



The Effectiveness of Internet Cognitive Behavior Therapy (iCBT) on Decreasing the Depression: A Systematic Review

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Abstract. Background. Lack of society in seeking treatment of depression still occurs in the community. This is influenced by the limitations of face-to-face psychological treatment, stigma, limited medical expenses, and limited therapists. **Aims.** This study aims to determine the effectiveness of Internet Cognitive Behavior Therapy (iCBT) on reducing depression. **Method.** This study was a systematic review of depressed patients with study selection criteria using Scopus, Science Direct, and Pubmed databases by Randomized Control Trial (RCT). **Results.** A total of 15 relevant articles were reviewed in this study. The findings showed that the iCBT has a positive effect on decreasing depression. It was due to iCBT therapy could control the mood of people. **Conclusion.** This systematic review is aimed to explore increasing the use of technology and information support in providing nursing care to clients to reduce depression.

Keywords: internet cognitive behavior therapy, depression, systematic review

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INTRODUCTION

Depression is one of the most common psychological, mental disorders in humans worldwide (1). Depression is a disease that is more common in adults (2). Depression can directly negatively impact interpersonal relationships, physical health, and daily functioning (3). Depression can also affect about 1/6 of the population over a lifetime, with a low quality of life, difficulty sleeping, and a very high risk of severe suicidal behavior. (4).

Many people have not been diagnosed with depression even though they are already showing signs and symptoms of depression. Depression often occurs in adulthood because of a decrease in physical ability and a reduction in financial ability. This leads to an increased risk of suicide (5). The ability to seek treatment availability in adults has decreased. Limitations of face-to-face psychological treatment, stigma, limited mobility, medical costs, and limited trained therapists are possible barriers for adults with depression to delay seeking treatment. (5). A treatment approach is needed to overcome the obstacles and increase access to treatment that can reduce symptoms of depression, so a more practical and effective intervention is required to deal with these problems.

Recently, depression treatment using internet-based Cognitive Behavior Therapy (CBT) or commonly called iCBT, is a therapy that can replace conventional or face-to-face CBT therapy. iCBT therapy is an intervention that can be performed on adults aged 20-60 years, guided by a therapist, and carried out independently via email or telephone (5). iCBT therapy is intended for an intervention goal expected to have the same effect as face-to-face CBT (5). iCBT therapy focuses more on people with depressive symptoms than on those diagnosed with depression (6).

Many iCBT interventions have been carried out to support the treatment of

patients with anxiety and depression (7). The most commonly used components of iCBT for depression are behavioral activation, cognitive restructuring, strategies for dealing with sleep disorders, and problem-solving training. (4). The results show that iCBT shows superior effectiveness (8). Other evidence suggests that iCBT results are comparable to those obtained with traditional CBT and face-to-face CBT, and it can save costs (9-10). Another advantage of iCBT therapy is that it reduces therapist time, does not make the distance a barrier to treatment, making it easier for clients to get treatment (4). In terms of accessibility, iCBT provides users the opportunity to receive treatment at any time and any place. (11).

Method

Design

The research design was a systematic review approach specifically formulated to examine a relevant quantitative study with a comprehensive analysis. It was developed based on PICO (Patient, Intervention, Comparison, and Outcome) framework (12). This systematic reporting structure using PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analysis)(13).

Inclusion and exclusion criteria

The systematic review uses the inclusion and exclusion criteria, focusing on quantitative and mixed-method studies, using partly quantitative analysis. The feasibility analysis to represent this study is to choose sources that use the English language for the abstract as a language requirement. The publication date is limited to the current ten years, starting from 2008 to 2018. The research inclusion criteria were 1) respondents aged 18-65 years, 2) having the ability to access the internet 3) having mild depression. Patients undergoing medication therapy would be excluded from this study.

Search strategy

The systematic search is based on PICO electronic data framework and is carried out with the PICO framework (12). The databases to search the relevant articles including Pubmed, Scopus, Elsevier, google scholar. The keywords used in this study were "Medicine," "internet cognitive therapy," "depression," "Psychology issue," and "stress."

The keywords then searched for citations and whole articles, including the titles, abstracts, texts, and references that contain the chosen terms. The second step is to translate the keywords to English to search for relevant articles in the electronic database. The third is to filter the result using the PICO framework to decide which articles need further review according to the topic. The complete search strategy is limited to the latest ten years period.

All journals are randomized control trials (RCTs) focusing on the effectiveness of iCBT in clients with depressive symptoms. quasi-experiment was made an exception because there was no randomization, which means grouping sample members in the experimental group and the control group did not do randomly or randomly

Appraisal Quality

The valuation of the articles' quality implements a quantitative study tool called CASP (Critical Appraisal Skills Program). Ten different questions are used to consider the quantitative study's result, validity, and usage (14).

CASP is an evaluating instrument used to measure the quality and utility of research [9]. Ten questions in CASP contain "yes", "no", and "not now" answer options for each question. Three reviewers scored every document independently (by initial of YD, TS, and EF). The score obtained by one reviewer will then be combined with the others into a single file. If there is a different opinion among the reviewers, it

must be finished in the next discussion session.

The score allocation is on a scale of 10 for each article. It is viewed based on how many "yes" can an article obtain. The articles with more than 7 "yes" are regarded as excellent articles. The objective of this quality review is not to differentiate one article's quality from another but to the high-quality study systematically and based on the standard processes of the available topic.

RESULT

Study selection

The results were obtained from the Scopus, Pubmed, and Science Direct databases. The search results were 292 journals. Scopus database got as many as 182 journals. The PubMed database obtained 18 journals, and the Science Direct database received 92 journals. All the journals were carried out according to the areas of Medicine, Nursing, and Psychology until there were 250 journals. Then retracing was carried out according to the iCBT and depression variables, which obtained 96 appropriate journals. Then 15 journals were retrieved according to the inclusion and exclusion criteria. All journals are randomized control trials (RCTs) focusing on the effectiveness of iCBT in clients with depressive symptoms.

Studies' characteristics

The characteristics of the study are described in table 1. All journals obtained from the results of the study had iCBT therapy performed on clients with depression. The articles from Australia were 8 journals, from the UK was 1 journal. Other articles from Japan (2 journals), Sweden (2 journals), and Netherlands only 1 journal. Articles published in the USA was 1 article and, published in Canada also only 1 journal. All studies have a minimum respondent age criteria of 18 years to 65 years and over. All 15 studies were clients with mild depressive symptoms.

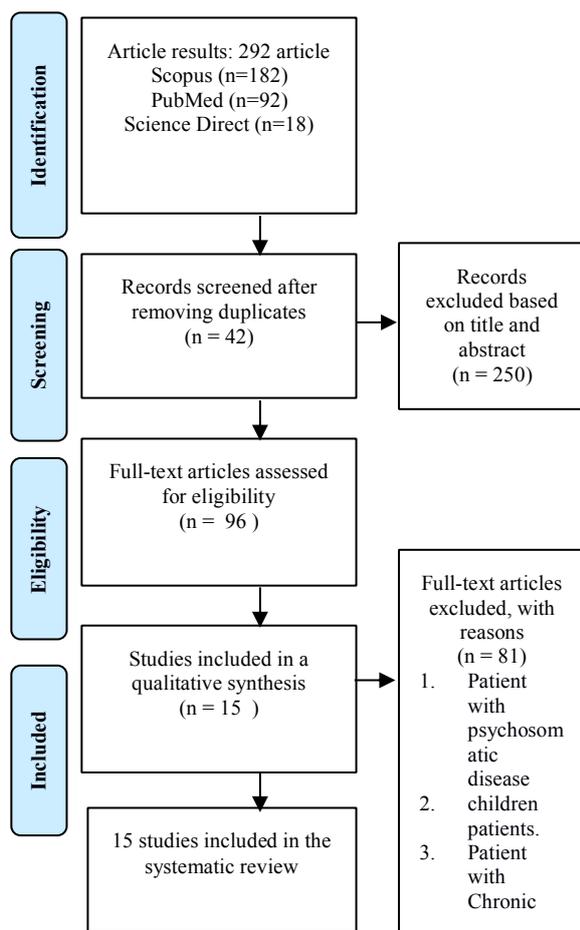


Figure 1. Flow Diagram

Results synthesis

The literature had identified 15 relevant articles related to *Internet Cognitive Behaviour Therapy (iCBT)*. The synthesis of the results including 1) effectiveness of *Internet Cognitive Behaviour Therapy (iCBT)* on depression; 2) factors associated with recurrence of patients' stress.; and 3) Alternative models to improve equitable access and outcomes.

Internet Cognitive Behaviour Therapy (iCBT)

Many iCBT interventions have been carried out to support the treatment of patients with anxiety and depression (7). The most commonly used components of iCBT for depression are behavioral

activation, cognitive restructuring, strategies for dealing with sleep disorders, and problem-solving training. (4). The results show that iCBT shows superior effectiveness (8). Other evidence suggests that iCBT results are comparable to those obtained with traditional CBT and face-to-face CBT (9)

Depression

Depression is one of the most common psychological, mental disorders in humans worldwide (1). Depression is a disease that is more common in adults (2). Depression can directly negatively impact interpersonal relationships, physical health, and daily functioning (3). Depression can also affect about 1/6 of the population over a lifetime, with a low quality of life, difficulty sleeping, and a very high risk of severe suicidal behavior. (4).

Effectiveness of internet Cognitive Behaviour Therapy (iCBT) For depression

Stress caused by stressors will affect the Central Nervous System (CNS) and endocrine hormone changes such as activation of the hypothalamus and the release of cortisol and adrenaline. Bad health practices will cause the body to be exposed to toxins and cause a decrease in the body's defenses in individuals. Poor security due to attacks from toxins and the influence of stressors will cause a person to experience health problems.

The main benefit of iCBT therapy is to change negative thoughts and explore the abilities and positive things of the individual. (Forsell et al., 2017). iCBT therapy for individuals is given in the hope of changing moods and eliminating negative thoughts from individuals. After the individual can improve his cognitive, the production of catecholamines and cortisol will decrease, so the emphasis on the amygdala as the center of emotion regulation will decrease. Loss of emphasis on the amygdala will eliminate feelings of

sadness, mood disorders in individuals who experience depression. This theory is in accordance with research conducted by Titov et al. (2012) that as many as 32 of 37 respondents showed a decrease in symptoms of depression and anxiety and could eliminate feelings of fear.

DISCUSSIONS

Almost have a smartphone and can access the internet, so therapy can be easily implemented and widely used by the community (16). Another convenience is that the internet is easy to access anywhere and anytime. It is private and confidential, empowers self to assess oneself, saves costs, and makes it easier for hospital health workers to focus more on more severe clients (17).

The iCBT treatment model is a more cost-effective therapy for the spread of intervention (5). Other studies also convey that the iCBT Therapy approach is a cost-effective approach to reduce depression among workers (11).

The results showed that the time spent by the therapist and client in doing iCBT was less than 90 minutes (8). This time is much less than the time required for face-to-face treatment. The reduced time spent doing iCBT therapy did not reduce the satisfaction felt by clients, especially in the treatment group clients who received iCBT therapy. (8). Studies show that clients who choose internet-based iCBT therapy treatment because some of them have the pressures of busy lives (3). The distance between the client influences the possibility of the client not seeking treatment, and the health facility can be prevented by iCBT therapy. iCBT therapy can be tailored for antenatal depression and is more effective in reducing depressive symptoms and thus preventing treatment (18).

iCBT therapy can be used to reduce depression in patients with PTSD. iCBT therapy has no adverse effects in patients with PTSD. iCBT therapy with the guidance of a therapist can reduce PTSD

symptoms. The concern with conventional CBT is that trauma-focused CBT can exacerbate PTSD symptoms (19). Thus, Internet-based CBT is the therapy of choice for PTSD clients. The explanation above can be concluded that iCBT therapy can significantly reduce depressive symptoms.

CONCLUSION

This systematic review is aimed to explore increasing the use of technology and information support in providing nursing care to clients to reduce depression. The form of therapy is oriented to cognitive therapy, emotional feelings, and behavior through face-to-face, which is carried out using internet facilities. The advantage of iCBT was to provide therapy face-to-face directly from anywhere and anytime based on an agreement between therapist and client. The drawback is other factors that cannot be controlled, such as network and electrical conditions and the feasibility of the equipment used.

IMPLICATION

iCBT can be used and implemented in Indonesia because most people have mastered and understood information technology. Further development is directed at harmonizing communication and atmosphere accompaniment that can be carried out using emotional music as a background. Further development is the provision of android-based applications so that it is also expected to provide an increase in self-management of clients with depression (20).

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Tabel 1. Matrix table

Authors	Country	Design	Samp les	Age	Case	Control	Result
Titov, N, at all	Australia	RCT	52	>60	iCBT therapy and contact with therapy (n=27)	iCBT therapy and without contact with therapy (n=25)	iCBT effectively reduces therapist costs for the treatment of depressive symptoms in adults or older
Titov, N, at all	Australia	RCT	77	>18	iCBT n=39	Without Therapy n=38	iCBT therapy can provide treatment support for clients with anxiety and depression.
Zafran, Roz, at all	UK	RCT	120	17-58	iCBT (n=62)	Without therapy (n=58)	This study indicates that the iCBT intervention is effective in the UK setting
Imamura, K, at all	Jepang	RCT	592	38	iCBT (n=272)	Without therapy (n=320).	iCBT therapy can reduce depressive symptoms in workers
Watts, Sarah, at all	Australia	RCT	53	18-63	Mobile Phone iCBT	Computer iCBT	Mobile-based iCBT therapy significantly reduces depressive symptoms
Murphy, at all	Australia	RCT	90	All age groups suffering from depressio n due to cancer	Medicine with iCBT (n=45)	medicated (n=45)	iCBT therapy can reduce depression and anxiety
Cezar Giosan, at all	Romania	RCT	220	Minimal 18	Intervention: a. Aktiv interven tion: 66 b. Placebo interven tion: 69	without intervention: 85	Internet application-based CBT therapy can reduce depression
Erik Forsell, at all	Swedia	RCT	42	18 Tahun	Terapi iCBT n=22	Normal therapy n=20	iCBT therapy can reduce depression in pregnant women

Authors	Country	Design	Samp les	Age	Case	Control	Result
Jay Spence, at all	Australia	RCT	144	41	iCBT n=59	Without iCBT n=66	The findings suggest that iCBT. therapy safe and efficacious for PTSD clients
Shannon L. Jones, at all	Canada	RCT	44	>60	iCBT n=24	Wishlist Control n= 22	iCBT therapy shows a focus on awareness of the dangers for PTSD clients without an exposure component so that it is safe and efficacious
Isabelle. Rosso, at all	USA	RCT	77	18-45	iCBT n=37	Attention control n= 40	iCBT therapy can significantly reduce depressive symptoms compared to the attention control group.
Isabella Choi, at all	Australia	RCT	63	39	iCBT n=32	Wishlist Control n= 31	iCBT therapy led to a significant reduction in symptoms of depression and distress. iCBT therapy is a promising strategy for increasing access to effective treatments.
Alishia D. Williams, at all	Australia	RCT	75	42	CMB and iCBT n=61	Wishlist Control n= 60	The results provide preliminary support for the success and acceptability of the iCBT program in reducing depressive symptoms in Chinese Australians.
Jessica Smith, at all	Australia	RCT	270	>18	iCBT (n = 61)	Waitlist control n = 68	iCBT Intervention

Authors	Country	Design	Samp les	Age	Case	Control	Result
					Book self-help CBT (bCBT) (n = 77)		can help treat depression
					Book self-help meditasi (bMED) (n = 64).		
Dominique e Hange	Swedia	RCT	77	>18	iCBT n=46	TAU n=31	iCBT therapy affects improving the quality of life of depressed patients