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RESEARCH

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The effectiveness of behavioral activation and antidepressant medication on the reduction of suicidality in patients with major depressive disorder

Latif Moradveisi^{1*}, Marcus J.H. Huibers² and Arnoud Arntz³

Abstract

Antidepressant medication is commonly the preferred treatment for individuals with severe major depressive disorder (MDD). However, there is limited knowledge regarding how psychological therapy compares to medication in terms of its effects on suicidality. In a previous randomized clinical trial, we examined the effectiveness of behavioral activation (BA) against Sertraline for treating depression. The study included a total of 100 participants, with 50 assigned to the Behavioral Activation group and 50 to the Sertraline group. This paper focuses on the impact of both treatments on reducing suicidality in MDD patients. Suicidality was measured using item 9 of the Beck Depression Inventory (BDI-II) and item 3 of the Hamilton Rating Scale for Depression (HRSD). Both treatments resulted in a decrease in suicidality; however, BA showed a greater reduction in scores on BDI-II item 9 and HRSD item 3 at 4 weeks, at the conclusion of the active treatment phase (week 13), and at the 49-week follow-up. At the 49-week follow-up, only 9% of patients in the BA group (4 out of 44) reported suicidal ideation, compared to 46.5% in the Sertraline group (20 out of 43) based on BDI-II item 9. Similarly, based on HRSD item 3, 9% of BA participants (4 out of 44) and 42% of Sertraline participants (18 out of 43) reported suicidality. Overall, BA was found to be more effective than Sertraline in reducing suicidality in both the short-term and long-term.

Keywords Major depressive disorder, Behavioral activation, Sertraline

Introduction

Current clinical guidelines recommend a combination of antidepressant medication and depression-focused psychotherapy for the treatment of mild to moderate major depressive disorder (MDD), with antidepressants being the first-line treatment option for severe MDD [1]. Selective Serotonin Reuptake Inhibitors (SSRIs) are the most commonly prescribed antidepressants worldwide due to the marketing as safe and effective in treating depression [2]. Nevertheless, the side effects of antidepressant medication can lead to patients discontinuing treatment, and an additional concern is the risk of relapse following cessation of the medication [3–5]. Due to concerns

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surrounding medication for depression, several psychological treatments emerged some decades ago. One of these is Behavioral Activation (BA), which has proven effective in alleviating symptoms of major depressive disorder (MDD) [6].

Recent research has highlighted BA as a highly effective intervention for major depressive disorder (MDD), particularly in comparison to traditional pharmacological treatments. A 2022 narrative review [7] underscores BA's grounding in behaviorism, emphasizing its core mechanism of increasing engagement in rewarding activities to counteract depressive inertia. Building on this, a 2018 editorial in *The British Journal of Psychiatry* [8] positions BA as a promising, scalable approach, noting its accessibility and effectiveness across various populations. Additionally, a 2019 study [9] investigating BA's role in residential mood disorder treatment supports the theory that sustained behavioral activation leads to measurable reductions in depressive symptoms. Collectively, these findings affirm BA's ability to directly target behavioral patterns contributing to depression while fostering long-term improvements in emotional well-being.

BA has emerged as a well-established treatment for depression, grounded in behavioral theory and contextual clinical science. Early conceptual and clinical work by Jacobson, Martell, and Dimidjian [10] reestablished BA as a stand-alone intervention, emphasizing its roots in behavior therapy and its effectiveness in treating depression through structured increases in adaptive behaviors. This foundational perspective was further elaborated in key texts such as *Depression in Context* by Martell, Addis, and Jacobson [11], which detailed both the theoretical underpinnings and practical applications of BA. Empirical support for BA grew through early trials. For example, Dimidjian et al. [12] demonstrated that BA was as effective as cognitive therapy in treating depression. More recently, Ekers et al. [13] provided updated findings supporting BA as an effective alternative to traditional cognitive behavioral approaches. Similarly, in another meta-analysis by Cuijpers et al. [14] concluded that BA is an effective, well-tolerated, and scalable treatment for depression. Collectively, these seminal works and syntheses affirm BA as a robust, accessible, and efficacious treatment for depression.

Emerging research highlights the potential of BA as an effective intervention for reducing suicidal thoughts among individuals with depression. Hopko et al. [15] conducted a study on depressed breast cancer patients, demonstrating that BA combined with problem-solving therapy led to a significant decrease in suicidal ideation. Their findings suggest that fostering engagement in meaningful activities and enhancing problem-solving skills may provide patients with adaptive coping strategies, reducing the psychological distress that contributes

to suicidal thoughts. Similarly, Hemanny et al. [16] explored the effects of BA and trial-based cognitive therapy on suicidal ideation in patients with major depressive disorder. Their post hoc analysis from a clinical trial indicated promising reductions in suicidal thoughts, reinforcing BA's role in targeting behavioral patterns linked to persistent distress. Together, these studies underscore BA's capacity to break cycles of avoidance and inactivity while promoting engagement in life-enhancing experiences—mechanisms that may serve as protective factors against suicidal thoughts.

In the early 1990s, however, several studies raised concerns about a potential association between the use of SSRIs and suicidality [17–19]. An early meta-analysis by [20] reported that suicidal ideation as measured by a single question on the Hamilton Rating Scale for Depression (HRSD) decreased by taking SSRIs. A review of data from 77 trials submitted to the US Food and Drug Administration (FDA) reported a non-significant increase in the rate of suicide among patients assigned to SSRIs and those assigned to placebo or other antidepressant medications [21]. In another meta-analysis that studied suicide risk with SSRIs and other new-generation serotonergic-noradrenergic antidepressants in adults indicated that exposure to modern antidepressants is linked to a heightened risk of suicide among adult patients receiving routine care for depression and other treatment-related conditions [22]. Another meta-analysis analyzed data from 24 trials among pediatric patients and found that taking antidepressants by pediatric patients is associated with a relative increased risk of suicidality [23]. In addition, a systematic review that included 345 trials reported an association between the use of SSRIs and suicide attempts [24].

The effectiveness of CBT and other psychosocial therapies in preventing suicidality has also been investigated. A meta-analysis of 28 studies reported that CBT could decrease suicide behavior and ideation in the short term and overall could be effective in the treatment of adults but not with adolescents [25]. A randomized controlled trial reported that a 10-session cognitive therapy designed for adults who currently attempted suicide to prevent repeated suicide attempts was more effective than usual enhanced care with tracking and referral services [26].

In October 2004 the U.S. Food and Drug Administration (FDA), issued an order for pharmaceutical companies to add a black box warning about the possible relationship between antidepressant medications and suicidality in children and adolescents. Two years later, in December 2006, the FDA's psychopharmacologic drug advisory committee suggested that the black box warning should be extended to both children, adolescents, and young adults. In May 2007, the FDA asked the

pharmaceutical companies to put in place the revised warning [27]. The FDA's warning was based on industry-sponsored trials conducted a decade or more ago. However, in recent years, there has been a growing number of reports that challenge the validity of this warning, particularly in light of a decrease in antidepressant prescriptions that has coincided with an increase in suicidal incidents among individuals suffering from severe depression [28]. Despite extensive investigations regarding the increased risk of suicidality for those taking antidepressant medications, there is no consensus agreement among researchers and clinicians.

Renewed interest in behavioral strategies among therapists has resulted in the creation of BA as a psychological treatment for individuals suffering from depression [29]. Earlier studies have indicated that BA is an effective intervention for Major Depressive Disorder (MDD) and may even surpass cognitive therapy in efficacy for patients experiencing severe depression [12]. This paper utilizes data from a randomized controlled trial that compared BA with Sertraline in Iranian patients diagnosed with MDD [30], revealing that BA was more clinically effective than Sertraline during both the acute phase and over the long term. The current study specifically examines how BA and Sertraline compare in their ability to reduce scores on the Beck Depression Inventory (BDI-II) and Hamilton Rating Scale for Depression (HRSD), particularly focusing on suicidality.

Method

Participants Main treatment outcome findings and the sample characteristics of the study have been reported elsewhere [30]. The original sample consisted of 100 participants from Sanandaj, Iran, between the ages of 18–60 years (mean 31.37, SD 8.97), 85 women, with a primary diagnosis of MDD according to the Diagnostic and Statistical Manual of Mental Disorders DSM-IV-TR [31], confirmed by the Structural Clinical Trials Version (SCID-CT) [32]. Participants had to have a score of ≥ 19 on the Beck Depression Inventory, second edition (BDI-II) [33] and a score of ≥ 14 on the 17-item Hamilton Rating Scale for Depression (HRSD) [34]. The present study reports an intent-to-treat analysis. The Kurdistan University of Medical Sciences approved the present study. All participants signed written informed consent to participate in the study.

Assessments and Measures

Data were derived from an RCT comparing BA and Sertraline (max 100 mg with regular short psychiatric consultations), of which methods and main results were reported previously [30]. Depression severity was assessed with the modified 17-item version of the HRSD [34] and the BDI-II [33]. Both measures were administered at baseline, 4,

13 (post-treatment), and 49 weeks (also referred to as 1-year follow-up). Evaluators blind to treatment conditions did HRSD assessments. Also, independent assessors assessed the HRSD for the medication group and the BDI-II for BA group before every treatment session and supplied results to psychiatrists and therapists to track changes in suicidal thoughts over time. We analyzed the scores on the items of the BDI-II, item 9 (response options: 0=I don't have any thoughts of killing myself; 1=I have thoughts of killing myself but I would not; 2=I would like to kill myself; 3=I would kill myself if I had the chance), and of the HRSD, item 3 (response options: 0=Absent; 1=Feels life is not worth living; 2=Wishes he were dead or any thought of possible death to self; 3=Suicidal ideas or gesture; 4=Attempts at suicide (any serious attempts rates 4), that assess suicidality. A key difference between the two measures is that BDI-II item 9 is self-reported, meaning responses reflect personal subjective experience, whereas HRSD item 3 is rated by a clinician, meaning responses rely on professional assessment and observation.

Treatments.

In this study, we used the behavioral activation treatment based on the two behavioral activation manuals [11, 35]. For each condition, fifty participants were randomly assigned, behavioral activation ($N=50$) and antidepressant medication ($N=50$). Participants in the BA condition received 16 sessions, and the ADM group received 8 sessions, both over 12 weeks. More details of the treatment's features can be obtained from the main study [30].

Statistical analysis

Distributions of the BDI-II item 9 and HRSD item 3 were highly skewed, with a majority of zero scores. Therefore, generalized linear mixed models Poisson regression was used with a loglink to analyze the change over time during treatment and the differences between conditions. As to the analysis of the active treatment period, all available data were analyzed, and planned contrasts between conditions were tested at 4 weeks (after the intensive start of treatment, 8 sessions BA and 4 sessions Sertraline), and at 13 weeks (immediately after active treatment). For the repeated part an AR1 covariance structure turned out to have the best fit. Furthermore, a random intercept at the participants' level was added (adding random slopes created estimation problems). In the fixed part the predictors were: time of assessment (in weeks, linear time effect), condition, and the time \times condition interaction. The follow-up at the 49th week was analyzed separately, also with generalized linear mixed models Poisson regression, with only baseline and follow-up assessments, an unstructured covariance structure for the repeated part, and time, condition and their interaction in the fixed part. Effect sizes were calculated for the differences

between Behavioral Activation (BA) and Sertraline on the HRSD and BDI-II suicidality items, as well as on the total scores of these measures excluding the suicidality items.

Results

Preliminary analysis

BDI-II item 9 and HRSD item 3 showed moderately positive correlations at the different assessments (mean Spearman $r=.55$, range 0.40 to 0.83). This supports the validity of the items as well as their separate analysis, as the non-perfect correlation indicates they represent different aspects of suicidality.

BDI-II item 9

The generalized linear mixed models Poisson regression revealed highly significant effects of time and time x condition interaction on the BDI-II item 9 scores, both during active treatment, and from baseline to 49 weeks follow-up. Table 1 presents the results of the Poisson regression; Fig. 1 shows the predicted means by time and condition. The difference between the conditions was significant at 4 weeks (8 sessions of BA versus 4 sessions of Sertraline); at the end of the active treatment phase (week 13); and at the 49th-week follow-up (see Table 2 for statistics). Of those completing the 49th week FU, 9% patients (4 out of 44) in BA and 46.5% (20 out of 43) in Sertraline rated higher than 0 on the suicidality item of the BDI-II, $\chi^2(1, N=87) = 15.24, p < .001$.

HRSD item 3

As for the BDI-II, the analyses revealed significant effects of time and time x condition interaction on the HRSD item 3 scores. Table 1; Fig. 2 (estimated means) show the difference between conditions, which was significant at 4 weeks; at the end of the active treatment phase (week 13); and at the 49th-week follow-up, Table 2. Of the available scores at 49th week FU, 9% (4 from 44) in BA and 42% (18 from 43) were higher than 0 on the HRSD suicidality item, $\chi^2(1, N=87) = 12.36, p < .001$.

The subsequent analysis presented in Table 3 examined the effect sizes of the differences between Behavioral Activation (BA) and Sertraline on the HRSD and BDI-II suicidality items, as well as on the total scores of these measures with the suicidality items excluded. The results indicated that effect sizes for the suicidality items were generally smaller than those for the total scores, with one notable exception: a relatively large effect size was observed for the BDI-II suicidality item as early as week 4.

Response frequencies

Table 4 summarizes the response frequencies for BDI-II Item 9 and HRSD Item 3 across different time points. Note that the dataset included 87 participants at 49 weeks, meaning some cases were lost to follow-up.

Table 1 Results of generalized linear mixed models Poisson regression on BDI-II item 9 and HRSD item 3

BDI-II item 9							
Treatment period	Beta	s.e.	t	d.f.	P	Lower 95% CI	Upper 95%CI
Intercept	0.512	0.100	5.131	859	<0.001	0.316	0.708
Condition	0.111	0.136	0.815	859	0.42	-0.157	0.379
Time	-0.145	0.019	-7.467	859	<0.001	-0.183	-0.107
Condition x Time	-0.279	0.035	-8.035	859	<0.001	-0.347	-0.211
49-week FU							
Intercept	0.554	0.075	7.406	183	<0.001	0.406	0.701
Condition	-0.023	0.106	-0.219	183	0.827	-0.233	0.187
Time	-0.026	0.004	-6.572	183	<0.001	-0.034	-0.019
Condition x Time	-0.035	0.010	-3.496	183	0.001	-0.054	-0.015
HRSD item 3							
Treatment period							
Intercept	0.327	0.121	2.708	456	<0.001	0.090	0.565
Condition	-0.224	0.176	-1.273	456	0.20	-0.570	0.122
Time	-0.205	0.021	-9.860	456	<0.001	-0.246	-0.164
Condition x Time	-0.078	0.036	-2.151	456	0.032	-0.149	-0.007
49-week FU							
Intercept	0.336	0.106	3.173	183	0.002	0.127	0.546
Condition	-0.105	0.154	-0.684	183	0.50	-0.409	0.199
Time	-0.023	0.004	-5.217	183	<0.001	-0.032	-0.014
Condition x Time	-0.031	0.010	-3.053	183	0.003	-0.052	-0.011

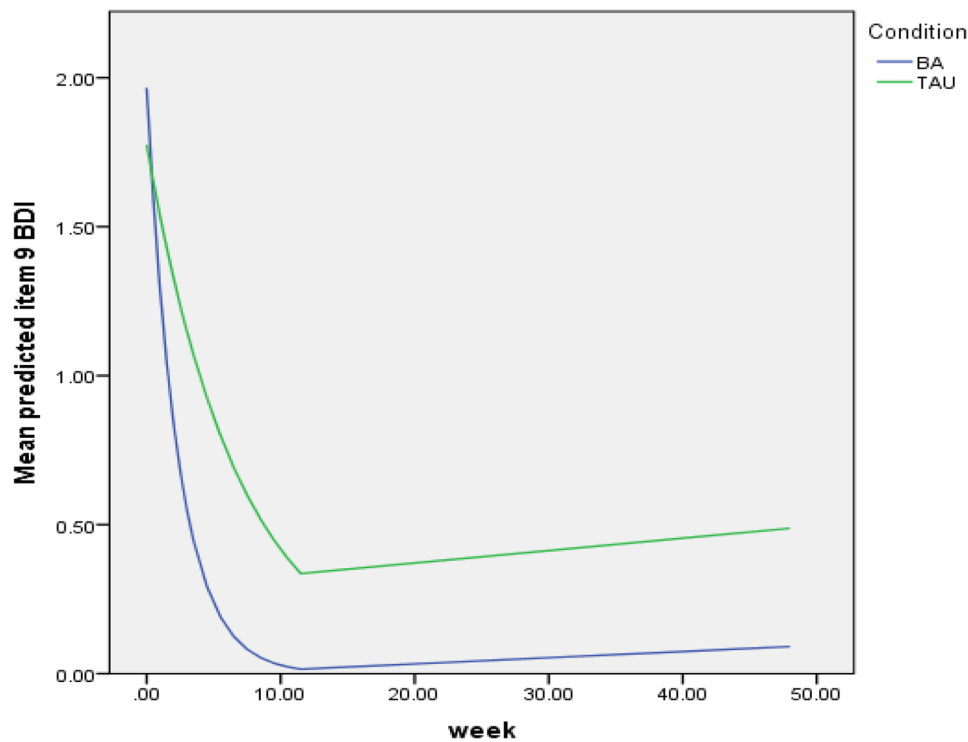


Fig. 1 Estimated means for item 9 of the BDI-II by condition and week from the mixed Poisson regression analyses

Table 2 Between treatment differences at three time points based on mixed Poisson regression of suicidality items of the BDI-II and HRSD

	Sertraline		Behavioral Activation		Difference between treatments		
BDI-II item 9	mean	se	Mean	se	t	df	p
Week 4	1.005	0.100	0.423	0.045	5.326	859	<0.001
Week 13	0.316	0.066	0.014	0.004	4.536	859	<0.001
Week 49	0.488	0.094	0.091	0.040	3.901	183	<0.001
HRSD item 3							
Week 4	0.498	0.070	0.270	0.047	2.704	456	0.007
Week 13	0.145	0.034	0.049	0.016	2.560	456	0.011
Week 49	0.463	0.095	0.093	0.042	3.582	183	<0.001

Discussion

Both treatments showed a strong decrease in suicidality as assessed by item 3 of the BDI-II and item 9 of the HRSD. BA was superior to Sertraline in reducing suicidality: decreases were both faster and deeper. Moreover, the long-term effects of BA on suicidal thoughts were better than those of Sertraline, as is evident from the follow-up tests at the 49th week. Both treatments showed significant reductions in suicidal thoughts scores over time, with Behavioral Activation demonstrating a more pronounced effect compared to Sertraline. While suicidal thoughts were measured using both the Beck Depression Inventory (BDI-II) and Hamilton Rating Scale for Depression (HRSD), the overall patterns of reduction were similar across both measures, suggesting consistency in the treatment effects. Effect sizes for the suicidality items were generally smaller than those for the total

scores, with one exception: a relatively large effect size was observed for the BDI-II suicidality item as early as week 4. It is important to interpret this comparison with caution, as the suicidality items were analyzed using Poisson regression with a log link function, whereas for the total scores a normal distribution was used.

The findings of our study are in line with the results of studies that psychosocial interventions such as CBT and DBT could be effective in reducing suicidal behavior and ideation and suicide attempts [25, 26, 36, 37]. Furthermore, the results of our study are in line with the findings that taking antidepressant medication has a protective effect on suicidality [21, 27, 38]. On the other hand, the findings of three meta-analyses [23, 24, 39] that there is an association between SSRIs and suicide attempts are in contrast to the previous and present findings that SSRIs are reducing suicidality. However, a meta-analysis

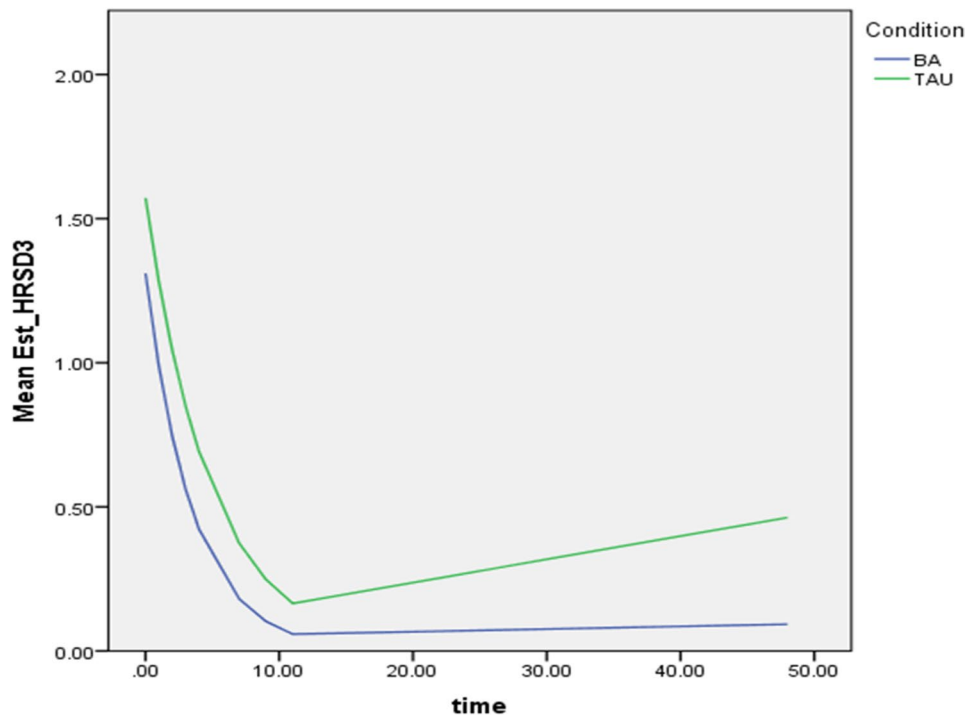


Fig. 2 Estimated means for item 3 of the HRSD by condition and week from the mixed Poisson regression

Table 3 Effect sizes of the differences between behavioral activation (BA) and Sertraline for HRSD and BDI-II suicidality items, and HRSD and BDI-II total scores without the suicidality items

Assessment	BA vs. Sertraline Cohen's d	BA vs. Sertraline Cohen's d
	HRSD item 3	HRSD total minus item 3
4 weeks	0.25	0.26
13 weeks	0.09	0.88
49 weeks	0.41	0.56
	BDI-II item 9	BDI-II total minus item 9
4 weeks	0.57	0.19
13 weeks	0.41	0.83
49 weeks	0.48	1.11

Note. The effect sizes are based on the differences between the estimated means from the (Generalized) Linear Mixed Model with the square root of the residual variance at the assessment moment as denominator. For the suicidality items estimated means on the original scale were used (the analysis was based on a Poisson regression with loglink). For the HRSD total score minus item 3 and BDI-II minus item 9 scale the same model was used as for the complete scales, see primary outcome paper., Moradveisi et al. [30]

conducted by the U.K. Medicines and Healthcare Products Regulatory Agency [40] consisting of 40,000 people in 477 randomized placebo-controlled trials of SSRIs reported that use of SSRIs was not associated with higher risk of suicide. One explanation for the relationship between SSRIs and suicidal thinking and behavior could be that these patients already were suicidal before taking medications. Clearly, this needs to be further investigated in the future studies.

According to our knowledge to date, no other study compared the efficacy of BA and SSRI(Sertraline) for reduction of suicidality. As this is the first exploration of the possible different effects of BA versus Sertraline on the reduction of suicidality, the findings can stimulate further research.

Suicidal ideation and suicide attempts can be understood as attempts to cope with a stressful situation that appears unresolvable to the individual. In behavioral terms, the individual may lack the necessary skills to effectively manage stressful situations. Through BA, patients learn how to take action, engage in meaningful and reinforcing activities, cope with life's challenges in more adaptive ways, and confront and resolve problems they may have previously avoided. While avoidance may provide temporary relief from emotional pain, it can have significant negative consequences on the patient's life and lead to more problems in the long term. We propose that patients who participate in BA learn to better address their daily life challenges and manage suicidal thoughts and behaviors, ultimately reducing suicidal thoughts. BA helps individuals rediscover the activities that bring them a sense of purpose and joy-whether it's reconnecting with loved ones, pursuing hobbies, or simply engaging in daily routines that once felt impossible. By gradually reintroducing these meaningful experiences, BA works to replace patterns of avoidance and inactivity with positive reinforcement, helping people rebuild their lives piece by piece. This shift is powerful because it does not just target

Table 4 Frequencies of responses on HRSD item 3 and BDI-II item 9 per assessment and treatment condition

HRSD item 3 * Condition Crosstabulation			HRSD item 3 response					Total
Condition			0	1	2	3	4	
BA	week	1	14	18	10	7	1	50
		5	26	15	4	0	0	45
		13	44	1	0	0	0	45
		49	40	4	0	0	0	44
Tau	week	1	9	19	15	7	0	50
		5	16	13	6	0	0	35
		13	33	1	1	0	0	35
		49	25	16	2	0	0	43
BDI-II item 9 * Condition Crosstabulation			BDI-II item 9 response					Total
Condition			0	1	2	3		
BA	week	1	5	13	24	8		50
		5	28	13	4	0		45
		13	45	0	0	0		45
		49	40	4	0	0		44
Tau	week	1	5	16	16	13		50
		5	9	16	6	4		35
		13	27	5	3	0		35
		49	23	19	1	0		43

depressive symptoms, but it transforms the way individuals interact with the world, encouraging action instead of withdrawal. On the other hand, patients treated with ADM do not acquire skills to cope with daily hassles and major life problems, leaving their behavioral repertoire unchanged. Consequently, they are not offered alternatives for managing suicidal thoughts and behaviors. This difference in behavioral skill acquisition between the treatments may explain why BA demonstrated a greater reduction in suicidality compared to ADM.

The antidepressant medication used in this study was Sertraline, a commonly prescribed selective serotonin reuptake inhibitor (SSRI), with minimal face-to-face contact between patients and the prescribing psychiatrist. In Iran, ADM is considered the standard treatment for depression. The maximum daily dosage of Sertraline in this study was 100 mg. While other studies have utilized higher dosages, some clinicians believe that 100 mg may be insufficient for certain patients. However, higher dosages can increase the risk of side effects, including potential associations with suicidal behavior. In the Sertraline condition, psychiatrists saw the participants during the 3 months active treatment period 8 times for 10 min each, except for the first session, which was 20 min. In RCTs comparing CBT to ADM, a typical format for ADM is 30 to 45 min for the first session, with 20–30 min for the other sessions, in a similar frequency of sessions [12, 41]. The total time (90 min) in the present study is less than the approximately 200–240 min in the same number of sessions in ADM trials. Less time for emotional support,

advice, and other (non-specific) therapeutic actions might have contributed to the weaker effect of Sertraline on suicidality. An intriguing possibility that emerges is that the anti-suicidal effects of antidepressant medications (ADM) in other studies may have been partially misattributed to the medication itself, rather than to the supportive therapy provided by psychiatrists in those randomized controlled trials (RCTs), or to the combination of active medication and supportive therapy. This hypothesis clearly warrants further investigation.

Several limitations should be considered regarding the assessment of suicidality in our study. The validity of assessing suicidality using only single items (item 3 of the BDI-II and item 9 of the HRSD) should be further investigated. A single item may have lower reliability and validity compared to more comprehensive instruments. A BDI-II score of ≥ 19 typically falls within the moderate-to-severe range, but truly severe depression is generally associated with much higher scores. If the intention was to exclusively study patients with severe MDD, a higher threshold—for example, ≥ 29 on the BDI-II might have been more appropriate. This discrepancy has implications for how the study's findings should be interpreted. While the results demonstrate that BA outperformed Sertraline in reducing suicidality, the sample characteristics suggest that many participants may not have had the most extreme levels of depression. Therefore, the generalizability of the findings to severe MDD populations should be considered carefully. The study did not use a more extensive measurement like the Columbia-Suicide

Severity Rating Scale [42], which is considered a gold standard for assessing suicidality.

The study was conducted in Iran with a specific population (Iranian patients diagnosed with MDD), which may limit the generalizability of findings to other populations and settings. There was significantly less face-to-face contact time in the Sertraline condition (only 90 min total over 3 months) compared to typical ADM trials (200–240 min). This difference in therapeutic contact and support might have influenced the results. The maximum daily dosage of Sertraline used was 100 mg, which some clinicians may consider insufficient for certain patients. However, higher doses could increase side effects. While BA had more sessions (16 vs. 8), there was not an active control for the additional therapeutic contact time in BA compared to Sertraline. While the study did have a 49-week follow-up, longer-term effects beyond this period are not known.

Despite these limitations, the study provides compelling evidence that BA is more effective than Sertraline as supplied in regular practice in reducing suicidality, both in the short term and long term. These findings underscore the importance of addressing behavioral factors in the treatment of suicidality and highlight the potential of BA as a viable alternative to antidepressant medication.

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Authors' contributions

L.M., M.J.H., and A.A. contributed to the design and implementation of the research, to the analysis of the results and to the writing of the manuscript.

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Data availability

The data supporting this study's findings are available from the corresponding author.

Declarations

Ethics approval and consent to participate

Kurdistan University of Medical Sciences, Committee of Medical Ethics, Second Session. The main study's findings, titled 'Behavioral activation v. antidepressant medication for treating depression in Iran: randomized trial,' were published in *The British Journal of Psychiatry*.

Consent for publication

All authors have given their consent to publish the results of the study.

Competing interests

The authors declare no competing interests.

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