

Research Article

IMPROVING EMOTIONAL DYSREGULATION AND WELL-BEING AMONG VISUALLY CHALLENGED ADOLESCENTS: EFFICACY OF ACCEPTANCE AND COMMITMENT THERAPY (ACT)

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Abstract

The current study aimed to determine efficacy of the Acceptance and Commitment Therapy (ACT) for the emotional dysregulation and mental health of visually impaired adolescents. In a quantitative pre-post design, a purposive convenient sample of seven visually impaired adolescents with age range of 18 to 23 was recruited. Difficulties in emotion regulation scale were used to recruit the participants. After baseline assessment participants were subjected to six individual sessions of acceptance and commitment therapy. One week after the completion of intervention phase post test scores were obtained. A paired sample t-test and Reliable Change Index were applied. Results showed that there was significant difference of emotion dysregulation and mental health. Individual analyses were also performed. Tau-u statistics showed that ACT is an effective approach to enhance emotion dysregulation and mental health issues in visually impaired adolescent. The results of the study have important implications for clinical practitioners. *ASEAN Journal of Psychiatry, Vol. 23(1) January, 2022; 1-15.*

Keywords: Visual Impairment, Emotion Dysregulation, Mental Health, Acceptance and Commitment Therapy

Introduction

Vision is the queen of all senses. Low sightedness and blindness is among the most noticeable and considerable among people afflicted with disabilities. Among developed as well as developing countries Low sightedness and blindness are two important health issues in.

According to the World Health Organization nearly 110 million people have a severe visual impairment and 38 million people have blindness worldwide. Blindness and low sightedness accompanied many problems such as the lack of basic skills, psychological security, job opportunities and career goals [1]. Present study

focused on how acceptance and commitment therapy is effective for improving the emotional dysregulation and ultimately enhancing mental health issues experienced by visually challenged college students. Blinds and visually impaired being not able to see the world experience stress which most of the times exceed an individual's capacity to effectively cope and this is when mental health care may be required.

Rather than promoting well-being the main focus of traditional mental health care was on treating mental symptoms and disorders [2]. However, it has been acknowledged that just mere absence of mental illness does not ensure mental health. People with sensory impairment suffer from

reduced psychosocial functioning and communication problems [3]. Koenes et al. revealed that the frequency of depression among visually impaired adolescents is greater than that in normal sighted young individuals [4]. Dawn in his study stated that visually impaired students make less interaction with their environment as compared to sighted people resulting in lower social wellbeing [5].

Due to their low expressiveness and social skills visually impaired individuals gradually become depressed, introvert, and anxious. Owsley et al. well-documented that students with visual impairment and blindness are usually presented with social isolation, depression and other emotional problems such as fear, frustration, inadequacy and sadness [6]. An influential factor contributing to mental health issues is the lack of emotion regulation. According to Baurain et al. emotion regulation is a kind of ability that can equip people with the use of regulative strategies and then prevent further problems [7].

Blindness

World Health Organization international statistical classification of diseases, Injuries and Causes of Death (ICD-10) defined low vision as, “a visual acuity of less than 6/18, but equal to or better than 3/60, or a corresponding visual field loss of less than 20°”. Furthermore blindness is referred to, “a visual acuity of less than 3/60, or corresponding visual field loss of less than 10°. According to ICD-10 “a visual acuity loss or visual field loss, which alone would not be severe enough to be classified as visual impairment, may in combination be disabling.

Therefore, using visual acuity and visual fields separately to assess visual impairment is inadequate for expressing a person’s visual functioning, that is, his or her ability or disability to carry out the activities of daily living”. According to the WHO definitions, there are four categories of visual function *i.e.* normal vision, moderate visual impairment, severe visual impairment and blindness. Relationship among these four categories is shown in following figure.

Mental Health

Keyes defined mental health as an individual’s complete mental state in which he/she is safe from psychopathologies and flourished with satisfactory levels of psychological, social and emotional well-being [8].

Emotional wellbeing included positive affect and acknowledged eminence of life. Emotional well-being sometimes referred to as experienced happiness and hedonic well-being. Emotional wellbeing refers to the emotional quality of an everyday experience of an individual including the intensity and frequency of experiences of fascination, joy, anxiety, anger, sadness, and affection that make one’s life unpleasant or pleasant. Psychological well-being is defined as the extent to which persons are flourishing in one’s private lives [9]. Psychological wellbeing is also known as eudemonic wellbeing. Individuals displaying psychological wellbeing have self-acceptance, self-sufficiency, optimistic association with others and personal progress. They are environmentally friendly and spend meaningful life.

Social well-being is defined as the extent to which persons are flourishing in social context, in broader as well as local communities maintained that it is essential to comprehend the social operation of individuals at their optimal level with respect to their social commitment and societal surroundings [10]. Social well-being involves five dimensions describing optimal functioning of individuals in society *i.e.* social integration, social contribution, social actualization, social acceptance and social coherence [10].

Visual Impairment and Mental Health

A study was conducted on mental health of visually impaired individuals. Results revealed that prevalence of depressive symptoms were 50% higher among visually impaired as compared to those having normal vision [11].

Another recent study clearly identified a relationship among difficulties faced due to visual impairment and decreased psychological wellbeing among visually impaired subjects [12].

Prevalence rate of suicide is much higher among individuals with visual impairment as compared to those with normal vision [13].

Additionally, individuals with visual impairment have behavioural and social impacts. These impacts lead to reduced psychological wellbeing. Visual impairment lead to reduction in people level of mobility influenced their capability to take on daily living activities, and restrict their free time activities. So leading to reduced psychological, social and emotional wellbeing. Moreover, research by Verstraten et al. identified that the person with visually impairment are more liable to experience loneliness, that resulted in reduction in their capability to get used to their visual impairment [14].

Treatment Research and Mental Health

Mental health problems prevalence rate among visually impaired adolescents are noticeably high. Kessler et al. stated that almost 75% visually impaired adolescents reported to have mental health problems [15].

Furthermore if the onset of mental health problem is within the age range of 12-24 years there will be a greater association with disorders that continue into later life years. Patel et al. stated that mental health problems are the principal contributor of ailment in individuals with visual disabilities [16]. Keeping these prevalence rates in view, researchers make efforts to develop and evaluate psychological interventions for enhancing mental health among visually impaired adolescents. Current psychiatric diagnostic system has greatly influenced the treatment focused research. As present classification system emphasizes on symptoms as basis for diagnoses, that eventually leads to intervention development that focuses on symptom relief rather than remedial or protective efforts [17].

Hayes method of intervention *i.e.* Acceptance and Commitment therapy was used in the current study to deal effectively with mental health issues of visually impaired participants having no diagnosed psychological disorder.

Emotion Regulation

Gratz et al. defined emotion regulation as a multifaceted construct that involves an individual's understanding, awareness and acceptance of his/her emotions, furthermore during negative emotional experience, emotion regulation is characterized as the capability to control to control impulsive behaviors when. Emotion regulation is also considered as the ability to adapt schemes for handling emotions according to situational hassles and objectives [18].

The construct of emotion regulation is of special significance to be explored with reference to visually impaired adolescents [19]. The emotional state of visually impaired individuals is affected by normal environmental stressors that they experienced throughout their developmental span [20]. Literature revealed that individual during adolescent phase of development experienced greater than before emotional reactivity, much more environmental stressors, and diminished environmental support for emotion regulation. This experience became worse for visually impaired adolescents. These situations lead to greater emotion dysregulation particularly for young people with physical disabilities.

McLaughlin et al found that emotion dysregulation is positively associated with symptoms of aggressive behaviour, anxiety, and eating disorder [21]. Furthermore emotion dysregulation is considered as risk factor for mental health problems of adolescent. Researchers emphasized that during treatment and preventive efforts emotion dysregulation should be a target of intervention. Chambers et al. reported that directly focusing on difficulties in emotion regulation can enhance existing psychological functioning and possibly reduce the prevalence of problematic behaviour later in life [22].

Treatment Research and Emotion Dysregulation

Few studies examined the treatment of emotion dysregulation in adolescents with disabilities as

visual impairment. Present study focused on acceptance and commitment therapy [23]. ACT recommends that experiential avoidance of ones hidden experiences is core reason of psychological problems. Experiential avoidance is defined as an effort to avoid or escape personal experiences such as thoughts, emotions, memories, and bodily sensations.

ACT emphasized on focusing accepting emotional experiences in actual state without demanding to avoid or escape them In few recent studies emotion regulation is considered as interlink between functional diagnostic aspect of experiential avoidance and direct treatment implications [24].

Acceptance and Commitment therapy

Acceptance and Commitment Therapy (ACT) is an action-oriented dimension to psychotherapy. ACT stems from cognitive behavioural therapy and traditional behaviour therapy. Client is taught not to avoid, deny, and struggle with his/her inner emotions and, in its place, client is encouraged to acknowledge that these inner feelings are suitable responses to present situations.

Furthermore, it is suggested that these feelings should not prevent him/her from excelling in their lives. The principal aim of ACT is to enhance flexibility in behavioural patterns with the goal of being cantered, open, and engaged in life through acceptance, commitment and mindfulness [25]. Psychological flexibility is defined by ACT model as contacting the present moment and behaving in the provision of one's individually selected values. Psychological inflexibility is affected by six fundamental processes: "experiential avoidance, inflexible attention, attachment to the conceptualized self, cognitive fusion, inaction, disruption of values, impulsivity, or avoidant persistence". Experiential exercises are effective to target the six core processes and stabilize them by: focusing attention to the current moment, acknowledging problematic personal experiences without trying to control, escape or suppress them, learning to step back and notice personal events as on-going experiences rather than literal

truths, viewing oneself as part of a context, connecting with what is personally important and meaningful, and engaging in values-based happenings. This model imparts itself well to definition of emotion regulation by Gratz et al.

Methods

Objectives

The main objective of present research was;

- To explore the level of psychological inflexibility, mental health issues and emotional dysregulation among blind adolescents
- To investigate the effectiveness of acceptance and commitment therapy to improve emotional dysregulation and mental health and psychological inflexibility of blind adolescents.

Hypothesis

- There will be increased emotional regulation scores following ACT in the post test as compared to pre-test.
- There will be increase in mental health scores following ACT in post-test as compared to pre-test.
- There will be increased psychological flexibility following ACT in post-test as compared to pre-test.

Research design

The current research was an open clinical trial that make use of a single subject AB design. A in the current study was Baseline phase while B represent the treatment phase (Acceptance and commitment therapy). The repeated measure (Mental Health Continuum-SF and Difficulties in Emotion Regulation Scale) was administered at the pre-treatment (Assessment 1) and post-treatment (Assessment 2).

Participants

Fifteen adolescents either having visual impairment or blindness were connected for initial screening from Government College. All participants were of intermediated and

graduation level. At initial phase eligibility of the participants were assessed. Potential participants were excluded if participants were taking any form of psychotropic medication during the six week prior to Assessment 1.

If the adolescent received other counselling services during their life period were also excluded from the study. Finally emotional dysregulation and mental health of the potential participants were assessed to be included in the study. To be part of the study, participant's scores on the Difficulties in Emotion Regulation Scale (DERS) needed to be greater than or equal to 100. This cut-off score was calculated by Weinberg et al. with the help of mean and standard deviation of the normative population of adolescents ($M=78.9$, $SD=23.2$).

By adding one standard deviation to the reported mean to we determine cut-off point to identify individual having regulation difficulties [26]. Subjects were included if they were diagnosed as Languishing on Mental Health continuum SF. According to Keys someone is the diagnosis as Languishing when subject feels 1 of the 3 hedonic well-being symptoms and feels 6 of the 11 positive functioning symptoms. Of the 15 participants contacted participation, eight gave consent, acceptance, and fulfil inclusionary criteria.

Measures

Informed consent form: Verbal as well as written consent was attained from the participants. The consent form ensures to the participants about their rights to withdraw from the study at any time without any penalty, promising the confidentiality of information.

Demographic information form: Demographic information sheet related to age, nature of blindness, level of education, birth order, number of siblings, presence of blindness among other family members and monthly family income was collected using demographic sheet

Difficulties in Emotion Regulation Scale (DERS): Emotional regulation is assessed using the Difficulty in Emotion Regulation Scale [18], DERS is a 36-item Likert-type scale. Higher

scores showed greater emotion regulation difficulties and vice versa.

The DERS has 6-subscales *i.e.* non-acceptance of emotional responses (No accept), difficulties engaging in goal-directed behaviour (Goals), impulse control difficulties (Impulse), lack of emotional awareness (Aware), limited access to emotion regulation strategies (Strategies), and lack of emotional clarity (Clarity). This measure was given at each assessment point (Assessment 1 and 2) and was used as the primary outcome measure in the study.

Mental Health Continuum-Short Form (MHC-SF): MHC-SF is a self-report questionnaire developed by Keyes for positive mental health assessment. MHC-SF is a 14 item scale each item is rated on 6-point Likert type scale. Response scheme of the scale includes 5=Every day, 4=Almost every day, 3=about 2 or 3 times a week, 2=About once a week, 1=Once or Twice and 0=Never.

MHC-SF has maximum score of 70 and minimum score of 0. The MHC-SF contains 3 dimensions of well-being *i.e.* Hedonic-emotional well-being, Eudemonic-social well-being and Eudemonic-psychological well-being Acceptance and Action Questionnaire-II (AAQ-II).

AAQ-II is a 7-item questionnaire served as the principal process measure of acceptance and commitment therapy. This is the most commonly used instrument of psychological inflexibility, the fundamental process targeted in Acceptance and Commitment therapy. Items are rated on a 7-point Likert type scale ranging from 1 "never true" to 7 "always true." The reliability and validity in past studies with college students on AAQ-II was found to be significantly adequate with an internal consistency of $\alpha=0.93$.

Procedure

Assessment 1: After the completion of the screening, consent and assent process assessment 1 begin. Participants were asked to report on the DERS. If the visually impaired adolescents had a minimum DERS score of 100, they were requested to report on the remaining self-report

measures (demographic form, MHC-SF and AAQ-II). Scores were recorded for final analysis.

Assessment 2: After one week of last ACT session *i.e.* 8-weeks after Assessment 1 DERS, MHC-SF and AAQ-II were administered to the participants.

Results

Table 1. Six weeks’ session plan for intervention

Acceptance and commitment therapy sessions: Almost 6 sessions (one per week) of ACT were provided to the participants. The data collected at the first ACT session (DERS and MHC-SF) and served as a baseline data point.

Therapeutic session	Goals	Techniques
Session 1: “Where Am I?”	<ol style="list-style-type: none"> 1. Develop rapport to facilitate the therapeutic process 2. Introduce the treatment model 3. Gather information from the participants about what thoughts and emotions they have to struggle with and in what way that were influencing their daily life functioning in daily. 	<ul style="list-style-type: none"> • Rapport building • Psycho-education on the functions of emotions? • Suffering inventory • The pain is gone, Now What?
Session 2: “Thoughts: Trapped Or Flexible?”	<ol style="list-style-type: none"> 1. Help participants understand how language creates suffering 2. Work on what type of activities do they perform to restrain or otherwise lessen, diminish, counteract or control their painful feelings, emotions, thoughts, and bodily sensations. 3. Focus on experiential avoidance <i>i.e.</i> rather than avoiding experiencing painful emotions try to accept them. 	<ul style="list-style-type: none"> • Don’t Think About Your Thoughts • The Coping Strategies Worksheet • The Blame Game
Session 3: “Willingness”	<ol style="list-style-type: none"> 1. Introduce the concept of control and acceptance. 2. Acquaint with the idea of learning from experience, being released from thought complications and comparing our actual experience of a difficulties with our feelings of a difficulties. 3. Foster willingness to increase motivation for behavior change. 	<ul style="list-style-type: none"> • Why willingness • Being willing out of breath
Session 4 “Fusion”	<ol style="list-style-type: none"> 1. How their mind generates thoughts? 2. How thoughts become fused with emotions and need de-fusion 3. Enable participants looking at their thoughts rather than from their thoughts 	<ul style="list-style-type: none"> • Monsters on the bus • Okay you are right, now what
Session 5: “Mindfulness – Being Present”	<ol style="list-style-type: none"> 1. Experiences of being in present rather than living with past or future worry, or procurement into difficult thought 2. Build up ways to intensify participant’s mindfulness experiences by asking them to be attentive to a lot of different types of experiences as soon as they enter into their present awareness. 	<ul style="list-style-type: none"> • Silent walking • Eating mindfully
Session 6: “Value and committed actions”	<ol style="list-style-type: none"> 1. Introducing the idea of spending life in a valued manner. 2. Identifying at least on positive individual attribute/value that would work. 	<ul style="list-style-type: none"> • Attending your own Funeral • Valued Domains • Ranking Values

Table 2. Means, Standard Deviations and t- values of pre-test post-test difference on DERS and its subscales, MHC-SF and its subscales and AAQ-II. (N=8).

Variables	Pre-test		Post-test		95% CI		
	(n=8)		(n = 8)		T	LL	UL
	M	SD	M	SD			
DERS	149.75	4.77	76.87	10.52	20.00**	64.26	81.48
No accept	25.62	1.68	11.75	2.71	16.24**	11.85	15.89
Goals	20.87	0.99	12.62	2.26	9.15**	6.11	10.38
Impulse	24.37	0.74	14.12	2.41	10.68**	7.98	12.51
Aware	25.62	0.91	11.50	1.92	23.13**	12.68	15.56
Strategies	33.37	1.50	15.62	3.29	23.66**	15.97	19.52
Clarity	19.87	1.24	11.25	1.38	12.22**	6.95	10.29
MHC-SF	12.25	4.30	35.25	3.24	12.17**	-27.46	-18.53
Emotional Wellbeing	2.75	0.88	10.37	1.40	13.49**	-8.96	-6.28
Social Wellbeing	4.75	1.48	11.87	1.64	9.59**	-8.88	-5.36
Psychological Wellbeing	4.75	2.37	13.00	1.30	8.14**	-10.64	-5.85
AAQ-II	38.12	2.58	19.26	2.18	36.62**	17.65	20.09

*df = 7, *: p<0.05, **: p <0.01; Note: CI=Confidence Interval; LL=Lower Limit; UL=Upper Limit*

Table showed that there was significant difference in pre- to post- treatment on study variables. In the sample participants score high on DERS on pre-treatment *i.e.*, (t (7)=20.00, p<0.01), and AAQ-II., (t (7)=36.62, p<0.01). On the other hand, participants score lower on perceived stress at pre-treatment *i.e.*, (t (7)=12.17, p<0.01). However, these results were consistent with the prevailing literature (Tables 1 and 2).

Reliable Change Index Calculations

To calculate change (*i.e.*, a reliable improvement or worsening) showed by the participants The Reliable Change Index (RCI) criterion by Jacobson et al. was used. An RCI was calculated for DERS and its subscales, MHC-SH and its subscales and AAQ-II (Table 3).

Table 3. RCI and Percentage change for DERS and its subscales, MHC- SF and its subscales and AAQ-II (N=8).

Variables	Assessment 1		Assessment 2		RCI	% change
	M	SD	M	SD		
Ders	149.75	4.77	76.87	10.52	7.82	72.88
No accept	25.62	1.68	11.75	2.71	2.75	13.87
Goals	20.87	0.99	12.62	2.26	1.62	8.25
Impulse	24.37	0.74	14.12	2.41	1.21	10.25
Aware	25.62	0.91	11.5	1.92	1.49	14.12
Strategies	33.37	1.5	15.62	3.29	1.49	17.75
Clarity	19.87	1.24	11.25	1.38	2.03	8.62
MHC-SF	12.25	4.3	35.25	3.24	8.08	23

Emotional wellbeing	2.75	0.88	10.37	1.4	1.65	7.62
Social wellbeing	4.75	1.48	11.87	1.64	2.78	7.12
Psychological wellbeing	4.75	2.37	13	1.3	4.46	8.25
AAQ-II	38.12	2.58	19.26	2.18	5.21	18.86

Note: RCI=Reliable Change Index

The DERS RCI was calculated. This yielded a significant value of RCI of 7.82 (>1.96) 72% (n=8) of the sample showed a reliable change on the DERS from pre to post-treatment. RCI was also calculated for subscale of DERS where No acceptance of emotional responses (no accept), lack of emotional clarity (clarity) showed significant change while difficulties engaging in goal directed (goals), impulse control difficulty (impulse), lack of emotional awareness (aware), limited access to emotion regulation strategies (strategies) showed non-significant change for pre to post-treatment.

The MHC-SF RCI was calculated. This yielded a significant value of RCI 8.08 (>1.96). 23% (n=8) of the sample showed a reliable change on the MHC-SF from pre- to post-treatment. RCI was also calculated for MHC-SF subscales *i.e.* Emotional Wellbeing, Social Wellbeing and

Psychological Wellbeing. All the subscale yielded a significant pre- to post- treatment change. The AAQ-II RCI was calculated. This yielded a significant value of RCI 5.21 (>1.96), 18% (n=8) of the sample showed a reliable change on the AAQ-II from pre- to post-treatment.

Individual analyses

For all participant's individual analyses were conducted. These analyses were completed by utilizing Tau-U calculations. Tau-U, the Greek letter τ used to denote it, is introduced by Kendall (1938). It is a nonparametric rank correlation coefficient. Tau-U is arithmetically bound between -1 and +1, like other correlation statistics (e.g., Pearson r), and its value characterizes the degree of agreement between two variables (Tables 4 and 5).

Table 4. Demographic Information of participants.

	P1	P2	P3	P4	P5	P6	P7
Age	18 years	18 years	19 years	19 years	19 years	22 years	23 years
Birth order	Middle	1st	Single child	1st	Last born	Last born	Last born
No. of siblings	5	3	zero	6	5	3	9
Family type	Nuclear	Nuclear	Extended	Extended	Extended	Nuclear	Extended
Qualification	12th grade	11th grade	11th grade	12th	BS(hons)	BS (hons)	BS (hons)
Family history of psychological illness	Nil	Grandfather diagnosed as depression	Drug abuse	Nil	Nil	Nil	Anxiety, depression and drug abuse
Family history of physical	Nil	Three siblings	Nil	Nil	Nil	One sister visually	Nil

illness		visually impaired				impaired	
Family history of physiological illness	Diabetes	Hypertension	Diabetes	Cardio-vascular disease, diabetes	Mother diabetic	Hyper-tension	Nil
Academic performance	Below average	Below average	Above average	Average	Above average	Above average	Below average
Sessions attended	6	5	6	6	6	6	6
Problem reported	Asking for help to write paper and quizzes	Lack of interest in academic activities, absences from college	Motivate to perform well but her disability act as barrier in fulfilling her dreams	She did her early education at an institute for special education. It's harder for her to manage the demands of mainstreaming education with her disability.	Difficulty in developing social relationships	Comfortable with environment. Motivate to excel more but her disability serve as a barrier in her performance	Lower communication skills, found semester system difficult, unable to form close relationship with friends

Table 5. Tau-U analysis for participants.

Participants	Scales	Raw scores		Tau	Z	P
		A1	A2			
1	DERS	144	55	-0.96	-7.02	0
	MHC-SF	9	29	0.73	3.3	0
	AAQ-II	34	16	-0.98	-3.13	0
	DERS	144	75	-0.91	-6.65	0
2	MHC-SF	8	36	0.92	4.18	0
	AAQ-II	38	18	-0.93	-3.13	0
	DERS	151	81	-0.88	-6.47	0
3	MHC-SF	7	40	0.94	4.27	0
	AAQ-II	40	20	-0.95	-3	0
	DERS	146	85	-0.75	-5.51	0
4	MHC-SF	10	34	0.76	3.44	0

	AAQ-II	37	17	-0.92	-3.19	0
	DERS	156	70	-0.98	-7.18	0
5	MHC-SF	13	36	0.81	3.65	0
	AAQ-II	40	20	-0.91	-3.13	0
	DERS	155	83	-0.88	-6.43	0
6	MHC-SF	17	38	0.71	3.21	0
	AAQ-II	41	20	-0.9	-3.13	0
	DERS	153	78	-0.88	-6.4	0
7	MHC-SF	17	35	0.63	2.84	0
	AAQ-II	35	19	-0.93	-2.93	0

The Tau-U analysis comparing the DERS scores at pre- and post-treatment phases was significant (Tau range between -0.98 to -0.75, Z range between -7.17 to -5.51, $p=0.00$). Negative tau-u support our directional hypothesis *i.e.* there will be significant decrease in difficulties in emotion regulation following ACT. The Tau-U analysis comparing the scores on MHC-SF at pre- and post-treatment phases was significant (Tau ranged between 0.92 to 0.63, Z ranged between 4.18 to 2.84, $p=0.00$). It supported our directional hypothesis *i.e.* there will be significant increase in mental health following ACT. The Tau-U analysis comparing the score on AAQ-II at pre- and post-treatment phases was significant (Tau=-0.98 to -0.90, Z ranged between -3.19 to -2.93, $p=0.00$) supported directional hypothesis *i.e.* there will be significant decrease in psychological inflexibility following ACT.

Discussion

The current study used a single subject A/B design. It was an exploratory open-trial. Current study examined the efficacy of ACT for blind adolescents having mental health issues and undergoing difficulties with emotion regulation. It was postulated that visually impaired adolescents who received the Acceptance and commitment therapy reported improved mental health and showed improvements in emotion regulation skills. Current study focused on psychological inflexibility resulting in

difficulties in emotional regulation and mental health issues, and focused to put participants on the path toward psychological flexibility by handling difficulties in emotion regulation and improving mental health issues.

The results of the current research revealed different levels of scores on the main and outcome measures. The data recommended those visually impaired participants who attended maximum of ACT sessions, established reliable enhancement in mental health, skills to regulate emotions and psychological flexibility. Those visually impaired adolescents who showed advancement in emotion regulation skills also showed enhancement in mental health *i.e.* emotional, social and psychological wellbeing. This is in line with previous researches showing strong association between emotion regulation and mental health [27]. Further studies showed emotion dysregulation was associated with mental diseases [28]. Consequently, those participants who advanced on skills to regulate emotion also progress in the direction of significant areas targeted within the ACT model and hence supported previous literature.

As one of the initial study to investigate the effectiveness of ACT with blind individuals the findings from this study establish preliminary promise. Along with progress in the field of mental health, current research focused to apply ACT to a Tran's diagnostic constructs *i.e.* mental health and emotion regulation rather than a

constructs with diagnostic label. The result from current research is in support with previous researches suggesting that ACT is an improved and suitable therapy to target trans diagnostic constructs [29].

It is suggested that ACT can be effectively used with adolescents. Present study added to existing literature by showing that ACT can be successfully used with adolescents having physical disabilities as visual impairment. Furthermore, Halliburton et al. delineated numerous ways in which ACT can be modified to meet the needs of adolescents having mental health issues in treatment by handling difficulties with emotion regulation. Present study is in line with existing literature [30].

The ACT protocol designed for current research emphasized experiential exercises, and engraving treatment strategies to personalized targets. One of the major reasons to use ACT for blind participants is to make them accept their challenges rather than avoiding them. The present research contributed to the existing literature, as most participants of previous studies had no physical disability. Current study enrolled blind participants from different educational and family background.

The present research also focused on one more significant suggestion put forward by researchers. As ACT emphasizes on assisting individuals take part in their routine activities centered on significant life aspects, in contrast to directing on reducing or eliminating symptoms of emotions. Present study followed their suggestion to incorporate mental health issues in the study as in their systematic review, reported that that few research have scrutinized ACT's effectiveness in enhancing mental health in addition to clinical outcomes in adolescents.

Kashdan et al. reported that the aim of ACT is to increase psychological flexibility. To fulfil this aim adolescent needs an ability to tolerate distressing thoughts and emotions. Present study focused on improving an individual's ability to regulate distressing thoughts and emotions which ultimately leads to enhanced mental health [31].

The present research was the original study of the effectiveness of ACT in treating visually impaired adolescents with difficulties in emotion regulation and mental health issues. The results of the current research offer initial promise for further exploration. Forthcoming research should continue exploring the effectiveness of ACT with physically disabled individuals and utilizing it to other transdiagnostic constructs, though integrating different dimensions that offer the prospect for more valuation of constructs that are nearer into realistic activities [32,33].

Conclusion

The present study was set out to explore the effectiveness of Acceptance and Commitment Therapy on emotion dysregulation and mental health issues of visually impaired adolescents. The results revealed that there was a significant difference in emotion dysregulation and mental health issues in post intervention analysis. The study concludes that ACT is an effective therapy for enhancing the mental health and emotional dysregulation of adolescents with physical disabilities.

Limitations and Future Recommendations

Although results of the present study appear promising, it is important to interpret the findings in light of limitations. Firstly, the findings are limited without long-term follow-up. Secondly, present study incorporated only female adolescents. Future researchers are recommended to extend the findings on male adolescents as well. Third, the sample size of the current research was relatively small, and of a limited age range, limiting research generalizability. Future studies would profit from larger sample sizes. Present study only compared pre-post intervention scores of experimental groups. Future studies are suggested to incorporate the role of control group.

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