



The Effect of Cognitive Commitment of Behavioral Therapy on Internet Addiction among Adolescents in Kupang City

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Abstract. Internet used increased rapidly among adolescent. It was due an addiction since assessible of internet was very easy. A quasi-experimental study pre-test and post-test design was applied in this study. Fifty-eight samples were recruited and divided into experimental group (n=280) and the control group (n=30) by using the simple random sampling. We analyse all data with Wilcoxon Sign Ranks Test and Man-Whitney U Test and with a significance level was 0.05. The findings showed that there are positive effects cognitive commitment behavioral therapy on internet addiction among intervention group before and after receiving the intervention (p = 0,000). Regarding the mean difference, between the experimental and control group showed there are significant different on addiction (p = 0,000) after receiving the program. CCBT has a positive effect on lowering the level of internet addiction. Therefore, we recommended to apply CCBT effectively in the health care services, school, as well as community community level to reduce internet addiction.

Keyword: cognitive commitment of behavioral therapy,
internet addiction, adolescents



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INTRODUCTION

Cognitive development in adolescents aged over 11 years, progress in thinking is more rational/logical. In general, the characteristics of adolescents are still looking for identity (Ego Identity) (1) by doing group activities, among others, forming WhatsApp groups, facebook groups, and always following fashion trends (2) so that teenagers will try to impose their will so that they are seen not to stutter technology, the minds of teenagers who should be logical eventually experience distortion. For example "I am a busy teenager, have to play the internet

and conclude" I am a great teenager ", or" if I am not online, the world is like a dead/dead" (3) online can cause them to forget loneliness, so they do not need social interaction in the real world (4) online can solve problems that are experienced, overcome frustration in education, overflow a sense of social anger (5).

Excessive internet use will have effects including cognitive and behavioral distortions, including loss of time management skills, interpersonal communication is disrupted, compulsive Internet use, tolerance, and withdrawal, psychological disorders such as social anxiety, depression (6), obsessive, emotional stability, and academic (7), social, financial and work interactions. Individuals, comorbid psychiatric disorders. Panic Disorders (Panic Disorders) and anxiety (8).

To reduce internet addiction, it requires a cognitive change in behavior and attitudes and commitment to the action plan so that ultimately health improvement and the ability to use the internet wisely, namely by providing interventions from psychotherapy, namely Behavioral Treatments (BT) (9), Cognitive Therapy Behavioral therapy (CBT) (10). Acceptance and commitment therapy (ACT) (11) Motivational interviewing (MI) (12), Mindfulness behavioral cognitive treatment (MBCT) (13), complementary treatment (14). Recreational therapy, music therapy, art therapists and (15).

OBJECTIVE

The study aimed to examine the effect of CCBT on decreasing levels of Internet addiction among adolescents.

METHOD

The study used a quasi experimental pre-test and post-test design with non equivalent control group. Fifty-eight samples which is 28 of samples were experimental group and 30 samples allocated into control group. We collected samples at SMAN 3 Kota Kupang and at SMAN 4 Kota Kupang by using the simple random sampling. Inclusion criteria were high school adolescents of class X, privately owned smartphones. Using a smartphone >3 months, Duration of use >4/hour, Internet addiction with Score >70, willing to participate in this study. The informed consent was required after all participants willing to participate in this study and patients stayed with the parents/guardians. The exclusion criteria was incompleting students to participate from the beginning until the end.

The intervention group received the Cognitive Commitment Behavioral Therapy (CCBT) module. The intervention consisted of 5 sessions and each session was once in five days. The content of intervention including; session I: Identify negative feelings, thoughts and automatic behaviors in disturbing internet usage; Session 2: reviewing feelings, thoughts, behavior related to internet usage and being aware that this is negative; choose alternatives/ways to overcome internet use, and mention positive/ negative consequences, and train ways to fight feelings, negative thoughts that interfere with clients; Session 3: developing a positive internet usage behavior plan to change the negative behavior that arises due to internet addiction which gives negative and positive consequences to clients; session 4: application of commitments to reduce negative behavior and from internet addiction; and session 5: evaluation of cognitive therapy and new behavior. Each group consists of 10 people with duration of 45-60 minutes per session.

The instrument was modified from previous study (16, 17). This scale used a Likert scale consisting of 5 scale including 1: never; 2: rarely; 3: sometimes; 4: often and 5: always. For pre and post-test, researchers, use version (18). The measuring instrument consists of 20 items with 6 indicators, namely covering the extent to which their Internet use affects their

daily routine, social life, productivity, sleeping patterns, and feelings. With Alpha Cronbach's done in elementary school 0.89, in middle school 0.91, in this study the researchers modified by adding items to criteria for interpersonal conflict (19).

This instrument has been tested for validity and reliability by researchers at SMAN with alpha Cronbach's 0.732. Pre-post was carried out 2 days before the intervention was conducted and the post-test was conducted one month after the intervention. The CCBT mechanism is carried out by using an educational method with counseling techniques, through cognitive restructuring, more emphasized to the client to understand his condition, then accept it and try to change his mind, negative behavior in accordance with the values adopted, but a commitment is needed to change it from the respondent. On the implementation of nurses as researchers slightly modified by touching the method of self-help techniques.

RESULTS

Characteristics of respondents

Table 1. Showed that the characteristics of respondents based on gender. Most of the respondents were women, and were mostly using own smartphones. All respondents used the internet was more than one year. Regarding the length of time on internet access, most of respondents spent times for 7-9 hours per day. They access internet for games playing and watching movies.

Table 1 Characteristics of respondents

Characteristics Respondents	Group Intervention (28)		Group Control (28)		(p Value)
	n	%	n	%	
Gender					
Man	5	17.9	10	33.3	00.03
Women	23	82.1	20	66.7	
Internet access via HP (GPRS / General packet radio service)					
Yes	28	100	30	100	
No	0	0	0	0	
Wi-fi (at home)					0.036
Yes	8	28.6	5	16.7	
No	20	71.4	25	83.3	
Devices used to access the internet					
Computer / laptop					0.02
Yes	18	64.3	23	75,7	
No	10	35.7	7	23.33	
Smartphone					
Yes	28	100	30	100	
No	0	0	0	0	
How long do you use the internet					
0-3 months	0	0	0	0	
4-6 months	0	0	0	0	
7-12 months	0	0		0	
More than 1 year	28	100	30	100	
How long do you access the internet per day					0,431
1-3 hours	0	0	0	0	
4- 6 hours	2	7.1	0	0	
7-9 hours	16	57.2	25	83.3	
10-12 hours	10	35,7	5	16.7	
What do you do most often when accessing the internet?					0.147

Characteristics Respondents	Group Intervention (28)		Group Control (28)		(p Value)
	n	%	n	%	
Watching movies					
Yes	22	78.6	20	66.7	
No	6	21.4	10	33.3	
Online game					
Yes	25	89.3	25	83.33	
No	3	28.6	5	16.7	
<i>Online Shoopng</i>					0.000
Yes	15	53.6	25	83.33	
No	13	46.4	5	16.7	
Social media					
Yes	28	100	30	100	
No	0	0	0	0	
<i>Instant Messenger (Whatsapp, Line)</i>					
Yes	28	100	30	100	
No	0	0	0	0	
Music / video streaming					
Yes	15	35.7	25	83.3	
No	13	46.4	5	16.7	
Reading news					
Yes	10	35.7	10	33.3	
No	18	64.3	20	66.7	
<i>Online Learning</i>					
Yes	0	0	0	0	
No	28	100	30	100	

Mean difference of internet addiction among intervention group and control group before and after receiving the CCBT

Table 2 showed that after receiving the cognitive commitment behavioral therapy (CCBT) decreased the level of Internet addiction (median was 50.00) than before receiving the intervention (median was 72.00) with p- value was 0.000.

Regarding the mean comparison of intervention group who received CCBT and the control group who received the routine intervention showed decreasing of Internet addiction. The median score after receiving the intervention among the experimental group was 50 and the control group was 74.00. The Wilcoxon Signed Ranks Test test results showed a p-value was 0.000. Therefore, there was significant difference between the experimental group and the control group on Internet addiction.

Table 2. Mean difference of internet addiction among intervention group and control group before and after receiving the CCBT

Group		Mean	Delta mean	Mean Ranks	Ranks Negative+ Postivie +Ties	Median Min-max)	SD	Wilcoxon test
Group Intervention (28)	Pre	72.00	22.86	14.50	28+0+0	72.00 (70-75)	1.700	<i>P value</i> .000
	Post	49.14				50.00 (32-69)	12.99	
							8	
Group Control (30)	Pre	76.71	0.04	5.00	4+5+21	75.50(69-86)	5.855	<i>P value</i> 0.0739
	Post	76.22				74.00(69-86)	5.499	

The effect of CCBT on component of the sub-variables internet addiction among intervention group and control group

Table 3 explained the effect of CCBT on component of the sub-variables internet addiction among intervention group and control group. The findings showed that experienced a decrease in the intervention group were converting the extent to which their Internet use affects their daily routine and feelings. While in the control group, a small proportion of respondents experienced a decrease in the interpersonal conflict sub-variables

Tabel 3. The effect of CCBT on component of the sub-variables internet addiction among intervention group and control group

Sub variable Internet addiction	Group Intervention			Group Control		
	Negative	Ties	Mean Rank	Negative	Ties	Mean Rank
Converging the extent to which their internet use affects their daily routine	22	6	11,50	2	27	2.50
Social life	13	14	7.96	0	0	.00
Conflict interpersonal	13	10	11.19	7	3	8.07
Productivity	13	13	8.38	2	28	1.50
Sleeping patterns	15	13	8.00	5	21	5.40
Feelings	21	7	11.00	2	26	2.50

DISCUSSION

Based on the results of the study, the level of internet addiction in both the intervention and control groups before being given treatment, all experienced addiction problems, from the data on the respondents' characteristics, all respondents accessed the internet using HandPhone (GPRS), mostly using computer devices (laptops). Based on internet usage: all respondents in both the intervention and control groups use more than one year, with time of internet usage per day: 7- 9 hours, most of the big uses for social media, Instant messenger (WA, Line), watching movies (Korean drama, cartoons, comics) and playing games (Player unknowns battleground (PUBG). Most of the respondents, also, at the school were prepared with facilities such as computer laboratories and had an Internet hotspot area that could be accessed 24 hours. The growth of the internet has brought change and become an integral part of modern life, making life easier and providing many benefits (20).

Adolescence is a period in which individuals leave childhood entering adulthood. Therefore the teenage period can be said to be a period of transition from childhood to adulthood. At this time individuals experience challenges in the process of development, both from within themselves and from outside, especially the social environment (1). One of the characteristics or characteristics of its development, the range of adolescents, among others: freedom of self in finding peers more selectively, having a picture of themselves, can realize feelings of love, have the ability to think imaginary (21). Adolescent conflict with parents to seek security and also seek popularity, and have unrealistic standards of appearance. This behavior if in fertilizer continues to make teenagers become (2). There are many activities of groups of teenagers who need fast information, so they form groups, such as whatsapp groups, Facebook groups, so as to create a sense of euphoria (1).

The adolescence brain has dopamine levels that increase in the pre frontal cortex, but it decreases in the nucleus accumbens/ pleasure center. This decrease in dopamine levels makes teens need more excitement and stimulation to achieve the same level of pleasure as adults. As a result, teens are more likely to try risky and addictive things. Adolescent nerves are still in the formation stage, adolescents are easier to make such behavior become an addiction.

Based on the results of statistical tests after being given treatment Cognitive Commitment Behavioral Therapy (CCBT) was found that most respondents in the intervention group experienced a decline from the level of addiction to be problematic, this is evident in sub-variables that decreased: converting the extent to their internet use affect daily routines and feelings

This was proven by the research of Taquet, Romo, Cottencin, Ortiz, & Hautekeete, 2017 on 124 respondents, who were addicted to video games: it was proven to reduce the level of cognitive impairment, emotion playing time per week (0.38, $p < 0.001$) and desire (0.44; < 0.001)

Young research in 2013 with 128 respondents through 12 sessions, the results: before therapy: 4.63 (0.53); $P = < 0.005$. After therapy: follow up 1 month results: 2.41 (0.52; $P = 0.01$) (22), then supported by Kim Sang Hyun's research in 2018 with 17 respondents aged 12-17 years, CBT in the group of eight school-based sessions, one-month evaluation. The result is statistical significance based on p -value < 0.05 (23). Adolescence, if they don't play the internet, feel the world is empty if they don't play the internet (3).

Cognitive Commitment Behavioral Therapy (CCBT) is a psychosocial intervention that integrates cognitive modification, commitment, and behavior through positive cognitive restructuring (24). The mechanism of CCBT in overcoming the problem of adolescents with internet addiction is done by an educational method with counseling techniques, through cognitive restructuring, more emphasized to the client to understand his condition, then accept that negative thought, then the client tries to change the mind, behavior, according to the values adopted. However, positive commitments are also needed, which are proven to reduce the level of internet addiction in adolescents.

In the CCBT intervention, researchers slightly modified with a touch of the Self-help group, where session one after negative thoughts and behaviors were identified, the researcher allowed the client (respondent) to choose one negative thought and behavior agreed to by the group. To observe thoughts and behavior at home the researcher prepares a workbook. Clients record negative thoughts and behaviors that arise (self-monitoring), tables are prepared in the book to make daily activities. To find out whether the respondent did, the nurse asked the parents to help control by signing the client workbook

This is following the research conducted by Suprpto & Nurcahyo in 2015 about "Development of the book Self-Help Cognitive Behavioral Therapy (CBT) for teens who are addicted to the internet", aiming to create self-help books with behavioral cognitive therapy approaches (CBT) that can reduce addiction internet in teenagers. The intervention uses self-help techniques that aim to direct individuals to be able to provide or run interventions independently with the help of books. The stages in the self-help group book are, problem recognition: to make the subject understand what the problem is in nature: Auto observation: i.e. inviting respondents to observe the behavior of their own smartphone and internet usage using the self-monitoring table; Time management: teaches how to manage time effectively and efficiently (time -management) related to behavior in using smartphones and the internet. The development of off-line activities encourages subjects to develop other activity activities outside of activities using the internet (25).

Interventions in the form of self-help mean that individuals can provide or carry out their intervention with the help of books, or modules. Individuals who find that they experience internet addiction can help themselves (self-help) with the help of parents to monitor. Self-monitoring is a means for research subjects to observe and record their behaviour (25).

Based on the results of identification during the intervention, some respondents said that if there was an internet disruption they felt the world was "empty", the internet was like blood vessel". So that categorized cognitive distortion is: catastrophizing.

Catastrophizing is individuals imagine an activity to be a concern and make them afraid. The mind of a teenager who is supposed to be logical is finally distorted. For example "I am a busy teenager, have to play the internet, and conclude" I am a great teenager ", or" I if I don't play the internet, this world is like a dead/dead (3), playing the internet can cause them to forget loneliness, so they don't need social interaction in the real world (4), playing smartphones and the internet can solve problems that are experienced, overcome frustration in education, vent a sense of social anger (5).

Based on the results of statistical tests in the Control group there was no significant effect of CCBT on internet addiction, this proved the data on the distribution of addiction levels both before intervention and after intervention of all respondents were in the fixed category, namely on the level of addiction problems, but on sub-variables: feeling has decreased. This is due to the intervention group being treated by the control group to carry out the usual routines in their school. All have smartphones, and there are many facilities prepared by supporting schools.

CONCLUSION

Cognitive commitment behavioral therapy can reduce the level of internet addiction in adolescents. Based on the findings, the nurse profession can use Cognitive commitment behavioral therapy to become one of the nursing interventions in overcoming internet addiction

LIMITATION AND LIMITATION

This study applied the combination between CBT and a modified method of education and counseling with SHG. However, some limitations were encountered from this study since this study used the simple random sampling and quasi-experimental study. Therefore we can not control all confounding variables so the data is not homogeneous.

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