

## EFFICACY OF COGNITIVE BEHAVIORAL THERAPY ON ANXIETY LEVELS IN ACID ATTACK VICTIMS IN LAHORE, PAKISTAN

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### Abstract

This case illustrates the efficacy of Cognitive Behavioral Therapy as psychological management of anxiety disorder amongst acid attack victims. Assessment was done formally through anxiety subscale from Depression Anxiety Stress Subscale (DASS'21) short form, while interview and Dysfunctional Thought Record Sheet (DTR) was taken as an informal means of assessment. According to the scores obtained by both the clients on DASS'21 scale as well as DTR, both met the criteria for anxiety based on DSM 5TR. Psychotherapeutic intervention comprised of Cognitive Behavioral Therapy and was based on "Khushi aur Khatoon", a culturally adapted Cognitive Behavioral Therapy Manual. Post assessment showed marked improvement amongst the symptoms of clients, as evident by scores obtained on DASS'21 scale after the intervention.

Keywords: acid attack, acid attack victims, anxiety, cognitive behavioral therapy Farouq (2005) defined acid attack as, "violence involving throwing acid at a person's body to disfigure and scar the person for life"; most acid attacks are targeted towards face to damage the appearance (Gulrez, 2016). Nitric acid, sulfuric acid and hydrochloric acid are commonly used acids for this purpose (Patel, 2014). Mittal et al. (2021) highlights the importance of face as an important component of identity since that helps with identification. Hence, the vengeful motive behind most of these acid attacks is to target the victim's face to permanently scar their physical appearance (Khoshnami et al., 2017) as well as target their identity (Cleary et al., 2018).

The theme of acid attacks is a concern for Pakistan in the recent era. Even though acid attacks were deemed illegal and unlawful in 2010 with passing of Acid Control and Acid crime Prevention Bill, Pakistan is one of the countries with highest number of acid attack crimes with an increase in attacks registered every year (Soomro, 2015). As reported by Human Rights Commission of Pakistan around 400 women are reported with acid attack complains annually. Furthermore, as highlighted by Zulifqar et al. (2021) 60% acid attacks are not reported due to various cultural and societal factors.

Not only does the act of acid attacks contribute to severely harmful medical impacts, but additionally plethora of social, psychological, and economic impacts on the victim's life (Qazi et al., 2019). Patel (2014) highlighted how the consequences of acid attack include "blindness, permanent scarring of face and body, as well as social, psychological and economic difficulties." As mentioned by Farouk (2005) while the physical aspects of acid attack include disfiguration of

facial features and melting of bones, the psychological impact includes lifelong stigmatization, lower self-esteem and self-isolation. Insomnia, depression, apprehension of another attack, anxiety, shame and loneliness are some of the psychological impacts of this crime (Zulifqar et al., 2021).

As defined in Cognitive therapy of anxiety disorders (Clark & Beck, 2011) "Anxiety is a complex cognitive, affective, physiological and behavioral response system (i.e., threat mode) that is activated when anticipated events or circumstances are deemed to be highly aversive because they are perceived to be unpredictable, uncontrollable events that could potentially threaten the vital interests of an individual".

**Aim** The aim of the study was to investigate the efficacy of cognitive behavioral therapy on reducing the anxiety level amongst acid attack victims in Lahore. The results drawn are based on two acid attack individuals using quasi experimental research design.

**Hypothesis** There is likely to be a significant difference in the levels of anxiety before and after receiving intervention in form of cognitive behavioral therapy among acid attack victims in Lahore, Pakistan.

#### **Method**

**Research Design** For this research aiming to look at the efficacy of cognitive behavioral therapy on reducing anxiety levels amongst acid attack victims of Lahore, a quasi-experimental research design was used. This study had within-subjects group design.

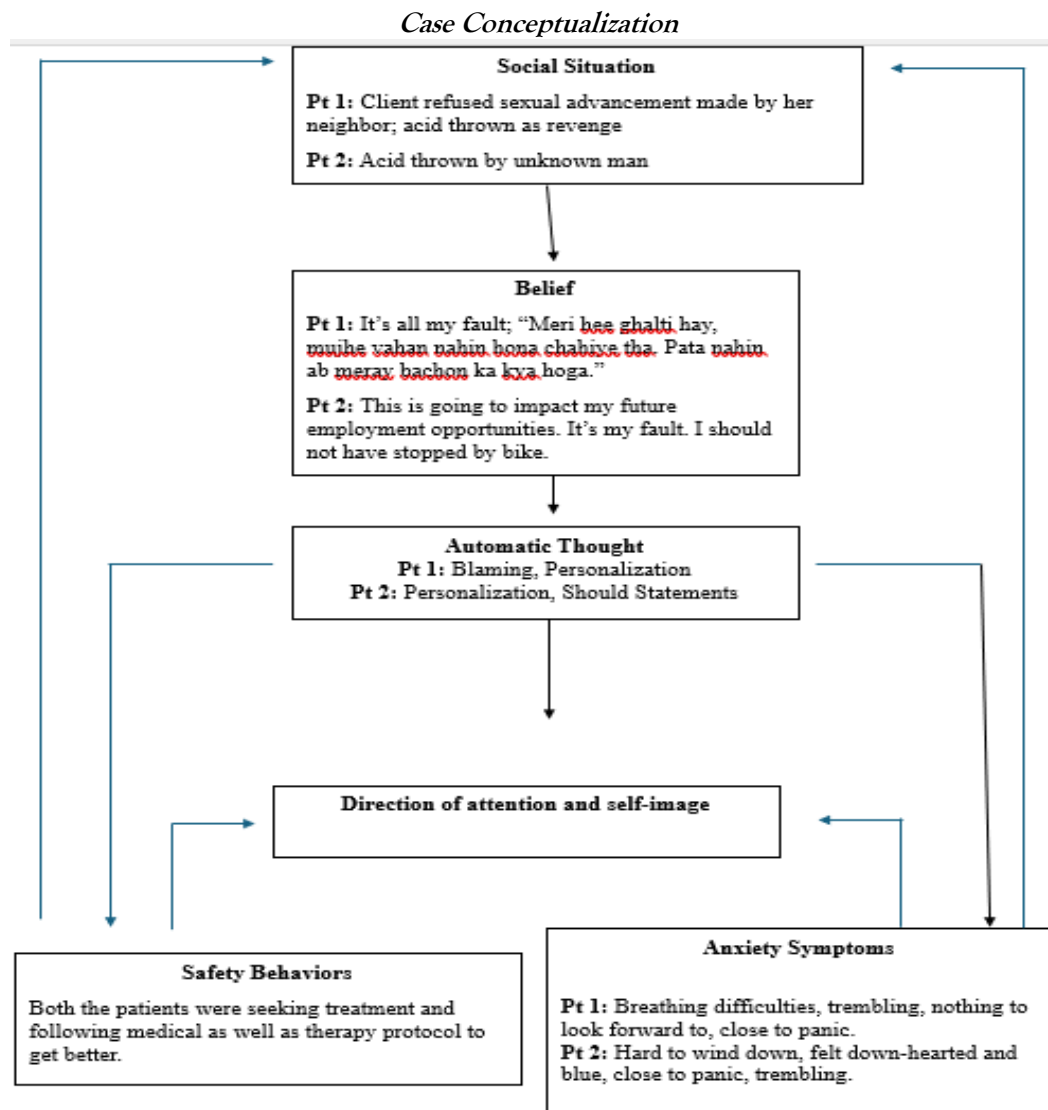
**Sample** Participants were recruited through non-probability purposive sampling technique.

**Participants** The initial plan was to have a sample of 24 participants with 12 in control group and 12 in experimental group. However, later, due to the sample being a minority, it was decided that participants will be recruited for one group i.e. experimental group and a pre and post assessment will be carried out to assess the effectiveness of therapy. Total number of participants for this research was two and these participants were admitted at Jinnah burn ward.

**Setting** This research was carried out at Jinnah Hospital Burn Unit, Lahore Pakistan. The setting for the current intervention study was individualistic sessions. Based on a general CBT module, the minimum number of sessions conducted were eight.

#### **Materials**

- Demographic Form.
- Depression Anxiety Stress (Short Form): Anxiety subscale



## INTRODUCTION

The manual followed for therapy protocol was that of Khushi and Khatoon(Naem, Irfan & Yaqub, 2015) from Pakistan Association of Cognitive Therapist (PACT). The link to complete manual has attached underneath, followed by a comprehensive overview of therapeutic sessions.

Session 1 focused on taking brief history, establishing rapport and providing introduction to therapy followed by signing of consent form. Other than pre-assessment, the session focused on introduction to stress, symptoms and reasons behind stress and introducing principles of sleep hygiene. Session 2 focused on identification of behavioral and emotional issues as well as behavioral and emotional

symptoms. Activity scheduling was introduced to the clients and the sheets to be filled for the next week were handed out.

Session 3 focused on identification and explanation of the problems; specific to each client. The session then proceeded towards coming up with practical problem solving solutions with the help of client. Cost benefit analysis was also carried out. For Session 4 the aim was to distinguish between thoughts, feelings and behavior; this was achieved by introducing and explaining ABC model to the clients. "Toxic cycle of stress" was also introduced to the clients. Another important aspect of this session was identification of cognitive errors for each client.

Session 5 aimed at looking for evidence for cognitive restructuring. The evidence log was filled with the help of each client. Thought diary II was also completed.

Session 6, the agenda for this session was cognitive restructuring for each client and coming up with an alternative balanced thought. This evidence gathered in the previous session was also used to fulfill this agenda. The thought diary III was also completed.

Session 7 focused on improving the social skills as well as assertiveness skills of the client. The clients were taught expressing both positive as well as negative emotions in a healthy way. The clients were also taught the art of mindful listening. The session ended with teaching the clients how to rationally deal with conflicts and coming up with their resolution.

Session 8 focused on reviewing the model and techniques taught during the therapy. Therapy blueprint was handed out and explained to each client. Post assessment was then carried out.

## Results

The initial plan was to use both inferential as well as descriptive statistical analysis. Depending upon the sample size, it was decided that paired sample T-test would be used if data meets requirement of parametric statistics; if not then alternative non-

parametric options would be used. Hence, Wilcoxon Signed Rank test was to be used to compare anxiety levels pre and post intervention.

However, since data could be only be collected from two acid attack patients due to sample being a minority, only descriptive analysis could be carried out.

Following chapter focuses on the results of the study divided into three sections. Table 1 and Table 2 contains characteristic details of the sample. While table 3 presents the mean and SD of key variable i.e. level of anxiety pre and post intervention.

The sample consisted of two participants; one participant being male (50%) and the other female (50%). Marital status was also equally divided: one participant was single (50%), and the other was married (50%). Socioeconomic status showed an even split, with one participant from a lower-class background (50%) and the other from a middle-class background (50%). Educational attainment varied, with one participant being uneducated (50%) and the other pursuing undergraduate education (50%). Regarding family structure, one participant belonged to a joint family system (50%) and the other to a nuclear family system (50%).

**Table 1**

Characteristics of the sample (Mean, SD) (N=2)

	Mean	Standard Deviation	Minimum	Maximum
Age	27.00	4.24	24	30
Age at time of acid attack	27.00	4.24	24	30

Tabular representation of information regarding patients age at the time of therapy and age at the time of acid attack

**Table no 2**

Comparison of means: pre-intervention & post-intervention

Variables	Mean	SD	Min- Max
Pre-Test Anxiety Score	13.50	2.12	12.00-15.00
Post Test Anxiety Score	4.00	0.00	4.00-4.00

The participants' anxiety levels were measured before and after the intervention. The pre-test anxiety scores had a mean of  $M = 13.50$ ,  $SD = 2.12$ , with scores ranging from 12.00 to 15.00. In contrast, the post-test anxiety scores showed a significant reduction, with a mean of  $M = 4.00$ ,  $SD = 0.00$ . These results indicate a substantial decrease in anxiety levels following the intervention.

## Summary of Results

Overall the results significantly supported the hypothesis i.e. there is likely to be a significant difference in the levels of anxiety before and after receiving intervention, in form of cognitive behavioral therapy among acid attack victims in Lahore, Pakistan. Post-Assessment rating showed that both the patients had reduced anxiety level as depicted by the score on DASS'21 ( $M=4.00$ ,  $SD=0.00$ ).

The change in mean pre intervention and post intervention support the hypothesis.

Although this study cannot be generalized due to the small sample size, but it is vital to note the importance and significance of this study. The results imply, in support of previous research, that psychological interventions, such as CBT, have a positive impact (reduced anxiety) in the victims. Hence, further study would be helpful in generalizing the results.

## Discussion

Despite passing of bills such as Acid Control and Acid crime Prevention Bill, acid attacks remain prevalent in Pakistan (Soomro, 2015). Whereas hate was identified as the major reason behind indulging in this crime, review of literature on this topic highlights some other factors as well such as revenge, breakup (Hafeez et al., 2019), denying sexual advances as well as rejecting marriage proposals are some reasons behind this act (Goswami, 2017). Khoshnami et al. (2017) identified that the main purpose of this crime is to target the victim's face and scar their appearance. An individual's, especially woman's physical beauty is of immense importance in order to be accepted within society (Patel, 2014) and hence disfiguring the face is the last straw leading towards social discrimination (Clearly et al, 2018). Scarring the face leads to identity issues as research emphasizes the link

between facial appearance, individual's attractiveness, and self-concept (Harter, 1999).

The consequences of this heinous crime extend to many domains of life such as physical, psychological as well as economic. While physical impacts are burning of face and disfiguration of face as discussed earlier, psychological consequences include emotional breakdown and high levels of anxiety (Zalmai & Amiri, 2021), attempting suicide, depression (Patel, 2014), lower level of self-esteem and social isolation (Athar et al., 2020).

This research focused on the psychological consequences of acid attack, especially prevalence of anxiety and its treatment. Prior literature has established the effectiveness of CBT for a vast range of mental health disorders, especially depression and anxiety disorders. Researches such as those conducted by Otte (2022), Hoffman (2014) and Van Dis et al. (2020) highlight the significance of CBT approach for managing anxiety disorders.

For this research, the aim was to determine the efficacy of cognitive behavioral therapy for reducing anxiety levels amongst the acid attack victims in Lahore, Pakistan.

Using a sample of two acid attack victims seeking therapy at Jinnah Burn Unit, results showed that Cognitive Behavioral Therapy was effective in reducing the anxiety levels amongst acid attack victims seeking treatment in Lahore, Pakistan. For both the individuals, the post-assessment rating on anxiety subscale of DASS'21 showed a reduction in anxiety level  $M=4.00$  ( $SD=0.00$ ) as compared to anxiety prior to intervention  $M=13.50$  ( $SD=2.12$ ). This signifies that there is a significant change in the means. A change in the mean indicates that the intervention, CBT for anxiety, resulted in a significant change in the participants. It is also to be noted that the pre anxiety mean is larger than the post anxiety mean signifying effectiveness of the intervention. This means that the hypothesis has been fulfilled.

Out of sample, 1 patient was male while the other was female. Hence, despite a small sample size, gender representation was ensured making results generalizable for both males and females.

When the reason of acid attack was implored through a brief clinical interview conducted as part of rapport building, it was found out that the woman had been subjected to this torture as she had refused sexual

advancement made by her neighbor. This finding was in line with researches conducted prior on this topic such as that Rahman, Bhuiyan and Lovely (2013) in Bangladesh; Goswami (2017) also mentioned refusal to entertain sexual advances as one of the reasons behind South Asian women being exposed to acid attacks.

Likewise, a recently published article in India shed light that 78% of the acid attacks in the country were due to refusal of marriage or sexual advancements (Sarkar, 2022).

Even though the patient was married with three children, her neighbor, a man in his mid 40's had shown intention of wanting to have sexual relationships with her. This man was notorious for his repute and liked to take advantage of underprivileged by abusing his financial power. The sexual advancements were made thrice and the woman had turned down this request all three times. The patient reported that when she turned it down the second time, her neighbor had threatened her but she paid no attention to it. When advancements were made the third time, she snubbed him very rudely and he had left in anger. A week later, when she was returning from a market visit with her 13 years old son, pair of goons hired by the neighbor threw acid on her head and ran away.

The patient described this as, "Initially, I had no idea what had happened. My eyes were burning, my scalp felt like it was ripping off, I sat down in the middle of road screaming. Wherever the acid dripping, it felt my skin was burning and ripping off at that point. I could feel as it trickled to my neck and my breast. I thought I was going to die. My son was screaming for help and I could hear those screams before I passed out".

After receiving first aid at a local hospital, patient was admitted at Jinnah hospital with 23% acid burns subjected with a corrosive acid. The burns involved her complete face, front and back of her chest as well as patches on her left arm and left thigh.

Researches conducted previously on this topic highlighted how since a woman's beauty is of particular importance in our community (Patel, 2014) (Khoshnami et al., 2017), the perpetrators usually target this part of the body leading not just to facial disfigurement but also targeting one's social identity (Harter, 1999). The same could be seen in the case of this patient.

Conclusion was also drawn that refusal to comply to sexual advancements may lead to the man's ego being hurt and hence this revenge strategy is adapted. Revenge, need to assert power and social dominance as well as urge to punish was identified as factors leading to acid attacks in prior researches too such as that by Mittal et al. (2021).

As for the male patient who was 24 years old, he had been subjected to acid attack by an unknown man. The patient was returning home on a motorcycle after completing his duty at the bank when he was stopped by a man who had his face covered with a cloth. The man asked for a ride but before that, he requested to talk to patient in the park nearby. The patient, A.S. with empathy in his heart, parked the bike and sat on a bench nearby. The man started the conversation that revolved around weather and wanting a ride, and during this, in a blink of an eye the man took out a bottle which contained acid in it and threw it on patient's face and ran away.

A.S. reported that he could not make sense of what had happened to him, he could barely keep his eyes open and was screaming for help. The patient also reported that in that moment, a scene from movie started replaying in his mind where a character had been exposed to acid. Replaying that scene, the patient took out water bottle from his bag and emptied the water on his face and eyes. Till then people passing by had also stopped and ambulance was called. A.S. was then taken for first aid at a local hospital.

When he was admitted at Jinnah, he came with 17% acid burn. The main areas affected included his eyes, his face and neck, his shoulders, a patch on his left arm and few patches on his left thigh.

The patient was unaware of his perpetrator and could also not think of any reason behind this attack. He did report the perpetrator knew his name; but the patient did not know him and nor saw his face.

Although this is quantitative research, but while conducting therapy with the female patient, a cognitive error identified was that of personalization i.e. self-guilt and self-blame. This was supported by findings of previous researches too such that by Waldron et al. (2014), Athar et al. (2020) and Mittal et al. (2020) where a common theme of self blame was identified amongst acid attack victims.



As for the male patient, he was primarily concerned with his employment opportunities. Research by Khoshnami et al. (2017) highlights how acid attack victims have limited opportunities after this incident. An article published in The Economic Times (2020) also explained the employment difficulties faced by acid attack victims in India, after being subjected to this horrific crime. The patient, A.S., had applied for a government job and he was concerned about his employment perspectives. His primary concern was also about his eyesight; since his eyes were majorly affected and despite on-going medical treatment, he was facing difficulties with seeing clearly.

## Limitations.

There are some identified limitations in this research that should be kept in mind for conducting further research in this domain. Due to time limitations, data was generated from only two participants and hence inferential statistics could not be carried out. Inferential statistics would have made the results section and findings of this research much stronger. Moreover, since patients could not get out of their bed due to bandages, therapy had to be in same room as 3-4 other patients. However, since Jinnah burn unit is well-kept, and each room had ample space sessions did go smoothly. Since patients can't get out of bed often, due to their bodies being burnt or bandages, therapy has to be bed-side and some common therapeutic techniques such as PMR could not be carried out with these patients.

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