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Effects of Integrated Cognitive Behavioral Therapy (CBT) vs. Placebo on Aggression Level in Adults

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The purpose of this study was to examine the effects of Cognitive Behavioral Therapy (CBT) integrated with Islamic techniques on managing aggression, and to evaluate the impact of placebo medicine on aggression in adults. A total of 40 participants (n = 20 in the Integrated CBT group; n = 20 in the placebo group) with a mean age of 29.70 were included. Participants who preferred talking therapy were placed in the Integrated CBT group, while those who preferred medication were assigned to the placebo group. Aggression levels were measured at baseline and post-intervention using the Urdu-translated and validated version of the Buss and Perry Aggression Questionnaire (BP-AQ; Buss & Perry, 1992), adapted by Iftikhar and Malik (2014) for the Pakistani population. Findings revealed a significant reduction in aggression across both groups, indicating that both Integrated CBT and placebo interventions had positive effects. However, Integrated CBT demonstrated greater efficacy than placebo, providing evidence that combining CBT techniques with Islamic approaches is a more effective strategy for reducing aggression in adults.

Keywords. Aggression, Islamic approach, cognitive behavior therapy, integration, placebo

Aggression is defined as an intentional act to harm others, with aggressive behavior representing its observable manifestation (Zirpoli, 2008). A strong emotional response to provocation characterizes it. Aggression comprises three primary dimensions: affective, involving emotions such as anger or disgust; cognitive, encompassing negative thoughts about others and pessimistic beliefs; and behavioral,

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including both physical and verbal expressions of anger. These components are interrelated and may vary in intensity, frequency, and duration (Valizadeh et al., 2010).

According to social learning theory, individuals may adopt aggressive behaviors by observing others, particularly when such behaviors appear to fulfill needs or resolve conflicts (Litrownik et al., 2003; Herrera & McCloskey, 2003). Additionally, the theory of media violence posits that exposure to televised violence increases the risk of aggressive behavior in later life (Huesmann et al., 2003).

Aggression and anger have wide-ranging harmful effects that extend beyond the perpetrator, negatively impacting the mental health of victims and bystanders (Valizadeh et al., 2010). In adulthood, aggressive behavior can escalate into severe outcomes such as child and sexual abuse, domestic violence, homicidal tendencies (Liu et al., 2013), aggressive driving (Sharkin, 2004), assault, and robbery (Raine, 1993). These consequences highlight the importance of effective interventions for managing aggression.

Mental health practitioners generally rely on two primary approaches to treat aggression: Pharmacological interventions and psychotherapy. While medications can be effective, their side effects often limit their long-term use, making psychotherapy a preferred option for many clinicians and clients. Among psychotherapies, Cognitive Behavioral Therapy (CBT) is particularly well-recognized for managing anger and aggression. CBT emphasizes the interaction between cognition, emotion, and behavior in situations that provoke anger (Kelly, 2007). The therapeutic goal is not to eliminate anger, since anger may serve adaptive functions, but to regulate it and reduce its harmful consequences (Kassinove & Tafrate, 2011).

CBT techniques typically involve identifying maladaptive thoughts, emotional triggers, bodily responses, and behaviors during distressing situations, followed by practicing strategies to replace these with healthier alternatives (Kelly, 2007). Complementing CBT, Islamic teachings also emphasize anger regulation. The Qur'an and Hadith recommend practices such as *zikr* (remembrance of Allah), *istighfar* (seeking forgiveness), and seeking refuge in Allah to calm anger. For example, Prophet Muhammad (SAW) said: *"If someone feels distressed, he should seek refuge in Allah from Satan, and his anger will subside"* (Sahih Bukhari, Hadith 337) (Wahyuni, 2012). Integrating such culturally relevant spiritual strategies with CBT may enhance its effectiveness, especially in Muslim populations where religious values strongly influence coping styles.

Another approach to managing aggression is the use of placebo interventions. Wager and Atlas (2015) define the placebo effect as improvement triggered by an inactive treatment, attributable to the individual's expectations rather than any pharmacological action. Placebo responses vary across cultures (Moerman, 2000), health conditions (Kienle & Kiene, 1997), and individual beliefs (Scott et al., 2007). Research also shows that placebos can operate through classical conditioning, where physiological responses to real medication are later elicited by an inactive substitute (Stockhorst et al., 2000). In contexts where people place strong trust in medication, placebo treatments may yield significant psychological benefits.

Several studies support the effectiveness of psychological interventions in reducing aggression. Snyder et al. (1999) found that psychosocial treatments reduced anger among adolescents, as reflected in post-intervention assessments. Watt and Howells (1999) reported similar benefits among violent offenders, while Deffenbacher et al. (2000) demonstrated significant reductions in anger among college students. Collectively, these findings emphasize the promise of psychotherapeutic approaches in managing aggression across different populations.

Despite the established role of CBT, little is known about the impact of Integrated CBT with Islamic principles on aggression. Prior studies show its effectiveness in treating depression and anxiety among Muslim clients (Asghar et al. 2021), but its potential in aggression management remains unexplored. At the same time, in rural areas of Pakistan, reliance on medication and alternative treatments is more common than psychotherapy. Thus, evaluating the role of placebo interventions alongside psychotherapy is important for understanding culturally relevant treatment preferences and outcomes.

To address these gaps, the present study investigates the effectiveness of Integrated CBT i.e. combining CBT techniques with Islamic strategies (Azhar & Varma, 1995; Hamdan, 2008; Rothman & Coyle, 2020) compared to placebo interventions (Deb et al., 2020) in reducing aggression among adults.

Method

Sample

A total of 40 participants (mean age = 29.7 years) were recruited for the study, including 7 males and 33 females, from the Emergency Satellite Hospital Nahaqi, Peshawar, Pakistan. The majority of participants belonged to middle-class families. Regarding educational background, 9 participants had no formal education, while 31 had

some level of schooling: 3 had completed primary education, 4 middle school, 9 matriculation, 5 intermediate, 5 bachelor's, and 5 master's degrees. With respect to marital status, 23 were married, 13 single, 2 engaged, 1 separated, and 1 divorced. Eighteen participants were employed, whereas 22 were unemployed. Before data collection, health staff were informed about the study and asked to refer individuals who exhibited aggressive tendencies. Based on their interest and consent, participants were allocated either to the Integrated CBT group (n = 20) or the placebo group (n = 20).

The study employed two types of interventions. Twenty participants were assigned to the Integrated CBT group, which incorporated Cognitive Behavioral Therapy techniques with an Islamic perspective for anger management. Participation in this group required a minimum level of education to ensure comprehension of therapeutic content. The remaining twenty participants were allocated to the placebo group, where they received a placebo solution prepared with sterile water, containing no active ingredients or therapeutic effects. A similar approach has been reported by Deb et al. (2020), who compared Risperidone with a placebo in managing aggression among patients with traumatic brain injury, using identical pill packaging for both groups. In the present study, pre- and post-tests were administered to all participants, and individual sessions were conducted with each participant. Data collection extended over a period of one year.

The researcher considered participants suitable to take part in the study if they met the following criteria:

1. Adults below the age of 55.
2. Participants must have aggression with no severe comorbid conditions like severe depression and psychotic features.
3. For the Integrated CBT Group, education is a must.
4. For the placebo group, participants' willingness to take medicine is a must.

Ethical Considerations

Prior to group allocation, participants were provided with detailed information about the study protocols. Those who expressed a preference for talk therapy were assigned to the Integrated CBT group, whereas participants who preferred pharmacological treatment were placed in the placebo group. As a clinical psychologist, the researcher conducted thorough assessments to ensure that participants did not

present with severe psychiatric conditions or require psychiatric medication. Participants were informed about the potential risks and benefits, the expected duration of the study, and their right to withdraw at any stage without penalty. To minimize potential harm in the placebo condition, droppers were filled with sterile water, visually resembling medicine, and participants were instructed to dilute two drops in half a glass of water before intake. The use of placebo interventions for managing aggression has also been documented in prior research, such as Deb et al. (2020), who administered placebo pills in a study on traumatic brain injury patients. Written informed consent was obtained from all participants before the commencement of the intervention. The researcher obtained Ethical approval from the Administration of the Emergency Satellite Hospital, Nahaqi, Peshawar, Pakistan for the study.

Measures

Buss-Perry Aggression Questionnaire (BP-AQ)

The Buss-Perry Aggression Questionnaire (Buss & Perry, 1992) is a 29-item, 5-point Likert scale from "*Extremely Uncharacteristic of Me*" to "*Extremely Characteristic of Me*" and is a standard measure of aggression in adults. It is a four-factor instrument that measures Physical Aggression (PA), Verbal Aggression (VA), Anger (AN), and Hostility (HS). Iftekhar and Malik (2014) from Government College University Lahore translated and validated the questionnaire in Urdu. Researchers have obtained permission to use the questionnaire from the author via email. The total reliability score of the scale is .93, with sub-scale reliability of PA = .80, VA = .79, AN = .77, and HS = .82.

Procedure

This study comprised two intervention groups: Integrated CBT group and the Placebo group. Participants were recruited through referrals and the outpatient department for the treatment of aggression. Eligibility was assessed using clinical interviews and the Buss-Perry Aggression Questionnaire (Buss & Perry, 1992). Participants who met the inclusion criteria were informed about the nature and procedures of the study, and written consent was obtained prior to enrollment. Based on their treatment preference—either “talking therapy” or “drug therapy”—participants were allocated to the Integrated CBT group or the Placebo group. Upon completion of the intervention, aggression levels were reassessed using the same questionnaire.

For the Integrated CBT group, an assimilative integration approach (Messer, 1992) was employed. In this framework, Cognitive Behavioral Therapy (CBT) served as the baseline theoretical orientation, while selected concepts and techniques from the Islamic perspective were incorporated for anger management. The intervention consisted of six weekly individual sessions, each lasting 40–45 minutes. The first session involved intake interviews and assessment, while the final session focused on re-assessment and termination. CBT-based techniques included examining evidence, cognitive rehearsal, cognitive restructuring, relaxation methods (breathing exercises, imagery, and progressive muscle relaxation), assertiveness training, listing advantages and disadvantages, and structured task assignments. Techniques were tailored to participants' presenting issues.

To strengthen the intervention, CBT techniques were integrated with Islamic teachings on anger control. Cognitive restructuring was guided by Quranic verses emphasizing self-restraint and forgiveness, such as *"who restrain anger and who pardon the people, and Allah loves the doers of good"* (Al-'Imran, 3:134) and *"when they are angry, they forgive"* (Ash-Shura, 42:37) (Ashraf & Sitwat, 2024; Shahsavarani et al. 2016). Behavioral strategies were informed by Hadith and religious practices, including seeking refuge in Allah from Satan, altering bodily posture (e.g., from standing to sitting or lying down), consuming or washing with cold water, performing ablution, remaining calm, and avoiding confrontational settings (Shahsavarani et al. 2016).

The Placebo group received a solution prepared with sterile water, containing no active ingredients or therapeutic effects. The liquid was dispensed in labeled droppers resembling medicine bottles, marked with manufacturing and expiry dates from the sterile water pack. Following the assessment, participants were instructed to dilute two drops of the solution in half a glass of water and take it twice daily for one month. All questions related to dosage and side effects were addressed, and participants were asked to return for weekly monitoring of symptoms. At the end of one month, the impact of the placebo intervention was evaluated.

Results

This study examined the effects of Integrated Cognitive Behavioral Therapy (CBT) compared to a placebo on aggression levels in adults. It was hypothesized that Integrated CBT would demonstrate greater effectiveness than the placebo. Prior to group

allocation, participants' aggression levels were assessed using the Aggression Questionnaire (Buss & Perry, 1992). The findings indicated that Integrated CBT produced significantly greater reductions in aggression compared to the placebo, supporting the study's hypothesis.

Table 1: *Mean Differences in Aggression Scores between the Integrated CBT and Placebo Groups before the Intervention (N = 40)*

	Group 1 CBT (*n* = 20)	Group 2 CBT (*n* = 20)			95% *CI*		Cohen's *d*
	M (SD)	*M (SD)*	*t(df)*	*p*	*LL*	*UL*	
Aggression	103.85(12.18)	103.15 (14.36)	.166(38)	.869	-7.82	9.22	.0525

Note. CI = confidence Interval; LL = Lower Limit; UL = Upper Limit

Table 1 illustrates no significant differences between the two groups on the Buss-Perry Aggression Questionnaire before the interventions.

Table 2: *Mean Differences in Aggression Scores between the Integrated CBT and Placebo Groups after the Intervention (N = 40)*

	Group 1 CBT (*n* = 20)		Group 2 Placebo (*n* = 20)				95 *% CI*		
Aggression	*M*	*SD*	*M*	*SD*	*t(df)*	*p*	*LL*	*UL*	Cohen's *d*
	61.05	13.91	83.75	15.35	-4.90(38)	.00	-32.08	-13.32	1.5497

Note. CI = Confidence Interval; LL = Lower Limit; UL = Upper Limit

After the intervention, the researcher administered the Buss-Perry Aggression Questionnaire again to measure the effects of the intervention on both groups. Results showed a significant difference in pre- and post-test scores of both groups. Table 2 presents an integrated approach to CBT that is more effective than a placebo on aggression levels in adults.

Table 3: *Mean differences of pre- and post-test of the Buss-Perry Aggression Questionnaire of the Integrated CBT Group vs. Placebo Group (N = 20)*

	Pre-test (*n* = 20)		Post-test (*n* = 20)						
							95 % CI		Cohen's
Aggression	*M*	*SD*	*M*	*SD*	*t(df)*	*p*	*LL*	*UL*	*d*
Integrated CBT Group	103.85	12.18	61.05	13.91	9.72(19)	.00	33.58	52.01	3.2738
Placebo Group	103.15	14.36	83.75	15.35	6.08(19)	.00	12.71	26.08	1.3052

Note. CI = Confidence Interval; LL = Lower Limit; UL = Upper Limit.

Pre and post-test results in Table 3 demonstrate that Integrated CBT and Placebo interventions both have significant positive effects in reducing aggression levels in adults.

Discussion

Psychologists increasingly employ integrated approaches to address emotional and behavioral problems, as such approaches allow individuals to benefit from techniques drawn from more than one theoretical framework. In the present study, Cognitive Behavioral Therapy (CBT) was integrated with Islamic teachings to manage aggression, while a placebo intervention was also used to examine the psychological effects of treatment expectations. The findings confirmed that both interventions contributed to reductions in aggression, although Integrated CBT produced significantly greater effects than the placebo.

Integrated CBT has generally been considered an effective therapeutic procedure for addressing emotional and behavioral difficulties. The present results are consistent with Kelly (2007), who found that incorporating CBT with other therapeutic perspectives enhanced anger management in adolescents, as demonstrated in a case study integrating CBT with mindfulness techniques. In this study, aggression was conceptualized as a behavioral manifestation of cognitive distortions; therefore, CBT techniques were combined with Islamic teachings to restructure maladaptive cognitions and modify behavioral responses. Islamic strategies emphasized rewards for self-restraint as described in the Qur'an (e.g., *"who restrain anger and who pardon the people, and Allah loves the doers of good"*; Al-'Imran, 3:134) and forgiveness in difficult circumstances (Ash-Shura, 42:37). Behavioral strategies based on Hadith included seeking refuge

in Allah, altering posture, consuming or washing with cold water, performing ablution, and avoiding confrontational settings (Shahsavarani et al., 2016). Consistent with this framework, the study demonstrated a significant reduction in aggression levels, aligning with previous findings by Wahyuni (2015), who reported positive outcomes using CBT integrated with Islamic principles in adolescents, and Steffgen (2017), who observed reductions in anger expression among athletes following CBT-based interventions.

The placebo intervention also produced reductions in aggression, which can be explained by the psychological effects of treatment expectations and classical conditioning. Stockhorst (2000) noted that consuming medication may elicit conditioned responses, while placebo responses are often enhanced when patients anticipate recovery in a supportive treatment context (Blasi et al., 2002; Price et al., 2008). A strong therapeutic alliance can further amplify placebo effects (Kaptchuk et al., 2008). In this study, participants in the placebo condition received treatment in a hospital setting and were provided with detailed instructions, rapport building, and reassurance, which may have enhanced placebo effectiveness. These findings are consistent with those of Deb et al. (2020), who observed reductions in aggression among traumatic brain injury patients using placebo intervention. However, they contrast with Öz and Aysan (2011), who found no significant change in aggression levels among students receiving a placebo compared with control participants. Nonetheless, their findings regarding the effectiveness of anger management training are in line with the present results for the Integrated CBT condition.

Overall, the evidence from this study suggests that psychotherapeutic interventions such as Integrated CBT are more effective than placebo treatments, as they address the underlying cognitive and behavioral mechanisms of aggression rather than solely producing expectancy effects. While placebo conditions may provide temporary psychological benefits, untreated psychological problems can worsen and negatively impact individuals, families, and society at large. The present study contributes novel evidence by directly comparing Integrated CBT with placebo in the treatment of aggression, as limited literature exists on this comparison. However, evidence from other domains supports the present findings. For instance, Carpenter et al. (2018), in a meta-analysis of randomized placebo-controlled trials, reported that CBT was more effective than placebo in treating anxiety-related disorders. In conclusion, although placebo interventions may offer short-term relief, Integrated CBT

provides a more comprehensive and sustainable treatment option for managing aggression.

Clinical or Methodological Significance of this Article

This study demonstrated that Cognitive Behavioral Therapy integrated with Islamic principles is effective in reducing aggression among adults. The findings contribute to the existing body of literature by providing empirical support for Integrated CBT as a culturally relevant and effective therapeutic approach. The results also indicate that placebo interventions can produce a measurable reduction in aggression, likely due to expectancy and psychological conditioning effects. However, Integrated CBT proved to be significantly more effective than placebo, highlighting its value as a comprehensive intervention for addressing aggression.

Limitations and Suggestions

This study has certain limitations that should be acknowledged. First, the sample size was relatively small, which may limit the generalizability of the findings; future research with larger and more diverse samples is recommended. Second, the study was conducted only in a rural area of Peshawar, which restricts the applicability of results to other regions; future studies should include participants from different geographical and cultural contexts to broaden generalizability. Third, the long-term effects of the interventions were not assessed. Future research should incorporate follow-up assessments (e.g., six months post-intervention) to examine the sustainability of treatment outcomes for both Integrated CBT and placebo interventions

Conclusion

Study results indicate that both Integrated CBT and placebo interventions are effective in reducing aggression among adults. As hypothesized, Integrated CBT demonstrated greater effectiveness than placebo, while placebo appeared more suitable for individuals who rely less on talking therapy and more on medication-based approaches. Given that CBT is an evidence-based therapeutic procedure, its integration with techniques from other theoretical and cultural perspectives can enhance therapeutic outcomes, offering more durable and lasting effects.

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