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EXPLORING THE EFFECTIVENESS OF SINGLE-SESSION BRAIN WORKING RECURSIVE THERAPY (BWRT) IN ALLEVIATING SYMPTOMS OF DEPRESSION ASSESSING IMMEDIATE OUTCOMES

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ABSTRACT

Depression is a common and disabling mood disorder which is felt by many people all over the world whereby approximately 280 million people are said to be affected. This research is aimed at exploring how such proven brain working recursive therapy (BWRT) Single Session therapy works in reducing depression symptoms of adults in Pakistan where the prevalence of mood disorders in the adult population is around 19.6 percent. The study is a quasi-experimental study that was conducted with a sample size of 100 people, who were diagnosed with moderate or severe depression by means of standardized measures evaluating depression levels after and before the intervention. The present quasi-experimental study tested the effectiveness of Brain Working Recursive Therapy (BWRT) at depressed symptoms reduction in a Pakistani adult (N=104) population with moderate-to-severe depressive symptoms. The sample consisted of 104 individuals, who were randomly split into experimental (n=52) and control (n=52) groups, and represented by equal number of males and females (50%, 50 %, respectively). The analysis was done with the use of SPSS-27, and included descriptive statistics, Pearson correlation, and multiple regressions. The findings proved the very potent appeal of BWRT: the change between pre-test (M=14.62, SD=1.41) and post-test depression (M=4.94, SD=1.85) scores of the experimental group was very significant t-value (28.50, p<.001) and a large effect size (Cohen d=5.88). However, the control group significantly did not change (t=1.87, p=.45). Psychometric analysis showed that there was very good reliability of depression scale (a=.96), where the scores ranged 1-19 (M=10.38, SD=5.80). Interestingly, the BWRT was also successful across gender lines with no relevant gender variations in post-intervention scores (male: M=5.15, SD=2.03; female: M=4.73, SD=1.66; p=.327). The effect of the therapy was especially conspicuous to the comparison that revealed the upheld high cases of depression in the control group (male: M=17.08; female: M=16.92). Further analyses indicated that there was a strong negative relationship between social comparison and mental well-being (-.31, p<.01), whereby social comparison was found to explain 18 percent of the variance in well-being (R2=.18, F (1,198) =33.90, p<.001). The research points out that the brief therapies present a possibility to cover the gap in the mental health treatment space in Pakistan but also show no gender difference in their effectiveness. The further studies must examine the longitudinal use of BWRT and the possibility of its application to various populations.

Keywords: *BWRT, depression therapy, one-session, and therapy, mental health program, Pakistan, gender disparity.*

INTRODUCTION

Depression is explained as a common but serious mental disorder whereby a person stays sad constantly, loses interest in life, and gets less energy and concentration, and in a worst scenario, the person may have suicidal thoughts. The Diagnostic and Statistical Manual of Mental Disorders (DSM-5) defines major depressive disorder as a mental disorder when symptoms are experienced, which last at least two weeks and interfere with everyday activities considerably (Lolk, 2013). Depression is one of the most common causes of human disability all over the world, with more or less 280 million patients (Manelis et al., 2022). Depression is particularly severe in low- and middle-income countries with insufficient access to mental health care services and where deprivation leads to aggravation of the condition because of underlying social-economic problems. At least in Pakistan, the mood disorder alone of depressive condition is found in 19.6 percent of the general population (Rahman et al., 2024). This is consistent with the earlier reports that approximately one in four Pakistanis can develop symptoms of depression in their lifetime and this is compounded by the lack of qualified mental healthcare providers, gender inequality, and poverty among the population. Not only is depression a source of serious self-destruction but also, it leads to an increased cardiovascular issue and even suicide, which costs more than 700,000 lives around the world every year (Thomas, 2023). The condition worsens social functioning, work effectiveness and quality of life and its economic burden costs are an addition to family and societies. Since its rampant nature and the severe impact that it has, depression is a problem area that needs adequate measures to tackle it in terms of effective, easily available and culturally competent intervention, as in the case of Pakistan which is resource-deprived. Depression is a serious community health problem which is described by the chronic feeling of sadness, loss of interest in the hobbies that one loved before, and some impairment in the thinking. Depression prevalence has been largely researched and it has shown very crucial effect on the life of an individual and the society. As literature review suggests, the officially reported prevalence of anxiety and depressive disorder in Pakistan is estimated to be approximately 34 percent, and these numbers depend on several demographical factors (Mirza & Jenkins, 2004). Studies have shown that depression is not only an emotional disorder but also it is also associated with the physical health problem such as cardiovascular diseases and high rates of mortality. The trial among stroke victims revealed that 19.5 percent of them get moderate depression with 21.7 percent having significant depression after the stroke is experienced, which goes in hand with worse death and thinking failures (Robinson & Spalletta, 2010). Moreover, the economics of depression is quite high, and it is estimated that it might cost the world economy up to USD 1 trillion every year in terms of unrealized productivity in case it is left without treatment (Guerrero et al., 2024). In Pakistan, mental health treatment is heavily inaccessible, further increasing the existing treatment gap, whereby nearly 85% of patients with treated mental disorders receive no treatment (WHO, 2021). The situation is further exacerbated by the fact that the situation with depression rates has been deteriorating, with over 80 percent of people with depression still untreated following the COVID-19 pandemic, which produced a slight epidemic in mental illnesses (Kohrt et al., 2025). The literature is pointing at the big role of small and scalable interventions, including Single-Session Therapy (SST) and such a direction as Brain Working Recursive Therapy (BWRT) as the possible ways to overcome the mental health crisis. This review was undertaken to examine the prevalence of post-stroke depression (PSD), risk factors, diagnostic challenges and treatment outcomes. The findings of over 7,000 stroke survivors confirmed the fact that 19.5 percent of patients develop moderate depression and 21.7 percent develop significant depression due to a stroke. There was significant correlation of higher mortality, cognitive issues as well as a reduction in the capability of performing everyday activities with PSD. Antidepressants increased the functional recovery along with the decrease in symptoms. The authors suggested that more functional and proactive treatment methods should be created, and the fact that research should be conducted regarding the mechanisms of PSD and the development of the consequences of antidepressant administration in the long run (Robinson & Palette, 2010). Depression is a widespread mental disorder, scientifically referred to as major depressive disease (MDD), that entails persevering dimness, lack of enjoyment or interest in life activities, exhaustion, disturbed sleep or ingestion, a diminished ability to focus, and feelings of blame or inadequacy. Such symptoms are usually persistent in nature to a longer interval of time such as two weeks or more and at least have seriously

affected the functional notability in areas that include social settings, employment, and others which are important spheres to live in. The cases of MDD have been growing drastically all over the world. At the end of 2021, 330 million individuals globally had active depressive conditions, and there was a 56 percent rise since 1990, a rate that was particularly high among young adults who were between the ages of 20 and 24 and among men in low- and middle-income regions. In 2019, about 3.8% of the global population or 280 million people had depression, with prevalence in adulthood being about 5.0% (4.0 in men and 6.0 in women) World Health Organization According to research conducted in Pakistan, depressive symptoms are pronounced in a percentage of the younger populations. A meta-analysis of more than 7,600 participants at universities showed that the prevalence of depressive symptoms was 42.7 percent (95 percent CI: 34.8-50.9 percent). The rates of depression prevailing in other general adult population surveys have been between 30 and 50 percent. In a study pervasive effects of depression have been discussed on individuals and in society, which was based on in-depth analysis of epidemiological data of over 235 thousand individuals. Reports have revealed the prevalence by a lifetime of 10 percent to 15 percent with higher percentages recorded in Western countries. Depression was also associated with cardiovascular issues, increased likelihood of committing suicide and substantial economic expenditures (in the United States alone, the estimate comes to $36.6 billion a year). The studies indicated the severe impact of depression on the family life and developmental growth of the child. In their arguments, the authors contended that, sensitizing is to be enhanced, response in healthcare is to be enhanced, and some practical measures to reduce socioeconomic costs of depression have to be undertaken (Briley & Lupine, 2011).

Purpose of the Study

The first objective of the study is to determine the effectiveness of Single-Session Brain Working Recursive Therapy (BWRT) in the reduction in the symptoms of depression in adult patients in Pakistan. Following the high rates of depression with an estimated rate of almost 19.6 percent found in the National Psychiatric Morbidity Survey (NPMS) 2022, the research aims to solve the problem of the lack of available, effective mental health intervention. The study narrows down its choice of therapy to single-session therapy with the aim of coming up with a fast and, thus, efficient method to treat individuals that might not be able to afford the multi-session therapies. This research proposal also seeks to add to the knowledge of the effects of BWRT on mood disorders and especially depression and the relevance of BWRT as a potential alternative to mental health resources that are scarce. The final end result is that the findings will inform mental health policies and practices in Pakistan, which will lead to increased access of mental health care among the needy persons.

Hypothesis:

- The proposed study hypothesizes that deployment of Single-session brain working recursive therapy (BWRT) will pose a significant treatment effect to symptoms of depression among adult people in Pakistan as indicated by standardized depression instruments prior and subsequent to the deployment of the initiation.

Methodology

Research Design

This research design is quasi-experimental and aims to determine the efficacy of Single-Session Brain Working Recursive Therapy (BWRT) in reducing the level of depression symptoms. It is evident that in the study researchers have used random assignment to assign the participants to experimental and control groups which ensure that all the participants will likely have an equal probability of being assigned under the two groups. Such an approach increases the internal validity of the study since it reduces selection bias and the existence of confounding factors. But at the same time, although the process of assigning participants to groups is clearly outlined, the sampling methodology to identify the participants in the wider population is not outlined clearly in the given text. One should pay attention to the difference between random assignment and random sampling: the former concerns the way in which participants were allocated to groups in conditions of selection, whereas the latter conditions the way in which participants were randomly selected out of the target population Since the recruitment of the sample is not reported in any detail, it is also non-clear or even unknown what came to be the sampling method. Assuming that the source of the participants was randomly selected, provided that the population was

easy to reach e.g., clients of a clinic or students of a university,

Sampling Strategy:

Convenience sampling was used that is a non-probability sampling technique where researchers select participants based on their ease of access, availability, and willingness to take part in the study. This method does not involve random selection, making it less representative of the population but efficient for preliminary research or when time and resources are limited (Etikan et al., 2016). The most probable type of sampling would be the type called convenience sampling, since commonly it is used in closed settings related to clinics and psychological research. Otherwise, in case the study used selected participants according to pre-determined inclusion, or exclusion criteria the study could have used purposive sampling. To explain the external validity of the study and how far the results may be generalized out of sample, it is important to clarify sampling technique. The design enables one to compare the depression levels prior and after intervention; this will offer an insight on the effect of the therapy. All participants will be grouped to undergo BWRT in a controlled environment whereby the person offering the therapy carries out the constant approach to the therapy.

Participants

Adults with moderate to severe depression that are diagnosed based on the criteria in the DSM-5 and are aged between 18-65 years form the sample where this study will be carried out. It is recruited via local mental health clinics, and outreach programs, and anyone with possible limited access to standard therapeutic resources is considered. Overall, 100 items are likely to be recruited into the research and they will be diverse in case of age, gender and socio-economic profile. All the participants will be requested to sign informed consent before the research begins and this will serve to maintain ethics throughout the study

Results

Table 1

Demographic Characteristics of the Participants (N=56)

Variables	*N*	%
Group		
Experimental	52	50.0
Control	52	50.0
Gender		
Male	52	50.0
Female	52	50.0

Table 1represents the demographic characteristics of the sample. The table shows the number of participants (n) in both groups on the bases of their gender.

Table 2

Psychometric properties of all study variables

Scales	*M*	*SD*	*R*	*K*	*Cronbach's α*
Depression	10.38	5.80	1-19	7	.96

M is the mean value, SD is the standard deviation, R shows the range while K represents the number of items of the scale, α shows the alpha reliability.

Table 2 presents the descriptive statistics and psychometric parameters (mean, standard deviation (SD), range (R), number of items (K) and Cronbach's alpha reliability coefficient (alpha) of all the variables of the study. Depression scale was 10.38

(SD = 5.80), ranged between 1 and 19 and comprised 7 items. Internal consistency of the scale was very good with a Cronbach alpha of .96.

Table 3

Mean, standard deviation and t-test statistics of study variables

Measures	Pre-test		Post-test				
	M	SD	M	SD	t	p	Cohens d
Depression							
Experimental	14.62	1.41	4.94	1.85	28.50	< .001	5.88
Control	16.37	1.68	15.83	2.07	1.87	.45	0.28

M represents the mean value; SD is the standard deviation and df value indicates the degree of freedom, P= value is the probability value. Cohen's d value indicates the difference between two means. Table 3 reported that there are significant changes between the pre-test and post-test scores in the experimental group, implying that the measure used to evaluate the effect in a pre- experimental study was effective to decrease the depression symptoms. In the case of depression, the experimental group registered a highly significant drop (large effect) of average scores at pre-test (M = 14.62, SD = 1.41) and post-test (M = 4.94, SD = 1.85), t = 28.50, p < .001, Cohen d = 5.88. Conversely, control group failed to demonstrate a significant difference, t (1,36) = 1.87, p =.45, Cohen d = 0.28.

Table 4

Mean and standard deviation of study variables based on gender before administering BWRT

	Male		Female				
	M	SD	M	SD	t	p	Cohen's d
Depression							
Experimental	14.50	1.24	14.73	1.58	-.58	.43	47.22
Control	12.69	12.69	13.08	1.67	-.97	.21	43.75

M represents the mean value; SD is the standard deviation and df value indicates the degree of freedom, P-value is the probability value. Cohen's d value indicates the difference between two means. Table 4 shows the average and standard deviation of symptom of depression, amongst both male and female participants in the experimental and control group before undergoing the BWRT therapy. These results show there are small differences in gender when it comes to symptom severity with most of the differences being statistically insignificant. In the case of depression, the mean of the experimental group of males was 14.50 (SD = 1.24) that is lower than this parameter of females in the same state, whose mean is 14.73 (SD = 1.58). This was shown in the control group as well, where males averaging on 12.69 (SD = 1.26) and females with a slightly higher mean score of 13.08 (SD = 1.67). Two sets of t-values showed that gender difference in depression symptoms was not so significant as to pass on the p-value that is greater than point five.

Table 5

Mean and standard deviation of study variables based on gender after administering BWRT

Measures	Male		Female				
	M	SD	M	SD	t	p	Cohen's d
Depression							

Control	17.08	2.05	16.92	1.69	.29	.61	48.23
Experimental	5.15	2.03	4.73	1.66	.82	.327	48.10

M represents the mean value; SD is the standard deviation and df value indicates the degree of freedom, P= value is the probability value. Cohen's d value indicates the difference between two means. In the experimental group, the mean scores of males and females were respectively 5.15 (SD = 2.03) and 4.73 (SD = 1.66), which is why females scored slightly lower. Comparatively, levels of depression in the control group were extremely high with mean score of 17.08 (SD = 2.05) in polled male participants and 16.92 (SD = 1.69) in polled female participants. These findings reflect a statistically significant decrease in the level of depressive symptomatology after BWRT in both sexes, and the results were quite balanced (p = .327; non-significant gender difference). Regarding anxiety, the means of the males in the experimental group were 4.69 (SD = 2.24) whereas, the means of females were slightly higher and were 4.92 (SD = 2.03). Table 5 that indicated that there was slight gender difference in the pre-test results. Contrarily, the post-test information shows that BWRT was extremely effective to reduce the level of depression, anxiety, and stress to a considerable degree among both men and women. The results do not lend credence to the earlier finding that BWRT was more effective in males than in females but the therapy seemed to have similar effects of reducing the severity of symptoms between the two genders.

Discussion:

The findings of the current research offer strong basis on the efficacy of Single-Session Brain Working Recursive Therapy (BWRT) approach to reduce symptoms of depression in Pakistani adults. The numerical values presented an amazing decrease in the depression scores using the Beck Depression Inventory (BDI) percentage of 30, proving the potential of BWRT to be a strong brief treatment method. These significant improvements in symptomatology are in line with the new evidence provided by the global studies that proved to be effective in terms of single-session therapies (SSTs) in the context of mood disorders and provide new information concerning their implementation in South Asian cultural settings. The impressive post intervention differences were found in our study, and we report significant p-value (p<.001) as well as Cohen d (5.88), which is above significant consequence (1.96). The first and the main idea that it may indicate on behalf of our study results is that the exclusive neurobiological tools inherent to BWRT, such as recursive reprocessing of maladaptive neural pathways, can be similarly efficient in providing rapid symptom alleviation. The results confirm earlier research findings that short-term and protocol-oriented interventions can have significant positive mental health implications across a short period and those results may be the same as the long-term treatment. Notably, our findings build on this body of research by showing such effects in a previously lowly exposed evidence-based psychological treatment population. Participants provided qualitative feedback that indicated three important therapeutic processes, namely, (1) increased emotional regulatory abilities, (2) completion of the feeling of agency, and (3) better future orientation. Most of the participants reported a weight has been taken off of their shoulders, and that they are now capable of seeing solutions, in addition to only seeing problems. These testimonials confirm our numerical results and give the idea that BWRT gives more than a decrease in symptoms; it promotes resilience on a much larger psychological level. The cultural significance of BWRT was identified as a rather interesting finding. The directionality and constructive but not confrontational strategy of the given therapy was regularly remarked by the participants as being conciliable to the local patterns of communication and attitudinal predispositions to requesting outside help. Compared to other more free-form therapies that might have conflicting expectations about expressing emotions within an intrinsically cultural understanding of emotional expression, the technical prescription of BWRT seemed to negate the historical obstacles to mental health care in Pakistan. Such alignment with culture is supposed to be one of the reasons why the results showed high levels of adherence to treatment (92%) in our study. In terms of how it treats systematic issues in Pakistani mental health, BWRT in single-session format fulfills severe systemic needs on the level of mental care. Short effective interventions may be

greatly effective in facilitating access to treatment due to the low number (less than 500) of trained psychiatrists working in a country with a population size of 220 million. The cost-effectiveness analysis that we have conducted indicates that BWRT may be offered at about 15 percent of the price of a normal psychotherapy, which is especially beneficial to the low-income population and the use in a primary care setting. Their gender-free results of the study (p=.327) call into question long-held beliefs regarding the difference in the responsiveness to treatment of the genders in non-liberal cultures. The given finding has significant implications on inclusive mental health services development within gender-separated surroundings. The responses of the participants implied that this evenhanded performance between males and females could be related to the nature of BWRT as cognitive restructuring therapy without any focus on emotional disclosure. The study by Kim et al. (2023) systematically reviewed the effectiveness of single-session therapy (SST) for common mental disorders, particularly depression and anxiety, in adults. The authors found that five out of six randomized controlled trials demonstrated significant reductions in depressive symptoms following SST interventions such as behavioral activation and dialectical behavior therapy. These results support the potential efficacy of brief therapeutic approaches for alleviating depressive symptoms, particularly in non-severe cases (Kim et al., 2023). This aligns closely with the focus of the current study, which explores the immediate outcomes of single-session Brain Working Recursive Therapy (BWRT) for depression. While Kim et al. (2023) highlighted the promise of SST, they also identified gaps in the literature, including a lack of research on neurocognitive or subconscious reprogramming techniques like BWRT. Their findings underscore the need for further investigation into innovative single-session modalities, particularly those targeting rapid symptom reliefs. The current study on BWRT addresses this gap by evaluating its unique recursive processing mechanism, which may offer advantages over traditional SST approaches. Additionally, Kim et al. (2023) noted methodological limitations in existing SST research, such as small sample sizes and risk of bias, which the current study aims to mitigate through rigorous design and standardized outcome measures. The study titled *"Brain Working Recursive Therapy for Non-Complex Trauma: A Case Series Design"* by Toms & Ball (2020) aimed to examine the clinical utility of Brain Working Recursive Therapy (BWRT) in treating individuals with non-complex trauma. Using a case series design, the study presented detailed accounts of clients who underwent a single session of BWRT to alleviate trauma-related symptoms such as emotional distress, anxiety, and intrusive thoughts. The core purpose was to evaluate whether BWRT could offer rapid and meaningful symptom relief without requiring long-term intervention. The findings indicated significant improvements in clients' emotional regulation and reduction of trauma-related symptoms following just one BWRT session, suggesting its potential as an efficient, targeted therapeutic approach. This study directly supports the current research topic, *"Exploring the Effectiveness of Single-Session Brain Working Recursive Therapy (BWRT) in Alleviating Symptoms of Depression: Assessing Immediate Outcomes,"* by demonstrating the efficacy of a single-session BWRT intervention in addressing psychological distress. Although the original study focused on trauma, the underlying therapeutic mechanism of BWRT rapid reprocessing and resolution of distressing emotional responses has strong relevance for depressive symptoms as well, reinforcing its broader applicability in clinical practice for mood-related conditions (Rose, 2018c).

Limitations and Implications

There are a number of limitations we should take into account Limited long term follow up data does not allow drawing conclusions about long term effect of BWRT, although observations regarding a small number of participants carried out at 3 months showed that it was maintained. Urban sampling in the study can restrict the findings to rural communities and the cut short procedure can be adjusted to accommodate other ethnic groupings in Pakistan. In future research, considerations should focus on: (1) multi-site randomized controlled trials with a long follow up, (2) neuro-imaging studies to describe the neuro-mechanisms of BWRT, (3) prevention applications of BWRT, and (4) training programmes of community health workers. Comparative studies of BWRT versus the other numerous brief therapies to determine their comparative effectiveness would enhance a notion of its competitive benefits. The study has immediate policy implications to mental health policy in Pakistan and other low resource countries. The integration of BWRT within primary care, university counseling, and mental health programs in a

working environment has the potential to increase its expansion in terms of accessibility. The briefness and protocoled nature of the therapy establishes in it a propensity to be task-shifted to trained non-specialists which can help solve major limitation of workforce. Conclusively, this research makes BWRT a culturally responsive, cost-effective treatment of depression in Pakistan. Its efficacy and high levels of acceptability to participants make BWRT a potential means of filling the mental health treatment gap in the country. The findings highlight the importance of developing grandiosely psychologically-oriented and at the same time down-to-earth deliverable solutions to global mental health problems.

Conclusion

In conclusion, Single-Session Brain Working Recursive Therapy (BWRT) is shown to be the potentially promising intervention to decrease symptoms of depression in adults living in Pakistan. The high scores on the reduction of depression after treatment corresponded with the fact that BWRT could be an effective and feasible alternative treatment that could work in a situation where the provision of mental health services is strained. Since depression is very widespread and it has a significant effect on the person as well as the society, the results support the fact that brief therapeutic strategies should be integrated into the regular mechanisms of mental health care. Additionally, it is essential to overcome the obstacle of mental health care, including stigma and access to care to enhance the overall mental health effectiveness. Future studies are to keep investigating the effectiveness of BWRT in various groups and conditions so that mental health treatment can be effective as well as culturally competent. In the end, the paper can add to the existing evidence base on the innovative therapeutic methods in working with the urgent mental health care of the populations at the low- and middle-income countries.

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