the REBT intervention. Dee's baseline scores ranged from 45-29, with a score of 29 on the last week of the baseline phase, and her mean level score was 37.71 (SD = 5.65, median = 40). During the REBT intervention phase (B), Dee's mean level score (mean = 36.17, SD = 5.91, range=31-45, median = 35) was slightly lower than baseline; however, an upward trend was observed through visual analysis during the intervention phase. Overall, there was a weak NAP effect size of 47%. At one-month follow-up, Dee's AS-WAS demonstrated a one-point decrease (Follow up, AS-WAS = 44).

Figure 4

Scores on Acceptance & Self Worth Adjustment Scale-Baseline, Intervention & Follow Up



Note. The lowest score possible is a score of 19 and the highest score possible is a score of 76.

Table 2.

Descriptive Statistics: Mean, Median, Standard Deviation, and Range

		OQ-45.2		AS-WAS		RIBS IB		RIBS RB	
		Phase1	Phase 2	Phase 1	Phase 2	Phase 1	Phase 2	Phase 1	Phase 2
Sharon									
	Mean	89	78.83	46.33	52	20.67	15.33	13.67	19.17
	Median	88	80	47	52	20	15	14	19.50
	SD	3.61	8.73	2.08	2.83	2.08	3.45	1.53	2.04
	Range	7	25	4	8	4	9	3	6
Rachel									
	Mean	99.2	95.17	39.40	43.17	17.20	11.67	20.20	20.33
	Median	99	96	39	42.50	17	11	20	20
	SD	2.95	7.47	3.85	2.93	1.1	2.81	1.30	.52
	Range	7	17	10	8	3	8	3	1
Dee									
	Mean	76.71	88	37.71	36.17	17.29	18	13.43	11.33
	Median	75	86.50	40	35	16	18	13	10.50
	SD	9.32	5.87	5.65	5.60	3.15	3.52	2.44	1.75
	Range	27	14	16	14	9	9	7	4

Note. Phase 1=Baseline; Phase 2=Intervention; The one data point at follow-up was not included in phase 2

Table 3

Effect Size: Non-Overlapping Pairs (NAP)

Participant	Measure	NAP
Sharon	OQ-45.2	93%
	AS-WAS	98%
	RIBS IB	91%
	RIBS RB	100%
Rachel	OQ-45.2	69%
	AS-WAS	81%
	RIBS IB	93%
	RIBS RB	56%
Dee	OQ-45.2	17%
	AS-WAS	47%
	RIBS IB	38%
	RIBS RB	29%

Note: NAP = Non-Overlapping Pairs

Discussion

This study investigated the effects of REBT, delivered via teletherapy, on clearly defined therapeutic goals related to progressive vision loss with three individuals who are deafblind. Specifically, the researcher hypothesized that the three participants would experience a decrease in irrational beliefs and emotional dysfunction symptoms and an increase in rational beliefs and adjustment to vision loss. The results of the study partially confirmed the hypotheses established, with improvement in symptoms of emotional distress and adjustment towards vision loss, an increase in rational beliefs, and a decrease in rational beliefs for two out of the three participants. Likely variables that negatively influenced the results include participant characteristics, environmental, and experiential factors, and relational factors with the COVID-19 pandemic that began around the same time the research received approval for the study. This study justifies the need for a larger randomized clinical trial.

Positive results were best observed with Sharon, participant one. At the beginning of the study, Sharon indicated that she had anxiety and depression specific to vision loss with clearly well-defined goals. Also, Sharon experienced grief from the loss of her father, who passed away a year prior. Over the past year, she described transitioning to living alone and taking on full responsibility in the household, whereas previously, she received support from her father. Sharon expressed her motivation to be involved in therapy. She demonstrated that motivation throughout the study by completing the homework, being punctual to the sessions, and participating in the conversations. Motivation and commitment to change are essential in treatment success; therefore, Sharon's personal investment in therapy likely supported her success with the

REBT intervention (Ryan et al., 2011). On the OQ-45.2, Sharon experienced a significant decrease in symptoms of emotional dysfunction from baseline to intervention. Also, an increase in adjustment towards vision loss and rational beliefs was observed, as was a decrease in irrational beliefs.

On the OQ-45.2, Rachel's scores were slightly variable during baseline and the first three weeks of the intervention. However, during week nine of the study (intervention week four), there was a noticeable downward trend, indicating some symptom relief toward the end of the study. In contrast, there was an immediate upward trend in adjustment to vision loss, a downward trend in irrational beliefs, and a stable (comparatively higher) trend in rational beliefs. Overall, Rachel experienced success targeting areas directly related to vision loss, yet her symptoms of emotional dysfunction were slow to change. In contrast to the other participants, Rachel held higher rational beliefs toward blindness without intervention. At times, Rachel indicated that she thought she was less capable than individuals without sensory losses, but she would identify those statements as inaccurate during the reframing exercises. Rachel indicated more negative thought patterns and emotional distress related to the COVID-19 pandemic than her vision loss. However, she did note that the pandemic made her more cognizant of her deafblindness and vice versa, more fearful of leaving home during that time. Rachel was motivated by the potential to decrease emotional dysfunction; however, she was inconsistent with her homework participation. Specifically, Rachel would complete the written exercises assigned for homework, but she did not apply the principles to her everyday life. Rachel indicated that she could address her irrational beliefs through the reframing exercises, but she did not experience a significant change in her psychosomatic symptoms. Little change in the OQ-45.2 score is possibly due to comorbid diagnoses that Rachel disclosed to the researcher during the study. Rachel reported that she had a history of obsessive-compulsive disorder (OCD), anxiety, depression, and Thanatophobia (fear of death and dying). Throughout the sessions, Rachel reported that she was experiencing significant distress related to the idea of contracting and dying from SARS-CoV-19. Rachel scheduled several doctor's appointments and medical examinations to address issues with her health, in which the results were consistently found to be inconclusive. After several trips to her primary care practitioner, gastroenterologist, and neurologist, she concluded during week four of the intervention that her symptoms were likely related to stress brought on by the pandemic. Information regarding psychological diagnoses was not requested in the demographic questionnaire, which the researcher acknowledges as a limitation to the study. REBT is not considered the golden standard for phobias or OCD. Despite visual exposure co-occurring during reframing exercises, a more eclectic therapeutic approach that incorporates exposure and response prevention therapy may have been better suited to target Rachel’s symptoms of emotional dysfunction since they are not solely a result of her vision loss (Hezel & Simpson, 2019).

Lastly, Dee's scores on the OQ-45.2 were lower during the baseline phase (A) before she resigned from her job during week four. The drop in the score represented during the week four data point was potentially related to an immediate sense of relief from leaving an acclaimed hostile environment. Dee described that she resigned from her employment because she did not feel supported while losing vision on the job and was not given work accommodations in a timely manner. Therefore, it became increasingly difficult for her to complete the necessary work demands, causing unwanted stress. The situational loss of her job was an external factor that required time to process and could not be controlled by the researcher; therefore, the baseline was extended to seven weeks to gather a better picture of her symptoms of psychological distress. Dee's scores on the OQ-45.2 increased during baseline (weeks five through seven), which she attributed to feelings of grief related to the loss of the job and her vision since she had identified as a working professional for a long time. During the intervention, the direction of her scores changed, and she began to discuss the meaning of the loss and her adjustment to the loss with the researcher. A downward trend in symptoms of emotional distress was observed during the intervention but not across phases; therefore, a treatment effect was not observed relative to the researcher's hypothesis. Also, the brief REBT intervention did not emit strong effects for Dee across phases for irrational beliefs, rational beliefs, or adjustment to vision loss. It is important to note that Dee was the only one in the study whose native language was ASL. Because the study utilized a certified ASL interpreter, there is always a possibility that some of the information did not translate easily from one language to another. During the sessions, extra time was required to develop signs for irrational and rational beliefs and to define the differences clearly. Therefore, the success of the treatment could have been dependent on language and time restraints since the study was only six weeks long. Toward the end of the study, Dee began to participate more freely in the conversation. When the intervention was complete, she requested to continue therapy; thus, the researcher followed the study’s protocol to help her find another therapist. This suggests that six weeks of therapy was likely not enough time for Dee and the researcher to build rapport, establish communication, define/learn the new concepts, work through the agenda, and observe significant change indicated by numbers on the scales utilized in the study.

Depending on the individuals' environmental and experiential history, establishing a therapeutic alliance and the magnitude of change varied across the six weeks. Likewise, change may not occur in a short period when a major life stressor, such a job loss, occurs during therapy. Therefore, one must make decisions based on the client's needs to determine the frequency and duration of treatment. In general, the desired improvement has been documented through brief psychotherapies ranging from a single session to 20 sessions in length (Cluver, 2004; Swartz et al., 2014). According to the literature, once the individual has learned to shift their mindset and generate a new system of beliefs, clinical change is believed to immediately follow (Cluver, 2004). However, the change in mindset is often dependent on client characteristics (Cluver, 2004; Swartz et al., 2014). Since the current study had a small sample size (n = 3) and little demographic diversity, one cannot compare nor ignore demographic differences in treatment success.

The study also hypothesized that higher levels of emotional dysfunction would be related to higher irrational beliefs. Across all three participants, correlations were observed in the direction expected, but the relationship was not significant in all cases. This was most likely related to the small sample size and thus diminished power. Sharon and Rachel's OQ-45.2 scores were significantly related to their irrational belief scores, but a significant relationship was not seen in Dee's case. As described, Dee did not produce significant results for any of the hypotheses indicating that the specific intervention utilized in the study may not be effective for all individuals. On the other hand, extraneous variables were likely influential of little change and will be discussed in the study's limitation section.

Strengths, Limitations, and Directions for Future Research

The current study had several strengths, expanding on the literature supportive of REBT as an evidenced-based intervention. To date, few studies have explored the efficacy of the REBT treatment with individuals who are deafblind, and the current study provides initial evidence for treatment success. Due to difficulties obtaining a homogenous population, the researcher utilized a multiple baseline design study as it is a robust experimental design in areas of exploratory research. Moreover, the experimental design allowed the researcher to highlight essential aspects to individualized treatment such as communication, visual access, environmental set-up, and knowledge of individual differences within the population.

The researcher was previously trained at the graduate level in education for individuals who are blind and deafblind; therefore, the researcher had the knowledge base and skills to adapt the materials used in the study (i.e., braille, large print, accessible word document, color contrast). Furthermore, the researcher worked in deafblind vocational rehabilitation for six years and was conversational using ASL.

Next, The researcher utilized a treatment manual that an expert in REBT, reviewed and approved. Throughout the study, my mentor provided supervision, allowing us to process the data and information collaboratively. Due to the COVID-19 pandemic, supervision was conducted virtually. In addition, the study was conducted via teletherapy, removing the risk of contagions from the SARS-CoV-2 virus for both the participants and the researchers.

Finally, another strength of the study is the assessment of maintenance that was examined during a one-month follow-up. Results across all participants and measures did not indicate a significant change after the intervention was removed. Therefore, the participants continued to benefit from the REBT treatment one month after the intervention ended in areas of emotional distress, irrational/rational beliefs, and acceptance and adjustment.

The methods of data collection present both strengths and limitations. Strengths include weekly data collection using all the scales from the study. Limitations include using only one scale of disturbance (the OQ-45.2) to detect stability during the baseline phase (A) visually. The burden and challenges involved in making decisions on stability across scales resulted in the researcher relying on the OQ-45.2 only.

There are also several additional limitations to this study. First, we cannot establish a functional relationship between the REBT intervention, and the outcomes observed because the change was not consistent across participants. That said, REBT has been proven as an effective intervention across several research studies, so it is unlikely that the change observed in two of the participants would have resulted on its own without intervention (DiGiuseppe et al., 2018; Sacks, 2004). Another shortcoming of the study is that the participants were all female and Caucasian. Diversity in deafblindness was observed, but racial, gender, and socio-economic differences were not. Likewise, the researcher used broad criteria for eligibility and involvement in the study. Varying degrees of vision and hearing loss, age of onset, one's support system, and access to community resources are all factors that influence psychosocial implications related to deafblindness. Therefore, generalizing the results from the current study is not possible.

Larger samples are needed to conclude the effectiveness of REBT with individuals deafblind as a whole.

The research was conducted during a global pandemic (COVID-19). New York City and Long Island were considered the epicenter of the SARS-CoV-2 virus (Centers for Disease Control and Prevention, 2020). According to the Centers for Disease Control and Prevention (2020), approximately 203,792 cases were laboratory-confirmed in NYC alone between February and June of 2020. At the start of the study, little was known about the local, state, and federal governments' psychosocial implications. One might assume that a reduction in opportunities and access to socialization alone likely increased to acute mental health crises. The current study began in July 2020 during Phase 3 of reopening the state and city. COVID-19 Restrictions fluctuated depending upon the number of positive cases. The researcher believes that feelings of loss and fear during the pandemic are universal, but the participants' experiences and ability to cope are likely unique compared to the general population.

The three participants in the study all relied on public transportation to travel to places of importance. Sharon, Rachel, and Dee all received vocational rehabilitation services, which were transitioned to online instruction only for several months; therefore, learning how to navigate their environment during a pandemic was limited. Throughout the study, all three participants reported that the pandemic “took away” some of their independence. All three participants relied on others for environmental access in certain situations; however, they were fearful to ask for help since they could potentially contract SARS-CoV-2, resulting in withdrawal and isolation. Moreover, for optimal communication, the participants require communication within six feet distance, making it challenging to follow CDC guidelines requiring sufficient space between people to prevent the spread of the virus. Frustration with deafblindness may have been exaggerated due to the pandemic. Fear and anxiety related to COVID-19 were addressed throughout the intervention, using vision-related examples to connect it to the agenda. Therefore, the current study may not be able to be replicated entirely as the setting could not be controlled.

Last, treatment fidelity was not collected throughout the research study. During the pandemic, the researcher was unable to find a research assistant to support the integrity process. In the future, treatment fidelity should be included as it is an important component to multiple baseline research studies.

To sum, the results of the present study are encouraging, but additional research is needed to determine if REBT is an effective technique addressing irrational/rational beliefs toward progressive blindness, adjustment towards vision loss, and emotional dysfunction in the deafblind community. Future research should include a more diverse sample across racial and ethnic backgrounds as well as gender, age, and diagnoses. Research in deafblindness is difficult to complete due to the heterogeneity in etiology and acquisition of the sensory losses, but research is not impossible. Limitations and confounding variables are inevitable in this area of research; therefore, single-subject, and multiple baseline design studies may be able to answer questions that larger sample size studies cannot answer. Since motivation to change appeared to be an influential factor throughout the study, incorporating a measurement to assess motivation may provide more information relative to the current study. Next, replicating the study when the world is not experiencing a global pandemic is strongly recommended. Symptoms of emotional dysfunction, adjustment, and irrational beliefs may have been heightened during the COVID-19 pandemic. The author could not postpone the research project because completion was necessary for graduation.

Moreover, since the study was conducted via teletherapy, the results cannot be generalized to in-person therapy, so comparing in-person therapy to teletherapy might be a direction for future research. The REBT intervention length was brief (six weeks long), and based on the results of the study, more time may be necessary to observe a long-lasting change. Therefore, future studies may wish to incorporate a more prolonged intervention phase. Last, eligibility criteria may need to be adjusted. The current researcher did not request mental health history information, including diagnoses, medication, or experience with psychotherapy. The researcher only asked if the participants were in psychotherapy at the time of the study. As explained, REBT is known to be an evidenced-based intervention; however, it may not be the best intervention for all individuals and reasons seeking psychotherapy.

Implications for Practice in School Psychology

There are many implications in the field of school psychology that can be taken from the current study. Part of the school psychologist's role is being aware of how medical and psychological diagnoses/disorders impact students in the school. Although the study focused on adults, the study outlines current research, potential implications of progressive vision loss and deafblindness, an optional treatment approach, and an individualized framework determining essential accommodations and modifications in therapeutic settings. School-based counseling with an REBT lens can be utilized to target beliefs related to school goals when appropriate. The appropriateness of using REBT framework with students will be dependent on their goals. Although the study only included accommodations and modifications for three individuals, awareness of the necessary considerations can be received through the study. The reader will not be an expert from the study but will become familiar with the channel of professionals whom one can reach out to through the literature review. Next, by learning about federal, state, and local services for students who are deafblind, the school psychologist can support families by connecting them to these services, especially during times of transition.

Since research in deafblindness is limited due to the lack of homogeneity in the population, standardized assessments do not represent their developmental, environmental, or experiential history. Assessment accommodations and modifications are often utilized; however, proper interpretation is dependent on one's familiarity with the research in this area. With the current study adding to the gaps in research available, school psychologists will become more competent in serving students who are deafblind and supports may need to be in place on the IEP and in the classroom.

Conclusion

The current study found mixed results across participants, as is expected in REBT treatment or other therapeutic interventions. Rapport, environmental changes, and communication with someone outside of the home during a global pandemic could have been influential to the changes observed throughout the study. However, it is unlikely the amount of change would have been observed without the intervention, especially in irrational and rational beliefs. Therapy is not a one size fits all approach. The six weeks of REBT intervention were only an introduction to making a healthy commitment to change within one's reach and reframing irrational thoughts while emphasizing healthy rational thinking patterns. The intervention followed a manual, and although flexibility with their personal experiences connected to the material was part of the dynamic, the researcher still had to follow the content. More research is needed, but the study still brings valuable information to the field of psychology and professionals working with individuals who are deafblind.

Appendix A

Informational Email about the Research Study

Colleagues and friends,

I am conducting a research study on Rational Emotive Behavior Therapy, and it is efficacy in providing relief from emotional distress related to progressive vision loss. Specifically, I am recruiting individuals with dual sensory loss (deafblind) between the ages of 18- 75. If you know of someone who may be interested in receiving free psychotherapy for at least 6 weeks long, please forward them my information: Chelsey.laurito16@my.stjohns.edu or 814-421-0134.

Warm Regards,

Chelsey Laurito, M.S., COMS

NYS School Psychologist

Appendix B

Demographics Form

Age: ___________

Sex:
☐ Male
☐ Female

Relationship status
☐ Married
☐ Single (never married)
☐ Divorced
☐ Widowed
☐ Separated

Race
☐ American Indian or Alaska Native
☐ Black or African-American
☐ Native Hawaiian/ Pacific Islander
☐ East Asian
☐ South Asian
☐ White

Highest Educational Level
☐ Did not graduate high school
☐ High school diploma or equivalent
☐ Some college
☐ Bachelor's degree
☐ Master's degree
☐ Doctoral or professional degree Post-College graduate

Employment status (please check one):
☐ Part time
☐ Full time
☐ Unemployed
☐ Homemaker
☐ Student
☐ Retired
☐ Unable to work

Vision Diagnosis: ________________
Age of Onset:
Degenerative or stable:

Hearing Loss: ____________________
Age of Onset:
Degenerative or Stable:
Hearing Devices/aids:

What format do you prefer written communication?
☐ Large Print
☐ Regular Print
☐ Braille
☐ Electronic file

Primary and preferred language/style of communication:

Please describe your training experience related to your vision and hearing loss (education, rehabilitation, medical, etc.).

Appendix C

Consent Form

You are invited to participate in a research study to learn more about effective interventions for issues related to progressive blindness in individuals who are deafblind. This study will be conducted by Ms. Chelsey Laurito under the supervision of Dr. Raymond DiGiuseppe, a professor in the Psychology Department at St. John's University. If you agree to be in this study, you will be asked to participate in the following activities:

Complete a one-time questionnaire about your background (age, gender, education, etc.).
Complete three questionnaires several times throughout the study.

- A measure assessing emotional symptom distress, the quality of your interpersonal relations, and your social role.
- A measure assessing irrational and rational beliefs
- A measure assessing acceptance, self-worth, and adjustment.

Participate in the psychotherapy sessions for 6 weeks (one hour a week).

Participation in this study will involve between 6-10 hours of your time. Throughout the therapy sessions, there is a risk for psychological discomfort to occur when discussing, but not limited to, vision loss, adjustment, self-esteem, beliefs, safety, transportation, and communication.
The researcher will address discomfort throughout the intervention by identifying, and reframing the psychological symptoms by teaching healthy emotive and behavioral strategies.

The confidentiality of your answers on the scales and our research records will be strictly maintained by keeping the information you provide anonymously, and restricting the access to information to the principal investigators. The researcher will only disclose protected health information when use or disclosure is required by public law, including state statute or court order.

Participation in this study is voluntary. You may refuse to participate or withdraw at any time without penalty. Support will be provided by the researcher if you wish to find another mental health provider following participation. All participants who finish the study completely will receive a $50 gift card. If there is anything about the study or your participation that is unclear or that you do not understand, if you have questions or wish to report a research -related problem, you may contact Chelsey Laurito at 814-421-0134 or Chelsey.laurito16@my.stjohns.edu. You may also contact Dr. Raymond DiGiuseppe at digiuser@stjohns.edu. For questions about your rights as a research participant, you may contact Dr. Marie Nitopi, Coordinator of the University’s Human Subjects Review Board, St. John’s University, 718-990-1440 or nitopim@stjohns.edu . You can print a copy of this consent form for your records, which indicates that you have received a copy of this consent document to keep.

Yes, I consent to participate in the study and understand what is stated above.

____
Signature and Date

____
Witness’s Signature and Date

Appendix D

Treatment Manual

First Session

Develop rapport with the individual using empathy, validation, acceptance, humor, etc.

Set the Agenda with the subject for (THIS SESSION OR THE COURSE OF THERAPY)

Identify/define problem areas related to vision loss.

- Hypothesize causal mechanisms using data from the baseline phase –Connect the emotional and behavioral problems to irrational beliefs.

Provide psychoeducation on irrational beliefs, and REBT

- core cognitive mechanisms (irrational beliefs) are considered trans-diagnostic. ---- irrational beliefs related to themes of threat and uncertainty will lead to dysfunctional emotions.
- Individuals experience undesirable activating events about which they have rational and irrational beliefs. These beliefs lead to emotional, behavioral, and cognitive consequences.
- Discuss functional vs. dysfunctional emotional consequences and provide examples
- Discuss that we encourage individuals to challenge IB and try to assimilate more efficient, adaptive RB. This change will create healthier and more adaptive emotional, cognitive, and behavioral responses.
- Therapy will us a combination of cognitive, behavioral, and emotive techniques to help you get better physically, emotionally, and engage in healthier behaviors.
- As your existing irrational beliefs have become habitual, changing your automatic responses to adverse events takes exercise. Therefore, homework is essential.

Introduce the A-B-Cs- Cognitive technique

- Say, “According to cognitive theory, the effect that our thoughts have on our physical, behavioral, and emotional responses to a situation is illustrated through the A-B-Cs.”
    - A = activating event or situation
    - B = Beliefs or thoughts regarding the situation
    - C = Consequence: How we feel, or act based on the beliefs
        - Unhealthy negative emotions - negative feelings that are unhelpful, lead to disruptive behaviors, negative physical consequences of distress. OR

        - Healthy adaptive negative emotions that are helpful and lead to adaptive behaviors, negative physical consequences of distress.
- Go through ABCs using examples related to travel or vision loss.
    - Start with activating event, skip to consequences, then go back to beliefs.
    - Provide a list of beliefs for reference includes definitions of the following:
        - Demands
        - awfulizing/catastrophizing
        - Frustration intolerance
        - Self-Downing
        - Other- Downing
        - Life Downing
    - Provide the rational alternatives to these beliefs
        - Non Demanding preferences
        - awfulizing/catastrophizing realistic negative evaluations
        - Frustration Tolerance
        - Self - Acceptance
        - Other – Acceptance
        - Life Acceptance

Summary of the session and assign homework

Homework: ABC practice each day

Second Session

Brief update and mood check

Bridge from the last session and setting agenda for the current session

Review Homework of ABCs

Engage in supporting exercise
- Introduce the ABCDEF approach – Cognitive technique
- Using the ABC assignment from last week's session as a guide, introduce the next steps to the model
    - Dispute or challenge beliefs
        - Where is this getting me?
        - What evidence is there to support the belief? Is it logical?
        - Will having this belief help or hurt me?
        - Does it follow from my preferences?
    - Replace beliefs with more effective or helpful beliefs. Provide a list of methods to replace the beliefs and definitions/examples associated.

        - Preferences
        - Anti-awfulizing
        - High frustration tolerance
        - Anti-self-downing
        - Anti-other downing
        - Anti-life downing
    - Discussion: “By changing your negative beliefs into more helpful ones, you should feel better emotionally, behave in a more helpful manner, and feel better physically. “
        - Discuss differences between healthy vs. unhealthy emotions
        - Emotions become unhealthy when you feed pain with unhelpful thoughts
        - Ex. Change sadness into depression
        - Discuss secondary emotions

Healthy emotions	Unhealthy emotions
Happy, joyful	Manic
Excited, enthusiastic	Hyper
Loving, passionate	Jealous
Hopeful	Delusional
Peaceful, flowing, relaxed, calm	Apathetic
Irritated, annoyed	Angry, enraged, vengeful
Sad, disappointed	Depressed, hopeless, suicidal
Remorseful	Guilty, ashamed, embarrassed
Aware, eager, concerned, attentive	Anxious, fearful, panicky, helpless

Unhealthy negative emotions: anxiety, depression, rage, shame/embarrassment, hurt, jealousy, guilt, low frustration tolerance.

Healthy negative emotions: concern, sadness and appropriate grief, appropriate annoyance, regret, high frustration tolerance.

Summary of the session and assign homework

Homework: Practice the ABCDE approach—goals is to do so 30 days.

Third Session

Brief update and mood check
Bridge from last session and setting agenda of the current session
Review ABCDEF homework assignment

- Encourage the individual to see links between problems on the problem list.
- Encourage them to share and verbalize their cognitive vulnerabilities

Introduce

- Focus on an event that happened over the last week related to vision loss.

Introduce the topic of control

- Create a sense of unconditional self, other, and life-acceptance.
- Introduce law of probability---
- Expect uncertainty
- DO not rate your worth according to what you do—
- When you insist life must be certain and just, this attitude limits you significantly. If you rigidly insist on perfect answers, you will not find them…and may give up on looking for flexible and good answers.
- View the situation objectively. Recognize there are things you can change and things you cannot.
- Use worksheet to list areas outside of my control and areas within my control (specifically related to the event used in the ABCDEF activity.
- When you focus on areas outside of your control—unhealthy emotions may present themselves.
- When you begin to think more about what you can control, you may transition to feeling more empowered, hopeful, and optimistic.

Summary of the session and assign homework

Homework: Work through the rest of the control worksheet. Answer the questions are the end. Ask yourself: "For just a moment, focus upon what is in your control. Then ask yourself what small step you can take today that will be helpful, ethical, and INSIDE my circle of control?" and/or ABCDE worksheet if needs more work.

Fourth Session

Brief update and mood check

Bridge from the last session and setting an agenda of the current session

Review homework

Introduce Emotive and behavioral techniques

- "Sometimes we have to deal with stressful events and may not have enough time to practice or focus cognitive techniques. On those days, you can do behavioral techniques instead, such as activity planning, distraction, or relaxation. Focus on techniques applicable to travel situations."
- Teach relaxation exercise and the purpose of relaxation techniques.
- Start by introducing diaphragmatic breathing

    - Diaphragm is a large muscle at the base of the lungs. It slows your breathing rate down, decreases oxygen demand, and can lower heart rate.
    - Model Breathing technique
    - The goal is 6-7 breaths per minute.
- Visualization: “Focus on your breath. Visualize a time you were upset, anxious, or angry. Develop a vivid image in your mind and see it transform in front of you. Now try to change those feelings into more healthy feelings. Get a vivid picture of the vent and allow yourself to only feel the health emotion. “
    - Discuss strategies used in activity.

Summary of the session and assign homework

Homework: Self-monitor use of diaphragmatic breathing and visualization over the next week.

Fifth Session

Brief update and mood check

Bridge from last session and setting agenda of the current session

Review homework

Practice Introduce humorous poems/songs. Practice breathing and visualization if needed.

ABCDEF activity focused on an event related to orientation and mobility
- Provide modeling and instruction if needed
- Encourage the individual to challenge cognitive distortions and see the connections
- Discuss what strategies they used in the moment and/or what they could have done.
- Review breathing, visualization, areas of control, and positive self-talk.

Summary of the session and assign homework

Homework: Self-monitor cognitive, emotive, and behavioral techniques used over the week and/or ABCDE worksheet.

Sixth Session

Brief update and mood check

Set an agenda

Summarize therapy over the last 5 sessions. Open-up for discussion and questions related to things that helped or did not help.

Discuss using a positive coping statement that will trigger a positive philosophy (from REBT activity guide book)

- Example: “someone gossips about you, and your irrational philosophy may be triggered. ‘people must only say nice things about me.’ THE ABCDEF model helps you identify that this demand has no evidence, doesn’t serve you and is illogical because others can think whatever they chose. A coping statement is a phrase that would help you trigger this rational philosophy. You could say, ‘what other people think about me is none of my business.’ This could cue your effective philosophy that is not helpful to worry about what other people think because it is out of your control. It takes away your focus from things that are within your control.”

End by asking what the subject learned from therapy and how they plan to manage IB and unhealthy emotions on their own in the future.

Appendix E

The Outcome Questionnaire (OQ-45.2)

Instructions: Looking back over the last week, including today, help us understand how you have been feeling. Read each item carefully and mark the box under the category which best describes your current situation. For this questionnaire, work is defined as employment, school, housework, volunteer work, and so forth.

Keep an eye out for reversed numbers.**

Session #

Date:

1. I get along well with others

Never=4; Rarely=3;Sometimes=2; Frequently=1; Always=0

2. I tire quickly

Never=0; Rarely=1; Sometimes=2; Frequently=3; Always=4

3. I feel no interest in things

Never=0; Rarely=1; Sometimes=2; Frequently=3; Always=4

4. I feel stressed at work/school

Never=0; Rarely=1; Sometimes=2; Frequently=3; Always=4

5. I blame myself for things

Never=0; Rarely=1; Sometimes=2; Frequently=3; Always=4

6. I feel irritated

Ne**ver=0; Rarely=1; Sometimes=2; Frequently=3; Always=4**

7. I feel unhappy in my marriage/ significant relationship

Never=0; Rarely=1; Sometimes=2; Frequently=3; Always=4

8. I have thoughts of ending my life

Never=0; Rarely=1; Sometimes=2; Frequently=3; Always=4

9. I feel weak

Never=0; Rarely=1; Sometimes=2; Frequently=3; Always=4

10. I feel fearful

Never=0; Rarely=1; Sometimes=2; Frequently=3; Always=4

11. After heavy drinking, I need a drink the next morning to get going. (if you do not drink, mark never).

Never=0; Rarely=1; Sometimes=2; Frequently=3; Always=4

12. I find my work/school satisfying

Never=4; Rarely=3; Sometimes=2; Frequently=1; Always=0

13. I am a happy person

Never=4; Rarely=3; Sometimes=2; Frequently=1; Always=0

14. I work/study too much

Never=0; Rarely=1; Sometimes=2; Frequently=3; Always=4

15. I feel worthless

Never=0; Rarely=1; Sometimes=2; Frequently=3; Always=4

16. I am concerned about family troubles

Never=0; Rarely=1; Sometimes=2; Frequently=3; Always=4

17. I have an unfulfilling sex life

Never=0; Rarely=1; Sometimes=2; Frequently=3; Always=4

18. I feel lonely

Never=0; Rarely=1; Sometimes=2; Frequently=3; Always=4

19. I have frequent arguments.

Never=0; Rarely=1; Sometimes=2; Frequently=3; Always=4

20. I feel loved and wanted.

Never=4; Rarely=3; Sometimes=2; Frequently=1; Always=0

21. I enjoy my spare time

Never=4; Rarely=3; Sometimes=2; Frequently=1; Always=0

22. I have difficulty concentrating

Never=0; Rarely=1; Sometimes=2; Frequently=3; Always=4

23. I feel hopeless about the future

Never=0; Rarely=1; Sometimes=2; Frequently=3; Always=4

24. I like myself

Never=4; Rarely=3; Sometimes=2; Frequently=1; Always=0

25. Disturbing thoughts come into my mind that I cannot get rid of

Never=0; Rarely=1; Sometimes=2; Frequently=3; Always=4

26. I feel annoyed by people who criticize my drinking (or drug use) (If not applicable, mark never)

Never=0; Rarely=1; Sometimes=2; Frequently=3; Always=4

27. I have an upset stomach

Never=0; Rarely=1; Sometimes=2; Frequently=3; Always=4

28. I am not working/studying as well as I used to

Never=0; Rarely=1; Sometimes=2; Frequently=3; Always=4

29. My heart pounds too much

Never=0; Rarely=1; Sometimes=2; Frequently=3; Always=4

30. I have trouble getting along with friends and close acquaintances

Never=0; Rarely=1; Sometimes=2; Frequently=3; Always=4

31. I am satisfied with my life

Never=4; Rarely=3; Sometimes=2; Frequently=1; Always=0

32. I have trouble at work/school because of drinking or drug use (If not applicable, mark "never")

Never=0; Rarely=1; Sometimes=2; Frequently=3; Always=4

33. I feel that something bad is going to happen

Never=0; Rarely=1; Sometimes=2; Frequently=3; Always=4

34. I have sore muscles

Never=0; Rarely=1; Sometimes=2; Frequently=3; Always=4

35. I feel afraid of open spaces, of driving, or being on buses, subways, and so forth.

Never=0; Rarely=1; Sometimes=2; Frequently=3; Always=4

36. I feel nervous

Never=0; Rarely=1; Sometimes=2; Frequently=3; Always=4

37. I feel my love relationships are full and complete

Never=4; Rarely=3;Sometimes=2; Frequently=1; Always=0

38. I feel that I am not doing well at work/school

Never=0; Rarely=1; Sometimes=2; Frequently=3; Always=4

39. I have too many disagreements at work/school

Never=0; Rarely=1; Sometimes=2; Frequently=3; Always=4

40. I feel something is wrong with my mind

Never=0; Rarely=1; Sometimes=2; Frequently=3; Always=4

41. I have trouble falling asleep or staying asleep

Never=0; Rarely=1; Sometimes=2; Frequently=3; Always=4

42. I feel blue

Never=0; Rarely=1; Sometimes=2; Frequently=3; Always=4

43. I am satisfied with my relationships with others

Never=4; Rarely=3; Sometimes=2; Frequently=1; Always=0

44. I feel angry enough at work/school to do something I might regret

Never=0; Rarely=1; Sometimes=2; Frequently=3; Always=4

45. I have headaches

Never=0; Rarely=1; Sometimes=2; Frequently=3; Always=4

Appendix F

19 Item Acceptance and Self-Worth Adjustment Scale

Directions: Please answer the items below using a four-point rating scale of 1-4 (strongly agree, agree, disagree, and strongly disagree).

1. **On the whole, I am satisfied with myself (E)(+)**

4=strongly agree, 3=agree, 2=disagree, 1=strongly disagree

2. **At times I think I am no good at all (E) (-)**

1=strongly agree, 2=agree, 3=disagree, 4=strongly disagree

3. **I am able to do things as well as most other people (E) (+)**

4=strongly agree, 3=agree, 2=disagree, 1=strongly disagree

4. **I certainly feel useless at times (E) (-)**

1=strongly agree, 2=agree, 3=disagree, 4=strongly disagree

5. **I feel that I do not have much to be proud of (E) (-)**

1=strongly agree, 2=agree, 3=disagree, 4=strongly disagree

6. **I feel that I am a person of worth, at least on an equal plane with others (E) (+)**

4=strongly agree, 3=agree, 2=disagree, 1=strongly disagree

7. **I wish I could have more respect for myself (E) (−)**

1=strongly agree, 2=agree, 3=disagree, 4=strongly disagree

8. **I take a positive attitude toward myself (E) (+)**

4=strongly agree, 3=agree, 2=disagree, 1=strongly disagree

9. People with my sort of (visual) problem are constantly worried about what might happen to them (AT) (−)

1=strongly agree, 2=agree, 3=disagree, 4=strongly disagree

10. People with my sort of (visual) problem feel that they are worthless (AT) (−)

1=strongly agree, 2=agree, 3=disagree, 4=strongly disagree

11. It's what I can do to help myself that's really going to make the difference (LC) (+)

4=strongly agree, 3=agree, 2=disagree, 1=strongly disagree

12. It's up to me to make sure I make the best of my future in these circumstances (LC) (+)

4=strongly agree, 3=agree, 2=disagree, 1=strongly disagree

13. It makes me feel very sad to see all the things others can do that I cannot (AC) (−)

1=strongly agree, 2=agree, 3=disagree, 4=strongly disagree

14. Because of my (visual) problems, I have little to offer other people (AC) (−)

1=strongly agree, 2=agree, 3=disagree, 4=strongly disagree

15. In spite of my (visual) problems I feel satisfied with my abilities (AC) (+)

4=strongly agree, 3=agree, 2=disagree, 1=strongly disagree

16. In just about everything, my (visual) problems are so annoying that I can't enjoy anything (AC) (−)

1=strongly agree, 2=agree, 3=disagree, 4=strongly disagree

17. I give up on things before completing things (SE) (−)

1=strongly agree, 2=agree, 3=disagree, 4=strongly disagree

18. When I make plans, I am certain I can make them work (SE) (+)

4=strongly agree, 3=agree, 2=disagree, 1=strongly disagree

19. I do not seem to be capable of dealing with most problems that come up in life (SE) (−)

1=strongly agree, 2=agree, 3=disagree, 4=strongly disagree

TOTAL SCORE:

Appendix G

<u>RIBS</u>-Progressive Blindness Format

When people experience an upsetting event, they can have different thoughts about that event. For example, people could think: “The event should not have happened.” or “I did not want the event to happen, but bad things do happen.” or they could think both thoughts. When you think about your upsetting event, you could have different thoughts about it. Below are some thoughts people have had about upsetting events. Please indicate the extent to which you agree or disagree with each thought by writing the appropriate number. If you choose 3 (Neutral) it means that you do/did not have that belief. Try to be as accurate and as honest as you can, and try not to let your answer to one question influence your answers to other questions. There are no right or wrong answers. We are only interested in what you think about this event/situation.

Please mention the upsetting event: such as losing your vision

Strong Disagree=1 Disagree=2 Neutral=3 Agree=4 Strongly Agree=5

1. I absolutely must not lose my vision.
2. If I lose my vision, it doesn’t mean that I am worthless.
3. It is awful to lose my vision.
4. If I lose my vision, it means that I am not worthwhile.
5. It is unbearable to lose my vision.
6. I am always optimistic about my future.
7. I can stand (bear) losing my vision, although it is uneasy/difficult for me to tolerate it.
8. It is important for me to keep busy.
9. I really do not want to lose my vision, but I realize and accept that things do not have to always be the way I want them to be.

10. It is unpleasant and unfortunate to lose my vision, but not terrible.

11*. I condemn God/others/life for making me lose my vision.

12*. I accept God/others/life even if losing my vision is unfair.

*Please mark an X on the word(s) you refer to: God and/or others and/or life.

- Total irrational beliefs score: sum of the items: 1, 3, 4, 5,11
- Total rational beliefs score: sum of the items: 2, 7, 9, 10,12

SCORING RIBS-General Format

- Total irrational beliefs score: sum of the items: 1, 3, 4, 5,11
- Total rational beliefs score: sum of the items: 2, 7, 9, 10,12
- DEM score -item 1
- AWF score-item 3
- LFT score- item 5
- GE:
    - self-downing score: item 4
    - God/others/life downing/depreciating/condemning score: item 11

- PREF score –item 9
- BAD score –item 10
- FT score –7
- AC
    - self-acceptance score: item 2
    - God/others/life acceptance score: item 12

Note: Items 6 and 8 are for control only

References

Alresheed, F., Hott, B.L., Bano, C. (2013). Single-subject research: A synthesis of analytic methods. *Journal of Special Education Apprenticeship, 2*(1), 1-18.

Alvarez, M. F. (1997). Using REBT and supportive psychotherapy with post-stroke patients. *Journal of Rational-Emotive and Cognitive-Behavior Therapy,15*, 231-245.

American Foundation for the Blind (2020). Low vision and legal blindness terms and descriptions. https://www.afb.org/blindness-and-low-vision/eye-conditions/low-vision-and-legal-blindness-terms-and-descriptions

Beaty, L. A. (1994). Psychological factors and academic success of visually impaired college students. *Review*: *Rehabilitation and Education for Blindness & Visual Impairment, 26*(3), 131-139.

Ben-Rebeh, I., Grati, M., Bonnet, C., Bouassida, W., Hadjamor, I., Ayadi, H., Ghorbel, A., Petit, C., Masmoudi, S. (2016). Genetic analysis of Tunisian families with Usher syndrome type 1: toward improving early molecular diagnosis. *Molecular Vision, 22*, 827–835.

Bodsworth, S. M., Clare, I. C. H., Simblett, S. K., Deafblind UK. (2011). Deafblindness and mental health, psychological distress, and unmet need among adults with dual sensory impairment. *The British Journal of Visual Impairment, 29*(1), 6-26.

Centers for Disease Control and Prevention (2020, November 20). *Covid-19 Outbreak= New York City, February 29-June 2020*. https://www.cdc.gov/mmwr/volumes/69/wr/mm6946a2.htm

Cluver, J. (2004) How brief can effective psychotherapy be?. *Primary Care Companion*

Journal of Clinical Psychiatry, 6(2) 89-90.

Cristea, I.A., Stefan, S., David, O., Mogoase, C. (2016). REBT in the Treatment of Anxiety Disorders in Children and Adults. Springer.

David, D., Cotet, C., Matu, S., Mogoase, C., Stefan, S. (2018). 50 years of rational-emotive and cognitive-behavioral therapy: A systematic review and meta-analysis. *Journal of Clinical Psychology.* 74(3):304-318. doi: 10.1002/jclp.22514.

David, D. (2014). The Empirical Status of Rational Emotive Behavior Therapy (REBT) Theory & Practice. Retrieved from: http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.692.5568&rep=rep1&type=pdf

Dammeyer, J. (2012). Identification of congenital deafblindness. *British Journal of Visual Impairment, 30*(2), 101-107.

Dammeyer, J. (2015). Deafblindness and dual sensory loss research: Current status and future directions, *World Journal of Otorhinolaryngology, 5*(2), 37-40.

DiGiuseppe, R., & David, O. (2015). Rational Emotive Behavioural Approaches. In H. T. Prout, & A. L. Fedewa (Eds.). *Counseling and Psychotherapy with Children and Adolescents: Theory and Practice for School and Clinical Settings, Fifth Edition*. Hoboken, NJ: Wiley & Sons.

DiGiuseppe, R. & Doyle, K. (2019). Rational Emotive Behavior Therapy. In K. Dobson (Eds.). *Handbook of Cognitive Behavior Therapy, 4th Edition*. New York; Guilford.

DiGiuseppe, R., Doyle, K., Dryden, W., & Backx, W. (2014). A practitioner's guide to rational emotive behavior therapy (3rd ed.). New York: Oxford University Press.

DiGiuseppe, R., Leaf, R., Gorman, B., & Robin, M. W. (2018). The development of a measure of irrational/rational beliefs. *Journal of Rational-Emotive & Cognitive-Behavior Therapy, 36*(1), 47-49.

Dreer, L. E., Elliott, T. R., Fletcher, D. C., & Swanson, M. (2005). Social problem-solving abilities and psychological adjustment of persons in low vision rehabilitation. *Rehabilitation Psychology, 50*(3), 232-238.

Dunn, D.S., & Andrews, E.E. (2015). Person-first and identity-first language: Developing psychologists' cultural competence using disability language. *American Psychologist, 70*(3), 255-264.

Ellis, L., & Hodges, L. (2013). Life and changes with Usher: The experiences of diagnosis for people with Usher syndrome. Birmingham, United Kingdom: University of Birmingham School of Education. Retrieved from http://www.birmingham.ac.uk/Documents/college- social-sciences/education/projects/final-report-on-life-and-change-with-usher.pdf

Gage, N. & Lewis, T.J. (2012). Analysis of effect for single-case design research. *Journal of Applied Sport Psychology, 25*, 46-60.

Garcy, P.D. (2009). The REBT Super-Activity Guide. United States.

Gavita, O., DiGiuseppe, R. A., David, O. A., & Del Vecchio, T. (2011). The development and validation of the parent rational and irrational beliefs scale. *Procedia Social and Behavioral Sciences, 30*, 2305-2311.

Gonzalez, J.E., Nelson, J.R., Gutkin, T.B., Saunders, A., Galloway, A., & Shwery, C.S. (2004). Rational Emotive Therapy with Children and Adolescents: A meta-analysis. *Journal of Emotional and Behavioral Disorders,12*(4), 222–235.

Gough, D.L. (1990). Rational-emotive therapy: A cognitive-behavioral approach to working with hearing impaired clients. *JADARA, 23*(4), 96-104.

Hezel, D.M., & Simpson, H.B. (2019). Exposure and response prevention for obsessive-compulsive disorder: A review and new directions. *Indian Journal of Psychiatry, 61*, S85-S92.

Hollon, S. D., & DiGiuseppe, R. (2010). Cognitive psychotherapies. In J. C. Norcross, & G. VandenBos (Eds.) *History of psychotherapy: Continuity and change (2nd ed.).* Washington, DC: American Psychological Association.

Hogner, N. (2015). Psychological stress in people with dual sensory impairment through usher syndrome type 11. *Journal of Visual Impairment and Blindness, 109*(3).

Huebner, K. (2000). Visual impairment. In M. C. Holbrook & A. J. Koenig (Eds.), *Foundations of Education: History and theory of teaching children and youths with visual impairments.* (pp. 55-76) New York: AFB Press.

Huurre, T., & Aro, H. (2000). The psychosocial well-being of Finnish adolescents with visual impairments versus those with chronic conditions and those with no disabilities. *Journal of Visual Impairment & Blindness, 94*(10), 625-637.

Individuals with Disabilities Education Act of 2004, 300.8 (c) (2)

Jalali, M.D.M., Moussavi, M.S., Yazdi, S.A.A., & Fadardi, J.S. (2014). Effectiveness of rational emotive behavior therapy on psychological well-being of people with late blindness. *Journal of Ration-Emotive & Cognitive-Behavior Therapy, 32*, 233-247.

Karlsson, J. S. (1998). Self-reports of psychological distress in connection with various degrees of visual impairment. *Journal of Visual Impairment & Blindness, 92*(7), 483-490.

Kef, S. (2002). Psychosocial adjustment and the meaning of social support for visually impaired adolescents. *Journal of Visual Impairment & Blindness*, *96*(1), 22-37.

Kerongo, S. M.O. (2020). Rational emotive behavior therapy in mitigating depression and enhancing academic performance of deaf and hard of hearing adolescents in selected primary schools in Nairobi county Kenya [Unpublished doctoral dissertation]. Daystar University.

Konarska, J. (2007). Young people with visual impairments in difficult situations. *Social Behavior and Personality, 35(*7), 909-918.

Lambert, M.J., Burlingame, G.M., Umphress, V., Hansen, N. B., Vermeersch, D.A., Clouse, G.C., & Yanchar, S.C. (1996). The reliability and validity of the outcome questionnaire. C*linical Psychology and Psychotherapy, 3*(4), 249-258.

Lane, H. Ethnicity, ethics, and the deaf-world. *Journal of Deaf Studies and Deaf Education, 10*(3), 291-310.

Lenz, A. S. (2012). Calculating effect size in single-case research: A comparison of nonoverlap methods. *Measurement and Evaluation in Counseling and Development*, *46*(1), 64-73.

Leo, D., Hickey, P., Meneghel, G., Cantor, C., & Franzp, M. (1999). Blindness, fear of sight loss, and suicide. *Psychosomatics*, *40*(4), 339-344.

Lowenfeld, F. (1975). *The changing status of the blind*. Springfield, Illinois: Charles C Thomas.

Mahigir, F., Khanehkeshi, A., & Karimi, A. (2012). Psychological treatment for pain among cancer patients by rational emotive behavior therapy-efficacy in both India and Iran. *Asian Pacific Journal of Cancer Prevention, 13*(9), 4561-4565.

Malkinson, R., & Bar-Tur L. (2019) REBT with Ageing Populations. In: Dryden W., Bernard M. (eds) REBT with Diverse Client Problems and Populations. Springer, Cham.

McDonnal, M. C., & Cmar, J. L. (2019). Services for consumers who are deafblind: Vocational rehabilitation agency service models utilized and their effectiveness. *Journal of Visual Impairment & Blindness, 113*(1), 19-31.

Michiels, B., Heyvaert, M., Meulders, A., & Onghena, P. (2016). Confidence intervals for single-case effect size measures based on randomization test inversion. *Behavior Research Methods, 49*, 363-381.

Miles, B. (2018). Overview on deafblindness. https://nationaldb.org/library/page/1934

Montgomery, G.H., David, D., DiLorenzo, T.A., & Schnur, J.B. (2007). Response expectancies and irrational beliefs predict exam-related distress. *Journal of Rational Emotive Cognitive Behavior Therapy, 25*(1), 17-34.

Montgomery, G.H., Sucala, M., Dilon, M.J., & Schnur, J.B. (2017). Cognitive behavioral therapy plus hypnosis for distress during breast radiotherapy: A randomized trial. *The American Journal of Clinical Hypnosis, 60*(2), 109-122.

National Center on Deaf-Blindness (2020). 2019 National deaf-blind child count. https://www.nationaldb.org/products/national-child-count/report-2019

National Eye Institute (2019). Usher Syndrome. https://www.nei.nih.gov/learn-about-eye-health/eye-conditions-and-diseases/usher-syndrome

National Federation of the Blind (2015). The deaf-blind dilemma. https://www.nfb.org/sites/www.nfb.org/files/images/nfb/publications/bm/bm15/bm1504/bm150402.htm

National Institute on Deafness and Other Communication Disorders. (2017). Usher syndrome. https://www.nidcd.nih.gov/health/usher-syndrome#1structure and psychometric properties.

Olive, M. L., & Franco, J. H. (2008). (Effect) size matters: And so, does the calculation. *The Behavior Analyst Today, 9*(1), 5-10

Parker, R. I. & Vannest, K. J. (2009). An improved effect size for single case research: Non-overlap of all pairs (NAP). *Behavior Therapy, 40*(4), 357-367.

Parker, R.I., Vannest, K.J., Davis, J.L. (2011). Effect size in single-case research: A review of nine nonoverlap techniques. *Behavior Modification, 1-20.*

Roy, A., & MacKay, G. (2002). Self-perception and locus of control in visually impaired college students with different types of vision loss. *Journal of Visual Impairment & Blindness, 96*(4), 254-266.

Ryan, R.M., Lynch, M.F., Vansteenkiste, M., & Deci, E.L. (2011). Motivation and autonomy in counseling, psychotherapy, and behavior change: A look at theory and practice. *The counseling psychologist, 39*(2), 193-260.

Sacks, S. B. (2004). Rational emotive behavior therapy, *Journal of psychosocial nursing & mental health services, 42*(5), 22-31.

Surilena, S., Ismail, R.I., Irwanto, I., Djoerban, Z., Utomo, B., Sabarinah, S., Iwan, I., & Akip, A. A. P. (2014). The effect of rational emotive behavior therapy (REBT) on antiretroviral therapeutic adherence and mental health in women infected with hiv/aids. *The Indonesian Journal of Internal Medicine, 46*(4), 283-291.

Swartz, H.A., Grote, N.K., and Graham, P. (2014) Brief interpersonal psychotherapy

(IPT-B): Overview and review of evidence. *American Journal of Psychotherapy, 68*(4), 443-462.

Tabrett, D. R., & Latham, K. (2010). Derivation of the acceptance and self-worth adjustment scale. *Journal of Optometry and Vision Science, 87*, 899-907.

Tolman, J., Hill, R. D., Kleinschmidt, J. J., & Gregg, C. H. (2005). Psychosocial adaptation to visual impairment and its relationship to depressive affect in older adults with age-related macular degeneration. *Gerontologist, 45*(6), 747.

Tuttle, D., & Tuttle, N. (2004). *Self-esteem and adjusting to blindness: The process of responding to life's demands.* (2004). Springfield, Illinois: C.C. Thomas.

United States Code, 2006 Edition, Supplement 4, Title 29- LABOR

Waern, M., Rubenowitz, W., Rubeson, B., Skoog, I., Wilhelmson, K., Allebeck, P. (2002). Burden of illness and suicide in elderly people: Case control study. *BMJ Research Articles*, 1355-1357.

Wahl, H. W. Heyl, V. Drapaniotis, P. M. Hörmann, K. Jonas, J. B. Plinkert, P. K. (2013). Severe vision and hearing impairment and successful aging: A multidimensional view. *Gerontologist, 53*(6), 950–962.

Watson, P. J., & Workman, E. A. (1981). The non-concurrent multiple baseline across-individuals design: an extension of the traditional multiple baseline design. *Journal of Behavior Therapy and Experimental Psychiatry, 12*(3), 257-259.

Wolfe, K., Barton, E.E., & Meadan, H. (2019) Systematic protocols for the visual analysis of single-case research data. *Behavior Analysis in Practice, 12,* 491-502.

Zatta, M., & McGinnity, B. (2016). An overview of transition planning for students who are deafblind. *American Annals of the Deaf, 161*(4), 474-485.

Vita

Name	*Chelsey Laurito*
Baccalaureate Degree	*Bachelor of Science Arts, St. Francis University, Loretto, Major: Psychology*
Date Graduated	*May 2012*
Master's Degree	*Master of Science, Florida State University, Tallahassee, Major: Curriculum and Instruction, Visual Disabilities*
Date Graduated	*December 2014*
Master's Degree	*Master of Science, St. John's University, Queens, Major: School Psychology*
Date Graduated	*May 2019*