Innovations

Comparison of Cognitive Behavioral Therapy vs Counselling on Internet Addiction, Academic Performance and Quality of Sleep among Late Adolescence: A Pilot Study

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Abstract

Background: Ivan Goldberg coined the phrase "Internet Addiction Disorder" to describe unhealthy, compulsive Internet use. The criteria for this disease are based on criteria used in the DSM-IV for disorders related to substance misuse. It is "the inability of a person to control his or her use of the internet, which ultimately results in psychological, social, academic, and/or employment difficulties in a person's life. **Aim**: The main aim of the study to assess the change in academic performance and quality of sleep by implementing Cognitive behavioral Therapy and Counselling on internet addiction among late adolescence.**Objectives:** 1. To identify the prevalence of internet addiction among adolescence. 2. To determine the effectiveness of CBT and counselling on internet addiction, academic performance and quality of sleep among late adolescence. 3. To compare the pre-test and post-test score of internet addiction, academic performance and quality of sleep among adolescence in group I, group II and control group.**Methods:** Quantitative approach and true experimental design with pre-test and post testdesign used for the study. The study population consists of first year students in selected college. Experimental group I consists of 11 students, experimental group II consist of 11 students and control group consists of 11 students who qualify the inclusion criteria were selected using simple random sampling technique. Inclusion criteria contains: 1. All first years college students 2. Age group of 17 and 18 years.3. Internet addiction score between 40 to 72. **Result:**In a study on late adolescents, Cognitive Behavioral Therapy (CBT) and counseling were administered to an experimental group. Pre-test results showed that in Experimental Group I, 36.4% had possible internet

addiction, with 63.6% likely. Academic performance varied, with 18.2% poor, 63.6% moderate, and 18.2% good. Quality of sleep was predominantly poor (81.8%). Post-test results revealed a statistically significant improvement: 72.7% had borderline internet addiction, 90.9% exhibited good academic performance, and 63.6% reported good sleep. Experimental Group II showed similar trends. The study results indicating that effectiveness of CBT and counseling in reducing internet addiction, enhancing academic performance, and improving sleep quality among late adolescents.The Control group did not show any significant changes. ***Conclusion:*** *The study's findings concluded that cognitive behavioral therapy is slightly more effective than counseling in addressing internet addiction and its impact on academic performance and sleep quality.*

Key words:*Internet addiction, Academic performance, quality of sleep, Counselling, Cognitive behavioral therapy*

Introduction

The time between puberty and maturity, often between the ages of 11 and 18, is known as adolescence. Events that occur during this time frame have a significant impact on a person's development and can affect their attitudes and behavior in subsequent years. The three substages of adolescence are early, medium, and late. Finding one's own identity and perspective on life, free from internal conflict and the need to always behave morally, submit to parental authority, or fulfil peer expectations, is one of the most crucial aspects of adolescence[1].Teenagers with internet addiction may experience the following clinical symptoms are feeling preoccupied with the internet, needing more time to play the internet, being unable to control themselves, reducing or stopping internet use, feeling restless, nervous, anxious, moody, or depressed when attempting to minimize internet duration, and always using the internet as a means of problem-solving.[3]

Adolescents who use the internet excessively do worse academically than their non-addicted peers, and they may also suffer from attention deficit and hyperactivity disorder. Additionally, it was shown that teenagers who were hooked to the internet experienced emotional and behavioral issues, had a higher risk of developing depression, and were more prone to experiencing negative feelings such social anxiety, phobia, loneliness, and suicide ideation. It has been demonstrated in some previous studies that teenagers who are Internet addicts exhibit more aggressive attitudes.[4]

Internet addiction illness is linked to co-occurring mental disorders and emotional issues such anxiety, sadness, eating disorders, attention deficit hyperactivity disorder, and hostility. Such co-morbid illnesses made it difficult for a person to function normally every day. Job loss, marital discontent, divorce, family conflicts, social exclusion, academic failure, absenteeism or exclusion from school and classrooms, sleep disturbances, musculoskeletal pain, tension headache, eating problem, fatigue, vision problems, and cognitive abilities like

verbal communication, calculation, and memory are just a few of the negative effects of internet addiction.[5]

In general, cognitive behavioral therapy (CBT) enables addicts to comprehend addictive thoughts, feelings, and behaviors while learning new coping mechanisms and ways to avoid relapsing. Three months of CBT therapy, or roughly twelve weekly sessions, is the norm. It has been recommended that the first phase of therapy for Internet addicts should be behavioral, concentrating on certain actions and circumstances where the impulse control disorder presents the most challenge. As the therapy goes on, the emphasis shifts to the cognitive biases and distortions that have formed and how this affect behaviour[6].

Need for Study

According to estimates, 6.0% of 12- to 41-year-olds worldwide have Internet use disorders (IUD), with the Middle East having the highest prevalence. In 2013, 70% of teenagers (aged 14 to 18) utilised social media every day, and by 2018, 45% of teenagers spent "almost all the time" online.[7]

Internet addiction is common in Iran at a rate of 20%, and another study found that the prevalence is 23%. In Iran, internet addiction affects both male and female students to varying degrees (33.8% and 20%, respectively). In the fields of epidemiology, clinical sciences, and basic sciences, respectively, 68.8% and 26.35% of students and graduates used the internet moderately or lightly, showing a significant risk of serious addiction.[8]

In Turkey, Sabriye Ercan et al. 2023conducted a randomised controlled trial on the impact of solution-focused education and counselling on problematic internet use, sleep quality, and academic achievement among 44 adolescents, and found that the intervention group's median Internet Addiction Test and Pittsburgh Sleep Quality Index scores were significantly lower than those of the controls (P 0.05), and that there was a moderately positive correlation between problematic Internet use and sleep. The education and counselling intervention improved sleep quality while reducing problematic Internet use. School performance also saw an improvement.[9]

The use of the Internet has become much more widespread. According to a Kantar ICUBE estimate, India will have 639 million monthly active Internet users, an 11% increase from 2019. In India, the age range of Internet users is 12-29 years.[10]

India's use of the internet and broadband has been growing rapidly, with 665.31 million internet users in 2019. (11). Based on review study and articles the investigator aimed at the effectiveness of cognitive behavioral therapy verses counselling on internet addiction, academic performance and quality of sleep among late adolescence.

Aim of the Study

The main aim of the study to assess the change in academic performance and quality of sleep by implementing Cognitive Behavioural Therapy and Counselling on internet addiction among late adolescence.

Objectives of the Study

1.To identify the prevalence of internet addiction among adolescence. 2. To determine the effectiveness of CBT on internet addiction to promote the academic performance and quality of sleep among late adolescence in experimental group I. 3. To determine the effectiveness of counseling in terms of internet addiction academic performance and quality of sleep among adolescence in experimental group II. 4. To assess the pre test score and post- test score of internet addiction, academic performance and quality of sleep among adolescence in control group.

Hypothesis

H_1- There will be a significant change in pre-test and post-test score of internet addiction among late adolescence after cognitive behavioural therapy, counselling in the group I and group II

H_2- There will be a significant change in pre-test and post-test score of academic performance, quality of sleep among late adolescence after cognitive behavioural therapy, counselling in the group I and group II

Material and Methods

Quantitative approach and true experimental design with pre-test and post-test design used for the study. The study population consists of all first-year students in selected colleges. The data was collected from 33 students from selected colleges. Experimental group - I consists of 11 students from the morningcollege and Experimental Group–II consists of 11students fromthe eveningcollege. The control group consists of 11 studentsfrom regular college. The students who qualify for the inclusion criteria were selected using a simple random sampling technique.

Inclusion criteria contain: 1. All first years college students 2. Age group of 17 to 18 years.3. Internet addiction score between 40 to 72. Exclusion criteria contain: 1. Students who are already under any therapy for internet addiction 2. Students who are not able to communicate in Tamil.Tools consist of a self-assessment young's internet addiction tool, Academic performance rating scale and Pittsburgh Sleep Quality Index (PSQI).

Data Collection Procedures

For the pilot study,300 students from selected colleges were screened with self assessment young' internet addiction tool.95 studentswere scored 40 to 72.out of 95 students 33 students were slected as sample by using simple random sampling technique.After allotting the sample, the study was explained and the written

informed consent obtained from each sample and their parents. The sample made to seat comfortably.

A pre-test was conducted for the experimental-I, experimental-II, and control groups using demographic data, an academic performance rating scale, and a quality of sleep tool for each sample. The experimental group-I (11 students) received CBT once in a week for12 weeks. The CBT-IA model is a comprehensive approach divided into three stages: behaviour modification, cognitive restructuring, and harm reduction therapy (HRT). The experimental group - II (11 students) received counselling once in a week for 12 weeks.Each session of counselling will be given in five stages, relationship building, Assessment, goal setting, Intervention, termination. After 12 weeks, experimental-I, experimental-II and control groups were given a post-test. The control group (11 students) received no intervention. The data was analysed using both descriptive and inferential statistics.

Results
Experimental group– I (CBT)
Demographic data shows that in the aspect of age,6 (54.5%) of in 17 – 17.11 month and5 (45.5%) were in 18-18.11months. Regarding Gender, 9 (81.8%) were male and 2 (18.2%) were female. About 5 (45.5%) were used laptop, 2 (18.2%) were used mobile and 4 (36.4%) were used tab. Majority of adolescence3(27.3%) were spent 1-2 hours in internet, 8 (72.7%) were spent 2-4 hours.

In experimental group- I pre-test score on internet addictions revealed that 4 (36.4%) had possible internet addiction and 7 (63.6%) had likely internet addiction level. In academic performance ,2 (18.2%) had poor performance, 7 (63.6%) had moderate performance and 2 (18.2%) had good performance. In quality of sleep level, 2 (18.2%) had good sleep and 9 (81.8%) had poor sleep.

Post test score on internet addiction revealed that 8 (72.7%) had borderline internet addiction and 3 (27.3%) had little or no internet addiction level. Regarding academic performance level it showed that 10 (90.9%) had good performance and 1(9.1%) had moderateperformance.Regarding posttest quality of sleep level in experimental group-I shows that 7 (63.6%) had good sleep and 4 (36.4%) had poorsleep.

Experimental group – II (Counselling)
The demographic data shows that in the aspect of age, 5 (45.5%) of in 17 – 17.11 month and6 (54.5%) were in 18-18.11 months. Regarding Gender, 5 (45.5%) were male and 6 (54.5%) were female.About 9 (81.8%) were used laptop, 2 (18.2%) were used mobile. Majority of adolescence 3(27.3%) were spent 1-2 hours in internet, 2 (18.2%) were spent 2-4 hours and 6 (54.5%0 were spent 4 and above hours.

In experimental group – II pre-test results shows that in internet addiction showed that 6 (54.5%) had likely internet addiction and 5 (45.5%) had possible internet

addiction level. In academic performance (81.8%) had moderate performance, 1 (9.1%) had good performance and 1(9.1%) had poor performance. In quality of sleep 3 (27.3%) had good sleep and 8 (72.7%) had poor sleep.

Posttest score on internet addiction showed that 1 (9.1%) had little or no internet addiction and 10 (90.9%) had borderline internet addiction level. Regarding academic performance it showed that 8 (81.8%) had moderate performance 1 (9.9%) had good performance and 1(9.1%) had poor performance. In quality of sleep result showed that 4 (36.4%) had good sleep and 7 (63.6%) had poorsleep.

Control group:

The demographic data shows that in the aspect of age 8 (72.7%) of in 17 years and 3 (27.3%) were in 18 years. Regarding Gender, 7 (63.6%) were male and 4 (36.4%) were female. About 6 (54.5%) were used laptop, 3 (27.3%) were used mobile and 2 (18.2%) were used tab. Majority of adolescence were spent 1-2 hours 6 (54.5%) in internet, 2 (18.2%) were spent 2-4 hours and 3 (27.3%) were spent 4 and above hours.

In control group pretest score on internet addiction showed that 9 (81.8%) had likely internet addiction and 2 (18.2%) had possible internet addiction. In academic performance 6(54.5%) had moderateperformance, 5(45.5%) had good performance. In quality of sleep 1 (9.1%) had good sleep and 10 (90.9%) had poor sleep.

Post test score on internet addiction showd that 8 (72.7%) had likely internet addiction and 3 (27.3%) had possible internet addiction. In academic performance, 6 (54.5%) had good performance level and 5 (45.5) had moderate performance level. In quality of sleep, 9 (81.8%) were had poor sleep and 2 (18.2%) had good sleep.

Table: 1 Comparisonfor the effect of CBT and Counselling on internet addiction among late adolescence

	Test	Mean	SD	Mean Difference	T value	p-value
Experimental Group- I Internet addiction	**Pre-test**	63.73	6.451	31.81	20.954	P<0.001**
	Post-test	31.91	2.592			
Experimental Group- II Internet addiction	**Pre-test**	54.55	9.342	17.18	6.644	P=0.001**
	Post-test	37.36	2.942			
Control group Internet addiction	**Pre-test**	69.27	5.140	0.81	0.791	P=0.447
	Post-test	66.45	6.072			

**Highly Significance where p<0.001 * Significance where p<0.001

Table 1 shows the paired t-test which was used for the analysis of CBT and counselling on internet addiction among late adolescence. The mean score in pre-test was in group I was 63.73 which was reduced to 31.91 in post-test. The mean score in pre-test was in group II was 54.55 which was reduced to 37.36 in post-test. The p value for group I and II is <0.001 which showed the highly significance. The control group did not show the significance. Hence H_1 is accepted.
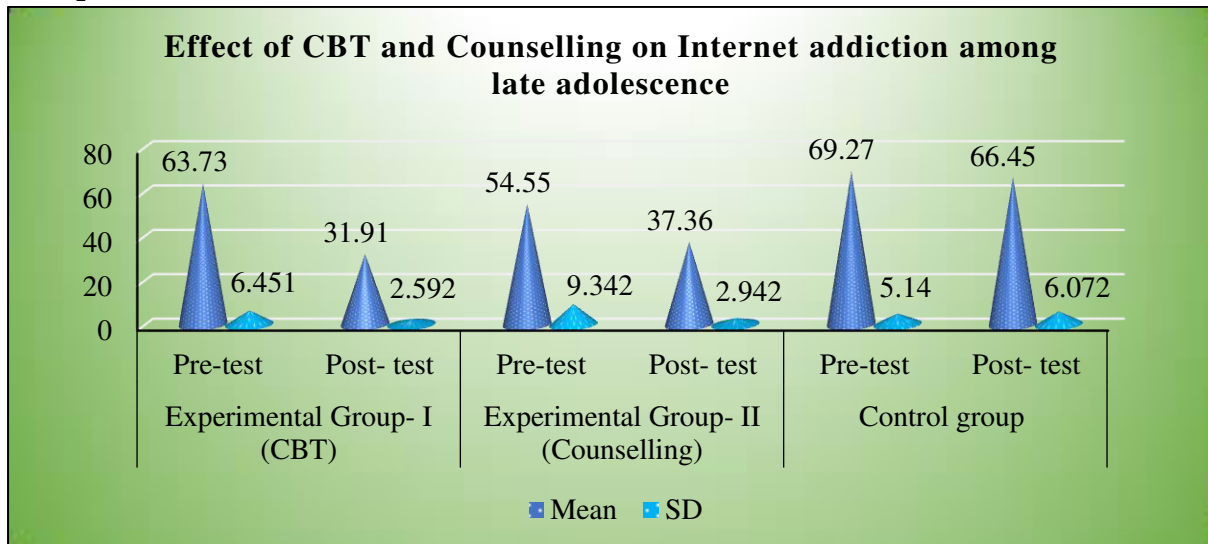

Figure: 1 Cone diagram representing the mean and SD score of CBT oninternet addiction among late adolescence

Table: 2 Comparison on the effect of CBT and counselling on Academic performance and quality of sleep among late adolescence

Group	Test	Mean	SD	Mean Difference	T value	p-value
Experimental Group- I Academic performance	Pre-test	12.18	5.193	9.27	12.041	P<0.001**
	Post-test	29..09	3.015			
Experimental Group- II Academic performance	Pre-test	18.91	4.323	4.81	2.497	P= 0.032*
	Post-test	23.73	2.832			
Control group Academic performance	Pre-test	15.55	5.222	0.90	1.791	P=0.341
	Post-test	16.45	5.222			
Experimental Group- I	Pre-	14.45	5.31	9.27	4.814	P<0.001**

Quality of sleep	test					
	Post-test	5.18	1.72			
Experimental Group- II **Quality of sleep**	Pre-test	16.36	7.94	5.81	3.586	P=0.005*
	Post-test	10.55	5.71			
Control group **Quality of sleep**	Pre-test	19.45	5.12	1.54	1.000	P=0.341
	Post-test	17.91	6.87			

*Highly Significance where p<0.001 * Significance where p<0.001

Table 2 shows the paired t-test which was used for the analysis of CBT and counselling on academic performance and quality of sleep among late adolescence. In academic performance the mean score in pre-test was in group I was 12.18 which was increased to 29.09 in post-test. The mean score in pre-test was in group II was 18.91 which was increased to 23.73 in post-test. The p value of group I is <0.001 and group II is <0.003 which showed the significance. The control group did not show the significance where P=0.341. In Quality of sleep the mean score in pre-test was in group I was 14.45 which was reduced to 5.18 in post-test. The mean score in pre-test was in group II was 16.36 which was reduced to 10.55 in post-test. The p value of group I is <0.001 and group II is <0.005 which showed the significance. The control group did not show the significance where P=0.341. Hence H_2 is accepted.
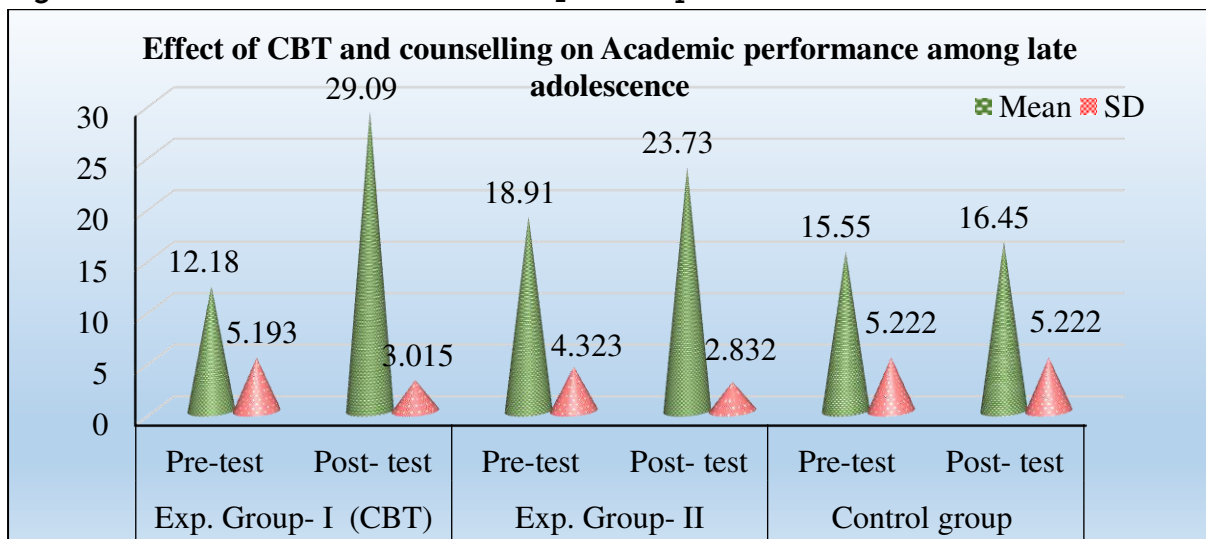

Figure: 2 Cone diagram representing the mean and SD score of CBT and Counselling on Academic performance among late adolescence
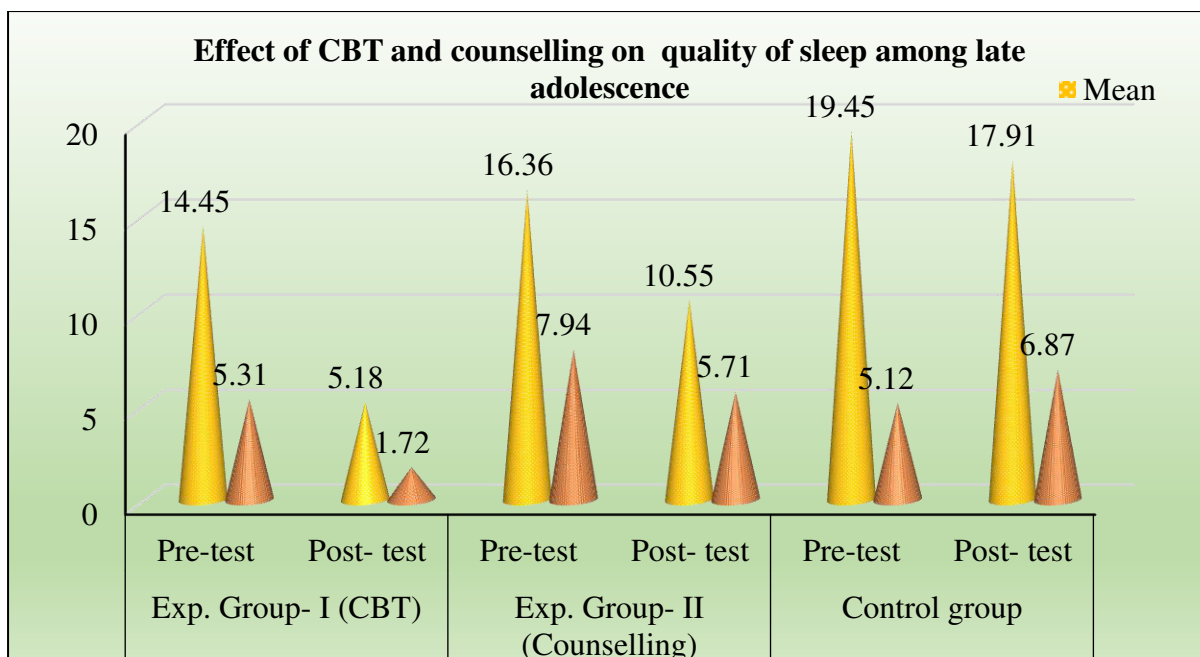
Figure: 3 Cone diagram representing the mean and SD score of CBT on quality of sleep among late adolescence

Discussion:

The current study was conducted to assess the change in academic performance and quality of sleep by implementing Cognitive Behavioural Therapy and Counselling on internet addiction among late adolescence.Excessive internet usehas been linked to various negative outcomes, including mental health issues such as loneliness, low self-esteem, anxiety, and depression. Particularly among students, prolonged engagement in computer games or other IA behaviors can result in sleep deprivation and increased fatigue.Cognitive behavioral therapy (CBT) highlights the connection between behaviors, thoughts, and emotions, encouraging patients to become more mindful of these aspects. By recognizing their thoughts and feelings, individuals can identify triggers for addictive behaviors. Numerous studies have found CBT to be effective in addressing IA, consistent with the findings of our study.Through counseling, participants come to understand that they actively choose to engage in unhealthy internet usage and bear responsibility for the physiological and psychological challenges that ensue from excessive online activity.

Based on the finding theInternet addiction mean pretest score onexperiementgroup-I was 63.73 which was reduced to 31.91 in post-test. The mean score in group II was 54.55 which was reduced to 37.36 in post-test. The p value for group I and II is <0.001 which showed the highly significance. The control group did not show the significance.In academic performance the mean pretest score in experiement group-I was 12.18 which was reduced to 29.09 in post-test. The mean score in pre-test was in group II was 18.91 which was reduced to 23.73 in post-test. The p value of group I is <0.001 and group II is

<0.003 which showed the significance. The control group did not show the significance where P=0.341.In Quality of sleep mean pretest score in experiement group-I was 14.45 which was reduced to 5.18 in post-test. The mean score in pre-test was in group II was 16.36 which was reduced to 10.55 in post-test. The p value of group I is <0.001 and group II is <0.005 which showed the significance. The control group did not show the significance where P=0.341.The study finding show Cognitive Behavioral Therapy (CBT) and counseling have effectiveness in reducing internet addiction, enhancing academic performance, and improving the quality of sleep among late adolescents. The results are statistically significant.

Conclusion:

The study finding concludedthat there is a significance difference in pre-test and post-test score of internet addiction, academic performance and quality of sleep-in experimental group I and experimental group II. Cognitive behavioral therapy is slightly more effective than counseling in addressing internet addiction and its impact on academic performance and sleep quality. Further larger studies are recommended to determine the effectiveness of various intervention on internet addiction among adolescent students.

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