

Internet-based Intervention for Depression among Schoolchildren

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Abstract: The study objective was to investigate the effect of an internet-based Rational Emotive Behaviour Intervention (REBI) on schoolchildren's depression. The 60 participants were investigated for 12-weeks using REBT depression manual. All participants completed baseline evaluation prior to starting the REBI and at the 4, 8 and 12 weeks. Participants completed the Center for Epidemiological Studies Depression Scale for Children (CES-DC). The statistical tool used for data analysis was ANOVA. The finding showed that there is no significant difference in the baseline measure of depression between schoolchildren in the treatment group and the waitlist controlled group. At 4th week, the result showed a significant reduction of depressive symptoms among school children in the treatment group (14.23 ± 3.89) compared with those in the waitlisted control group (35.26 ± 5.57), $F(1.58) = 287.40$, $p = 0.000$. At the 8th week, the result showed more significant reduction of depressive symptoms among school children in the treatment group (11.20 ± 2.35) compared with those in the waitlisted control group (35.23 ± 5.49), $F(1.58) = 484.97$, $p = 0.000$. At the 12th week, the result showed significant reduction of depressive symptoms among school children in the treatment group (10.07 ± 2.38) compared with those in the waitlisted control group (35.07 ± 5.26), $F(1.58) = 522.639$, $p = 0.000$. Internet-based REBI is an effective intervention for managing depression among schoolchildren. However, further studies are required to ascertain and corroborate the efficacy of internet-based REBI in managing depression among school children.

Key words: Depression, internet-based, rational-emotive behaviour intervention, schoolchildren, REBT depression manual, significant

INTRODUCTION

The potential roles of the internet in healthcare, education, workplace, parenting programs and patient management have been demonstrated in several studies (Al-Barzinji and Asman, 2019; Erdem, 2008; Go *et al.*, 2018; Ebrahimi *et al.*, 2016; Mokhsin *et al.*, 2018; Sekaran *et al.*, 2017; Wahyuni and Muttaqin, 2018; Widyanti *et al.*, 2017). Internet-based applications may be applied to delivered intervention for managing depression in children. Merikangas *et al.* (2010) reported the outcome of the National Health and Nutrition Examination Survey (NHANES) with the indication that depression among children aged 8-11 years old was around 2.5%. CDCP. (2013) reviewed similarly that 2% of 6-11 years old have a trace of depression. Domenech-Llaberia *et al.* (2009) reported that 42% of depressive symptoms occur in early childbirth. However, Wichstrom *et al.* (2012) found that 0.5-2% of children ages 3-6 years old encounter major depression. Also, Guerry and Hastings (2011) found that 45% of children live with

depression. According to Kendler *et al.* (1999), 40% of depression risk among children is attributed to genetic factors. According to WHO. (1998), 39% of all disability-adjusted life year lost in developing nations of the world resulting from non-communicable diseases of which 10% of its risk is due to neuropsychiatric conditions. WHO. (1998) further reported that depression is suffered by over 300 million people across the globe. According to, Lemma *et al.* (2012) occurrence of poor mental health among school children differs but nevertheless the rates of depressive symptoms can go as high as 50% in developing countries. To Benton *et al.* (2003) schoolchildren that are living with depression who sought for counselling between 1988-2001 was 20% higher than those depressed before then. Blanco *et al.* (2008) reported that 91.6% of schoolchildren today are encountering psychological problems. According to the American College Health Association, 43% of school children have been reported having depression. Also, Naushad *et al.* (2014) found that 79.2% of school children today are living with depression.

In 1955, Albert Ellis initiated the use of Rational-Emotive Behaviour Intervention (REBI) for managing depression. According to Ellis, individuals have inherent tendencies to be rational as well as irrational (DiGiuseppe *et al.*, 2002). Turner (2016) noted that rational beliefs refer to beliefs that are flexible, non-extreme and logical while, irrational beliefs are beliefs that are rigid, illogical and extreme. Ellis (1962) opined that depression occurs because of the acceptability of one or more illogical ideas. Macavei (2005), McDermut *et al.* (1997), Nelson (1977), Smith (1989) and Solomon *et al.* (2003) are of the view that depression is as a result of illogical ideas. Ellis and Dryden (1987) stated that individuals with illogical ideas show demands, awfulizing beliefs, self-downing beliefs and low frustration tolerance. REBI encourage the development of preferences, anti-awfulizing beliefs, unconditional self-acceptance, unconditional other-acceptance and high frustration tolerance as more realistic thoughts (Anonymous, 2018; Ellis, 1975, 1994; Mneimne, 2014; Szentagotai *et al.*, 2008). Lefebvre (1981) stated that clients suffering from depression can alter the impact of events and interpret their experiences in inflexible, unhelpful and self-defeating ways, if not treated with REBI. According to Ellis (1962), REBI is appropriate for treating people living with depression, so that, the feelings of worthlessness will be eliminated. Hence, the investigation is deemed necessary to examine the role of an internet-based REBI in eliminating depression among schoolchildren.

MATERIALS AND METHODS

The randomized controlled trial design was adopted for this study. The study protocol was approved by the Research Ethics Committee of the Department of Educational Foundations, University of Nigeria Nsukka. The study was carried out in selected junior secondary classes in South-East, Nigeria, from January 2018 to April 2019. The (36) participants aged 15-17 years with depression who agreed to provide informed consent were included in the study. The 36 eligible participants were randomized into one of two study groups: REBI group (n = 18) and waitlist control group (n = 18) using computer-generated random numbers. Participants completed a questionnaire measuring depression symptoms, titled Center for Epidemiological Studies Depression Scale for Children (CES-DC) (Radloff, 1977). The instrument is a 20-items self-report depression inventory with possible scores ranging from 0-60. Radloff further stressed that a cutoff score of 15 is suggestive of depressive symptoms in children and adolescents. Higher

CES-DC scores indicate increasing levels of depression. The instrument uses the cutoff score of 15 as being suggestive of depressive symptoms. The treatment protocol for the internet-based REBT is based on the techniques and descriptions in the REBT manuals (David, 1999). The overall elegant REBI treatment is focused on the irrational beliefs mediating depressive symptoms, demandingness, self-downing, awfulizing and low frustration tolerance. Cognitive (i.e., disputation), behavioural and emotive techniques were used to change the target irrational beliefs. Also, REBI strategies were focused on reducing secondary problems promoting unconditional self-acceptance and focusing on the identification and modification of DEM as the central irrational belief involved in depression. The intervention was delivered via a WhatsApp group platform. The statistical tool used for data analysis was ANOVA. Data were normally distributed and there were no missing data. All analyses were conducted using SPSS computer software, Version 22.0 (IBM Corp. NY, United States).

RESULTS AND DISCUSSION

A total of (60) schoolchildren who met the study criteria were recruited. There were (30) participants in the treatment group (15 males, 15 females) and (30) waitlisted control group (15 males, 15 females).

Table 1 shows the mean depression of participants based on groups. The finding showed that there is no significant mean difference in the baseline measure of depression between schoolchildren in the treatment group (35.26±5.26) and the waitlist controlled group (35.33±5.61). Table 2 shows that at the 4th week, the result showed a significant reduction of depressive symptoms among schoolchildren in the treatment group (14.23±3.89) compared with those in the waitlisted control group

Table 1: Mean depression by group

Groups	Baseline	4th week	8th week	12th week
REBI groups				
M	35.10	14.230	11.20	10.97
N	30.00	30.000	30.00	30.00
SD	5.26	3.890	2.35	2.38
SEM	0.96	0.711	0.43	0.44
Waitlisted control group				
M	35.33	35.27	35.23	35.07
N	30.00	30.00	30.00	30.00
SD	5.61	5.57	5.49	5.26
SEM	1.02	1.01	1.00	0.96
Total				
M	35.22	24.75	23.22	23.02
N	60.00	60.00	60.00	60.00
SD	5.39	11.63	12.82	12.81
SEM	0.70	1.50	1.66	1.65

M = Mean; N = Number; SD = Standard Deviation; SEM = Standard Error

Table 2: ANOVA results for significant mean difference in depression by group

Groups	Sum of squares	df	Mean square	F-values	Sig.	Eta squared
Baseline						
Between groups (Combined)	0.817	1	0.817	0.028	0.869	0.000
Within groups	1715.367	58	29.575			
Total	1716.183	59				
4th week						
Between groups (Combined)	6636.017	1	6636.017	287.395	0.000	0.832
Within groups	1339.233	58	23.090			
Total	7975.250	59				
8th week						
Between groups (Combined)	8664.017	1	8664.017	484.973	0.000	0.893
Within groups	1036.167	58	17.865			
Total	9700.183	59				
12th week						
Between groups (Combined)	8712.150	1	8712.150	522.639	0.000	0.900
Within groups	966.833	58	16.670			
Total	9678.983	59				

(35.26±5.57), $F(1, 58) = (287.40)$, $p = 0.000$. At the 8th week, the result showed more significant reduction of depressive symptoms among schoolchildren in the treatment group (11.20±2.35) compared with those in the waitlisted control group (35.23±5.49), $F(1, 58) = (484.97)$, $p = 0.000$. At the 12th week, the result showed significant reduction of depressive symptoms among schoolchildren in the treatment group (10.07±2.38) compared with those in the waitlisted control group (35.07±5.26), $F(1, 58) = 522.639$, $p = 0.000$.

The current study found that internet-based REBI is an effective therapy for treating depression in schoolchildren. The finding is consistent with that of Macavei (2005) who reported that REBT is effective in treating individuals with depression. Haaga *et al.* (1991) found that depression issues could be treated through the application of REBI. Depression can be managed with REBI (Chadwick *et al.*, 1999). Vemon (2007) reported that REBI is effective in reducing the rate of depression in children and adolescents. Najafi *et al.* (2012) found that REBI is effective in reducing irrational belief among groups of children or adult. Kumar (2009) also reported that REBI psychotherapy has a positive impact on adolescent's conduct disorder symptoms like depression. Vekateshkumar *et al.* (2012) reported that REBI can be used to manage depression and other emotional disorders. Studies also indicated that the use of REBI is efficacious in the treatment of depression (Treisman *et al.*, 2005). Furthermore, Iftene *et al.* (2015) reported that REBI has been shown to be an effective measure for dealing with depressive symptoms. Bridges and Harish (2010) reported that REBI is effective in managing depression. Najafi *et al.* (2012) found that REBI is an adequate measure in treating adolescent's depression in both in the group and on the individual. Eseadi *et al.* (2017) showed that REBI can be effectively used to manage depressed individuals. In the study of

Onyechi *et al.* (2016), it was found that depressed individuals could be efficiently managed through the use of REBI. Nilk *et al.* (2014) reported that REBI is significantly correlated with depression. Jalali *et al.* (2014) reported that REBI helps in reducing the psychological disorder of people. The finding of this study also agreed with that of Szentagotai *et al.* (2008) who reported that depression is more effectively managed with the use of REBI. Nik (2013) also found that REBI can be used to treat depressed individuals. Zhaleh *et al.* (2014) reported that the management of depression can be achieved with the use of REBI. Onuigbo *et al.* (2019) found that REBI can help in managing depression among depressed individuals. In addition, the use of REBI for dealing with depression is shown to be more supportive than the control condition group (Bella-Awusah *et al.*, 2016).

CONCLUSION

This study investigated the role of internet-based REBI in managing schoolchildren's depression. The 12-week internet-based REBI with 2 weeks of follow-up meeting resulted in a significant reduction in depression scores of the participants compared to a waitlisted control group. Thus, we concluded that internet-based REBI could be an effective treatment therapy for reducing depression among schoolchildren. To this end, further studies are needed to validate the effectiveness of internet-based REBI for schoolchildren in other geo-political zones of Nigeria.

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