EFFICACY OF COGNITIVE BEHAVIOR THERAPY IN MANAGEMENT OF INTERNET ADDICTION AND PSYCHOLOGICAL DISTRESS IN YOUNG ADULTS

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KEYWORDS	ABSTRACT
Internet Addiction, Cognitive Behavioral Therapy, Psychological Distress, Young Adults	The previous literature has provided insight about the role of cognitive behavior therapy (CBT) in reducing internet addiction and accompanying psychological distress in adults. This study was conducted with an objective to assess efficacy of CBT in reducing internet addiction and psychological distress in young adults. The sample included the 89 young adults from the 3-campuses of The Islamia University of Bahawalpur situated in Bahawalpur city who met criteria of internet addiction. Forty five of those young adults were randomized to experimental group and 44 were randomized to the control group. The experimental group received the weekly sessions of CBT for a duration of 4-6 weeks depending upon the severity of symptoms while the control group did not receive any therapy for the whole duration of the trial. The results demonstrated that experimental group exhibited a significant decrease in internet addiction & psychological distress, whereas the control group experienced a significant increase in internet addiction but psychological distress did not show a significant increase for control group. The findings suggest that efficacy and cross cultural adaptation of CBT are vital for reducing internet addiction and psychological distress in young adults thereby managing the symptoms of internet addiction in the young children.
Article History	
Date of Submission: 02-09-2024 Date of Acceptance: 28-09-2024 Date of Publication: 30-09-2024	
	2024 Gomal University Journal of Research
Corresponding Author	Ahmad Bilal: ahmadbilal4@gmail.com
DOI	https://doi.org/10.51380/gujr-40-03-07

INTRODUCTION

An increasing number of professionals from variety of fields, including doctors, psychologists, psychiatrists, nurses, social workers, administrators, teachers, and parents, who are interested in studying internet addiction. A definitive operational definition of internet addiction has not yet been defined, and boundary between normal and pathological internet use is still unclear as this is relatively new topic in empirical study (Hogan, Heyman & Smith, 2024). As a result,

internet addiction intervention programs are still in early phases of creation and improvement (Sayed, Naiim, Aboelsaad & Ibrahim, 2022). The internet addiction has emerged as significant mental health issue, particularly among young adults who spend extensive amounts of time online. This compulsive usage can lead to the negative psychological outcomes such as anxiety, depression and social isolation (Yang, Guo, Zhu, Yuan, Zhang, Zhang, Shi, Jin, & Zhang, 2023). The focus of current prevention programs is on alternative activities, establishing structured routines for children & adolescents, enhancing parental control, providing educators, teachers, and parents with tools for prevention, treatment, rather than focusing on internet use (Agbaria, 2022).

Objectives of Study
1. To adapt and assess effectiveness of CBT in lowering internet addiction & psychological distress in young adults.
2. To find out gender differences in efficacy of CBT for internet addiction & psychological distress.

Significance of Study
The excessive use of digital technologies and unethical online behavior that define the internet addiction have been described as the defensive mechanism for escaping real-world issues. A person suffering from internet addiction frequently finds that they enjoy the virtual world or online world better than in-person social interactions (Agbaria, 2022). In order to address the growing issue of the internet addiction among young individuals in non Western Pakistani culture, this research is important since it evaluates the efficacy of cognitive behavior therapy in Pakistani cultural system. In order to better serve people from non-Western backgrounds, the cognitive behavior therapy needs to be culturally adjusted (Naeem, Phiri, Rathod & Ayub, 2019).

LITERATURE REVIEW
The increasing reliance on internet among young adults has led to a rise in internet addiction, which negatively affects their psychological health, social interactions, and overall well-being. The previous research shows that 2% of the world population suffer from internet addiction (Poli, 2017). Another study reported the prevalence of the internet addiction from 6% to 10.6% (Alimoradi, Lotfi, Lin, Griffiths & Pakpour, 2022). The internet addiction is reported to be more prevalent in college students (Sayed, Naiim, Aboelsaad & Ibrahim, 2022). Individuals suffering internet addiction frequently turn to online communities for social and emotional support, shy away from the competitive real-world activities, and are less likely to plan the in-person social engagements with others (Agbaria, 2022). Similar to many other modern psychotherapies, the cognitive behavioral therapy (CBT) has its roots in European-American theories. Examining and changing fundamental beliefs is a key component of therapy, and these can vary greatly amid cultural contexts. White, middle-class, educated & European-American people were once the main subjects of cognitive behavioral therapy research (McDermott, Hameed & Zhu, 2024; Naeem, 2019). Cultural variations may have major effect on how well psychosocial treatments work.

Many psychotherapy theories have history of lacking consistency with the cultural values and beliefs of the clients from non-Western backgrounds. These theories were mainly developed by white males from the Western backgrounds (Naeem, Phiri, Rathod & Ayub, 2019). In India, for example, research on psychology students' beliefs on key cognitive therapy concepts revealed that 82% disagreed with their own personal values. Day, Laver, Jeon, Radford and Low (2023), specifically, 46% of participants thought that the therapy went against their cultural and family norms and 40% indicated that it disagreed with their faith. The most empirically supported psychotherapy technique is CBT, that is founded on the idea that mental processes, emotions, & behaviors are interconnected and that adjusting one's thoughts can influence one's behavior (Ding, Wan, Lu, Huang, Liang, Yu and Chen, 2022). Thus, when compared to other addiction treatments like inpatient care or drug-replacement therapy, it has advantage of being kinder to patients, which makes it the most widely used psychological treatment for internet addiction. According to Diotaiuti, Girelli, Mancone, Corrado, Valente and Cavicchiolo (2022), the CBT is thought to be quite effective in lowering internet usage & improving self-perception in chronic users.

Improvements are usually seen after 8 weeks and can last for up to 6 months. With the help of this therapy, people can learn to find new meanings in their practices & problematic behaviors, change negative thought patterns and create more adaptable, goal-oriented routines. Reducing amount of time spent online, improving functionality in important areas of life, and limiting exposure to harmful online content and activities are the three main objectives of psychological therapies which are intended to lessen the severity of internet addiction (Jia, Li, Liu, Zhou, Sun, Wang & Tong, 2024; Liu, Wu, Sun, Bai & Duan, 2023). Therefore, cognitive behavior therapy, a structured and evidence-based approach, may offer a more effective intervention. The effective CBT strategies for addressing internet addiction in adolescents include several evidence-based approaches. Identifying and understanding the causes for compulsive internet use, such as the disconnection from apps, difficult feelings, external variables, and significant events, as well as developing the mental wellness and impulse control techniques related to internet use, such as breathing exercises and relaxation techniques, are some of evidence-based approaches that are used in CBT for addressing internet addiction in adolescents (Jiang, Liu, Qin, Wang, He & Chen, 2024).

Hypotheses of Study
1. The young adults in experimental group will experience reduction in internet addiction and psychological distress as compared to control group.
2. The young male adults will experience significant reduction in internet addiction and psychological distress as compared to young female adults.

RESEARCH METHODOLOGY
This experimental study used research design of randomized controlled trial with the control group. The population of the study was the students studying at three campuses of The Islamia University of Bahawalpur (IUB) in Bahawalpur city. The study used non probability purposive sampling technique to recruit the participants from the campuses of The Islamia University of Bahawalpur.

Inclusion & Exclusion Criteria

Only those students were sampled who met the criteria for internet addiction and were in age range of 18-29 years according to definition of young adults (Arnett, Żukauskienė & Sugimura, 2014). The adolescents and older adults were excluded from the study. In this drive, the young adults with internet addiction who had psychiatric comorbidity were also excluded from the study.

Measures

Informed Consent and Demographic Sheet

The study included a compulsory written informed consent & demographic information sheet. Each participant was required to sign the informed consent before taking part in the study. The demographis sheet included questions related to age, gender, education & duration of internet addiction.

Internet Addiction Test (IAT)

Each of twenty statements in the IAT has a 5-point Likert scale (0, 1, 2, 3, 4, or 5) which is used to determine internet addiction in young adults (Young, 1998). Participants are asked to read each statement and then select option that most accurately characterizes their behavior, based on how they have felt or behaved over the course of the previous month. The scale goes from 0 (not applicable) to 5 (always). The IAT total score is obtained by adding ratings for all 20 items, with a maximum score of 100. Total scores between 0 and 30 are thought to represent a normal level of Internet usage; scores amid 31 and 49 show the presence of a mild to moderate level of internet addiction; scores amid 50 and 79 show presence of a moderate level; and scores amid 80 & 100 show severe dependence. Cronbach Alpha reliability of Urdu translated version was 0.83.

Kessler Psychological Distress Scale (K10)

A simple instrument for assessing psychological discomfort is Kessler Psychological Distress Scale (K10). It has ten questions, each with a five-point rating system, about emotional states. A total score of 10 points is calculated by adding ratings for each of 10 factors. Responses range from 1 ('none of time') to 5 ('all of time'). Higher scores imply psychological distress, but lower scores represent less psychological distress (Kessler, Barker, Colpe, Epstein, Howes, Normand, Walters & Zaslavsky, 2003). The Cronbach Alpha reliability of the Urdu translated version was 0.89.

Procedure

IAT and K10 were translated into Urdu language so that participants can easily comprehend it as Urdu is most spoken and easily understandable language in Pakistan (Bibi & Kazmi, 2021; Rasool & Shahida, 2022). The participants were randomized in two groups by using an online randomizer. The first group included 45 participants who received weekly CBT sessions with homework assignments. Each new session started by evaluating prior homework assignment. The second group included 44 participants and received no therapy sessions and served as a control group. The investigators themselves administered the CBT sessions who were trained

in CBT by Institute of Psychological Research (SMC-PVT) LTD Pakistan and Beck Institute USA respectively. The contents of CBT sessions is outlined in Table 1. The participants of first group did not report any side effect. Both IAT and K10 were administered at baseline and posttest to evaluate the CBT outcome. The data was analyzed by Statistical Package for the Social Sciences, v25.

Table 1

Components of CBT for Internet Addiction

Session #	Components
1	History Taking, Goals and Expectations, Case Conceptualization
2	Psychoeducation about the appropriate online behaviors
3	Attitude Restructuring through Socratic Dialogue and Homework Assignment
4	Review of Homework Assignment & Attitude Restructuring over Socratic Dialogue
5	Behavior Modification, Self Control Skills, Gratification Delay, Homework Assignment
6	Review of Homework Assignment, Cognitive PS & II Communication
7	Imagery and Relaxation Techniques, Homework Assignment
8	Stress Management Skills Training especially in social settings
9	Role Playing and Homework Assignment
10	Harm Reduction Techniques, BM and Role Playing, Homework Assignment
11	Review of Homework Assignment

RESULTS OF STUDY

Table 2

Frequency Distribution of Demographic Variables (n=89)

Treatment Groups	CBT Therapy Group (n=45)		Control Group (n=44)	
Demographics	F	%	F	%
Age Groups (years)				
18-20	21	46.7	8	17.8
21-23	16	35.6	18	40.0
24-26	8	17.8	18	40.0
Gender				
Male	14	31.1	13	28.9
Female	31	68.9	31	68.9
Education				
Intermediate	3	6.7	4	8.9
BS (Hons)	37	82.2	25	55.6
MPhil	5	11.1	15	33.3

Table 3

Descriptive Statistics of Continuous Variables (n=89)

Treatment Groups	CBT Therapy Group (n=45)				Control Group (n=44)			
Demographic Variables	M	SD	Min	Max	M	SD	Min	Max
Age	21.24	2.11	18	26	22.59	2.07	19	26
Duration	4.75	2.10	2	7	4.68	1.73	1	7

Table 4

Descriptive Statistics of Therapy and No Therapy Groups (N=89)

	Pre-Therapy				
Variables	IA	IAL	PD	PDL	*N*
Treatment Groups	M (SD)	M (SD)	M (SD)	M (SD)	
CBT therapy group	59.57 (16.91)	1.91 (.79)	27.42 (6.66)	1.95 (.76)	45
Control group	65.45 (21.25)	3.11 (.84)	29.31 (7.42)	3.11 (.96)	44
	Post Therapy				
Variables	IA	IAL	PD	PDL	*N*
Treatment Groups	M (SD)	M (SD)	M (SD)	M (SD)	
CBT therapy group	50.62 (15.29)	1.42 (.62)	23.08 (6.10)	1.44 (.75)	45
Control group	67.52 (18.97)	3.38 (.61)	30.61 (7.02)	3.25 (.83)	44

According to the descriptive data, CBT therapy group exhibited reduction in internet addiction (M = 59.57, SD = 16.91 vs M = 50.62, SD = 15.29) and psychological distress (M = 27.42, SD = 6.66 vs M = 23.08, SD = 6.10) than the control group (M = 65.45, SD = 21.25 vs M = 67.52, SD = 18.97) and (M = 29.31, SD = 7.42 vs M = 30.61, SD = 7.02) respectively at post therapy. Results of post-therapy confirmed reduction in internet addiction and psychological distress in therapy group, increase in internet addiction and psychological distress in control group at post therapy assessment.

Table 5

Comparison of Treatment Efficacy (N=89)

	CBT Therapy Pair (n=45)						
Variables	Difference M (SD)	t	df	p	LL	UL	Cohen's d
IA	8.95 (4.15)	14.45	44	.000	7.70	10.20	2.15
IAL	.48 (.50)	6.48	44	.000	.33	.64	.96
PD	4.33 (1.59)	18.22	44	.000	3.85	4.81	2.72
PDL	.51 (.54)	6.24	44	.000	.34	.67	.94
	Control Group Pair (n=44)						
Variables	Difference M (SD)	t	df	p	LL	UL	Cohen's d
IA	-2.06 (4.85)	-2.82	43	.007	-3.54	-.59	-.42
IAL	-.27 (.45)	-4.01	43	.000	-.40	-.13	-.60
PD	-1.29 (5.29)	-1.62	43	.11	-2.90	.31	-.24
PDL	-.13 (.82)	-1.09	43	.27	-.38	.11	-.15

The CBT therapy group showed the statistically significant decrease in both internet addiction and psychological distress. With a small effect size, post-therapy scores for both measures were significantly lower than baseline levels. With a significant t-value of 14.45 (p <.05), the mean reduction in the internet addiction was 8.95 (SD = 4.15). Moreover, there was also a significant reduction in internet addiction levels (t= 6.48, p <.05, Cohen's d=.96) and an average drop in internet addiction levels of 0.48 (SD = .50). Similarly, psychological distress was reduced by 4.33 (SD = 1.59), indicating a medium effect size (Cohen's d = 2.72) and a significant t-value of

18.22 (p <.05). On the other hand, compared to the baseline, the internet addiction scores of the control group significantly increased, indicating an increasing tendency in the intensity of the addiction.

This group's post-test results showed a significant increase in the severity of internet addiction too. Thus, with a small effect size (Cohen's d = -0.42) and a significant t-value of -2.82 (p<.05), the internet addiction increased by an average of 2.06 (SD = 4.85). Additionally, there was a significant increase in internet addiction levels of .27 (SD = .45, t = -4.01, p <.05, Cohen's d = -0.60). Psychological distress did not show a significant increase (MD = -1.29, SD = 5.29, t = -1.62, p>.05, Cohen's d = -0.24). Similarly, the levels of psychological distress also did not show a significant increase (MD = -0.13, t = -1.09, p>.05, Cohen's d = -0.15). the participants showed the same amount of the psychological distress at the baseline and at post therapy assessment. While psychological distress scores increased post-test, they did not differ statistically from the baseline.

Table 6

Gender Differences in Therapy and No Therapy Groups (n=89)

		Therapy Group (n=45)				Control Group (n=44)			
		Male (n=14) M (SD)	Female (n=31) M (SD)	t (df)	p	Male (n=13) M (SD)	Female (n=31) M (SD)	t (df)	p
Pre Therapy	Internet Addiction	62.00 (14.97)	58.48 (17.84)	.64 (43)	.52	73.76 (20.07)	61.96 (21.06)	1.71 (42)	.09
	Psychological Distress	27.50 (6.33)	27.38 (6.90)	.05 (43)	.95	32.69 (8.23)	27.90 (6.69)	2.02 (42)	.050
Post Therapy	Internet Addiction	52.92 (13.80)	49.58 (16.02)	.67 (43)	.50	75.58 (18.80)	64.87 (18.60)	1.68 (41)	.09
	Psychological Distress	22.92 (6.01)	23.16 (6.23)	-.11 (43)	.90	33.00 (8.12)	29.61 (6.38)	1.48 (42)	.14

Study found no significant gender differences in internet addiction or psychological distress at post assessment in both therapy and control group. There was no significant gender difference in post-treatment internet addiction (t (43) = .67, p >.50 vs t (41) = 1.68, p >.50) in therapy and control group respectively. Psychological distress did not show significant gender differences at post therapy assessment in therapy (t (43) = -.11, p >.50) and control groups (t (42) = 1.48, p >.50).

DISCUSSION

The CBT therapy group showed a statistically significant decrease in both internet addiction and psychological distress. With a small effect size, post-therapy scores for both measures were significantly lower than baseline levels. The results of this study correlate with earlier studies on efficacy of cognitive-behavioral therapies in reducing teenage internet addiction (Young, 2013). In particular, within the unique group of Arab students in Israel, these results support that cognitive-behavioral training improves self-control and reduces internet addiction. The

emphasis given by the intervention program on teaching the students how to manage internal impulses might be given to this outcome, as it helps students become aware of their impulsive and habitual behaviors that lead to the establishment of adverse addictive habits like internet addiction (Diotaiuti, Girelli, Mancone, Corrado, Valente & Cavicchiolo, 2022). For a number of reasons, it is challenging to pinpoint the specific advantages and traits of CBT, despite the fact that it is generally accepted as an effective treatment for the internet addiction (Yang et al., 2023).

Nevertheless, little is known regarding long-term efficacy of CBT in treating internet addiction because it is a relatively recent empirical concept, especially in cross-cultural settings (Agbaria, 2022). The internet addiction scores of the control group significantly increased, indicating an increasing tendency in the intensity of addiction without treatment. An interesting Australian study involving a Chinese sample of the internet addicts provided an in-depth description of treating internet addiction using group CBT in educational settings. According to the findings, participants who received CBT showed the significant enhancements in emotional well-being, regulating functions, and self-management skills when compared to untreated control group (Rooij, Zinn, Schoenmakers & Mheen, 2010). In this connection, it is logical to look into how current addiction treatment techniques and practices might be modified for online addiction given the behavioral, psychological, and neurological connections amid the internet addiction and more traditional types of addiction (Goslar, Leibetseder, Muench, Hofmann & Laireiter, 2020).

A leading Dutch addiction treatment organization, initiated a pilot program in 2009 to test the practicality of implementing the CBT-based intervention, "Lifestyle Training," to people who identified as internet addicts (Rooij et al., 2010). The purpose of this project was to investigate if internet addiction might be successfully treated with proven addiction therapies. This study aimed to assess efficacy of Lifestyle Training program as a pilot therapy for internet addiction. The curriculum covers multiple forms of addiction, including compulsive gaming (Servidio et al., 2021). Prior to evaluating the efficacy of the intervention, the study seeks to determine how well the program addresses particular problems related to internet addiction. The therapists' experiences are qualitatively analyzed in order to do this. Based on this, the essential elements of an internet addiction treatment program that works are determined. According to Kuss & Lopez-Fernandez (2016), research thereby, improves understanding of therapeutic techniques & the clinical presentation of emotional, behavioral and social disorders associated to internet use.

The study found no significant gender differences in the internet addiction or psychological distress at post therapy assessment in either therapy or control groups. It has been extensively shown that there are differences between genders in the addictive behaviors, such as internet addiction (Kuss et al., 2021). The current research found slight gender differences in internet addiction, psychological distress in therapy and control group, though, these differences were not significant. The females had slight increase in their psychological distress levels in at post therapy assessment in therapy group, while male outnumbered females in scores and severity

of internet addiction and psychological distress in control group. Research regularly proves that men are more likely than women to use the internet excessively. In China, for example, a nationally representative survey found a notable difference: 14.8% of men and 7.0% of women reported being addicted to internet (Liang et al., 2016). Based on different behavioral patterns and reasons between genders, it appears that men are likely to develop problematic internet use.

CONCLUSION

The current study provided promising results on the efficacy of CBT for reducing the internet addiction and psychological distress in young adults. As indicated by lower post-intervention mean scores, those who got the therapy significantly reduced their levels of internet addiction and psychological distress. On other hand, as time went on, the control group showed signs of growing internet addiction and suffering. These results show that CBT has promise in treating internet addiction and associated psychological distress. There is a need to evaluate long term effects of CBT on internet addiction and psychological distress. Future researchers should get a bigger sample and conduct longitudinal studies to examine long term effects of CBT. Also, the current study only assessed the psychological distress, future studies need to focus on other associated psychological variables to make results more generalizable. The findings will help mental health professionals to consider use of CBT to manage internet addiction & associated mental health complaints. Results have significance for educational professionals & counselors too as they may learn and apply CBT to manage symptoms of internet addiction. educational professionals may make a referral to psychotherapist for the effective management of internet addiction.

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