Medical Science

pISSN 2321–7359; eISSN 2321–7367

A meta-analysis of the effectiveness of internet-based cognitive-behavioral therapy on social phobia

Nazanin Ahangari[1], **Maryam Bakhtiari**[2*], **Amir Mahdi Katani**[3]

To Cite:
Ahangari N, Bakhtiari M, Katani AM. A meta-analysis of the effectiveness of internet-based cognitive-behavioral therapy on social phobia. Medical Science 2022; 26:ms414e2314.
doi: https://doi.org/10.54905/disssi/v26i128/ms414e2314

Authors' Affiliation:
[1]Ph.D. student of clinical psychology, Department of clinical psychology, School of Medicine, Shahid Beheshti University of Medical Sciences, Tehran, Iran; Email: Nazaninahangari@gmail.com, ORCID: https://orcid.org/0000-0003-2164-1555
[2]Professor of Clinical Psychology, Department of Clinical Psychology, School of Medicine, Shahid Beheshti University of Medical Sciences, Tehran, Iran; Email: Maryam_bakhtiyari@sbmu.ac.ir, ORCID: https://orcid.org/0000-0002-5106-9775
[3]Ph.D. student of clinical psychology, Department of clinical psychology, School of Medicine, ShahidBeheshti University of Medical Sciences, Tehran, Iran; E-mail: Amir.katani.1993@gmail.com, ORCID: https://orcid.org/0000-0002-9534-7140

*Corresponding author
Professor of Clinical Psychology, Department of Clinical Psychology, School of Medicine,
Shahid Beheshti University of Medical Sciences, Tehran, Iran
Email: maryam_bakhtiyari@sbmu.ac.ir, ORCID: https://orcid.org/0000-0002-5106-9775

Peer-Review History
Received: 26 May 2022
Reviewed & Revised: 29/May/2022 to 05/October/2022
Accepted: 15 October 2022
Published: 17 October 2022

Peer-review Method
External peer-review was done through double-blind method.

URL: https://www.discoveryjournals.org/medicalscience

ABSTRACT

This meta-analysis was aimed at evaluating the evidence related to the effectiveness of Internet-Based Cognitive-Behavioral Therapy (ICBT) in patients with social phobia. A systematic review of Randomized Controlled Trials (RCTs) with regard to the effectiveness of ICBT for patients with social phobia was sought across multiple databases. The outcome variable in clinical trials was decline in symptoms of social phobia. The measures used included LSAS, SPS, SP-12, BAI and SAD. Twenty clinical trials met the inclusion criteria (1211 patients overall). The results of the analysis revealed that the ICBT is more effective compared to other treatments or control conditions based on patients' evaluation. The results of the present meta-analysis provide preliminary evidence of the effectiveness of ICBT as a clinical method for social phobia and suggest that more RCTs are needed to compare ICBT with common treatments such as medication, neurological methods, and behavioral interventions.

Keywords: Internet-Based Cognitive-Behavioral Therapy, Social Phobia, Meta-Analysis

1. INTRODUCTION

Social anxiety disorder has been defined as the phobia of social situations. The main characteristic of this disorder is an intense, persistent fear of attendance in public assemblies (Jin & Youn 2021; Zsido et al., 2021). Despite the fact that patients with social phobia are well aware of the irrationality of their fears, they cannot quit their irrational behaviors. According to the fifth edition of diagnostic, statistical guide to mental disorders, patients with social phobia are scared of or anxious about social interactions and situations in which there is the possibility that they will be evaluated. These situations consist of social interactions such as meetings with strangers and circumstances in which the patients may be watched while eating, drinking, and doing other activities in front of other people (Roehr, 2013). Patients with social phobia often suffer from other comorbid disorders including general anxiety disorder,

depression, bipolar disorder, etc. (Krömer et al., 2021; Tibi et al., 2021; Villanueva et al., 2021). Besides, some patients involve in drug abuse as a self-medication strategy for this disorder or a way to resolve inhibition and this in turn, leads to drug addiction especially alcohol (Carlbring et al., 2007). Untreated courses of this disorder usually result in a chronic disorder and eventually lead to social isolation of the patients (Connor et al., 2000; Lipsitz et al., 1999). More than 90 percent of patients with social phobia experience psychological disabilities such as academic failure, decreased productivity, decline in social status as well as career problems. Moreover, one third of these people report severe disabilities (Pak et al., 2021; Salam & Sharma 2021).

Cognitive Behavioral Therapy (CBT) has been emphasized as the first treatment for patients with social anxiety disorder (Davidson et al., 2004; Ivanova et al., 2016). CBT has been evaluated in many studies and is based on techniques which target symptoms of social anxiety disorder. Over the last few years, the use of CBT has been changed given the expansion of cyberspace and World Wide Web. The new form of CBT has been developed as ICBT. It was evolved in response to the need for unlimited access to mental health professionals. At one hand, half of the world population lives in regions in which there is less than one psychiatrist per 100000 people (Andersson et al., 2006; Andersson et al., 2012; Andersson & Titov, 2014). On the other hand, due to high treatment costs and impossibility of in-person referral for patients, face-to-face cognitive behavioral interventions have been faced with a number of barriers. ICBT can be an appropriate alternative treatment (Andrews et al., 2011; Carlbring et al., 2007; Furmark et al., 2009; Johnston et al., 2011; Tillfors et al., 2011; Titov et al., 2008; Ghiasi et al., 2022). It was proposed about twenty years ago (Andersson et al., 2019; Ivanova et al., 2016; Mathiasen et al., 2016). This treatment has major benefits compared to traditional treatment. Being cost-effective is the most important benefit of this treatment.

Moreover, it provides patients with the possibility of receiving accurate, documented treatments to increase their understanding of this disorder. Furthermore, therapists can check out patients' conditions online and arrange remote treatment for them. In other words, patients who receive ICBT have easy access to the therapist and interact online instead of weekly in-person referral (Berger et al., 2009; Schulz et al., 2016; Tulbure et al., 2015). Last but not the least, ICBT is a suitable choice for patients with social anxiety who are not after face-to-face, in-person therapies since these patients are scared of being present in public assemblies and face-to-face situations (Berger et al., 2011; Gallego et al., 2010; Hedman et al., 2011).

A review of the related literature indicates that various meta-analyses have been conducted in an effort to determine the effectiveness of ICBT in treating psychological disorders. The results of some studies suggest that there are no significant differences between CBT and ICBT (Gingnell et al., 2016; Titov et al., 2010). However, the results of RCTs with regard to the effectiveness of ICBT in social phobia treatment have indicated a significant level of efficiency (Hedman et al., 2011; Johnston et al., 2011). Nevertheless, meta-analysis studies into this area have not been carried out to determine the extent of the effectiveness and weight of each RCT. Besides, the results of some studies are not in line with those obtained in other RCTs and different results have been reported. Thus, there are conflicting views on the effectiveness of ICBT in social anxiety treatment (Kuckertz et al., 2014; Păsărelu et al., 2017). For instance, a study examined the effectiveness of ICBT in treating social anxiety.

The results of this study revealed that the rate of the disease decline during the treatment process is higher than the traditional CBT and this in turn, decreases the effectiveness of the therapy during the whole test as well as the effect size of ICBT (Deng et al., 2019). Given the limitations and existing inconsistencies in the related literature, the present study is aimed at indicating the effectiveness of the newly developed ICBT through examining and evaluating RCTs with regard to the effects of ICBT on social anxiety via a meta-analysis.

2. METHOD

A meta-analysis was utilized in the current study. A meta-analysis is a set of systematic techniques that deal with resolving obvious contradictions of research findings. Besides, it transforms the findings of different studies into a common scale and statistically explores the research findings. Hence, concerning the present study, the findings of 20 studies were evaluated via the meta-analysis method. The phases of a meta-analysis are as follow: 1) defining desired variables, 2) searching required databases, 3) collecting research reports, 4) calculating the effect size for each study, and 5) combining the effect sizes of all studies.

Inclusion and Exclusion Criteria

The studies that met the following criteria were included in the analysis:

- Published articles from 2009 to 2021
- RCTs of the effectiveness of ICBT on social anxiety
- Trials targeted at social anxiety

Data Extraction

The statistical population of the present study included all the published articles in valid journals that methodologically met the required inclusion criteria for the meta-analysis. The information related to the included studies has been presented in Table 1 and figure 1.

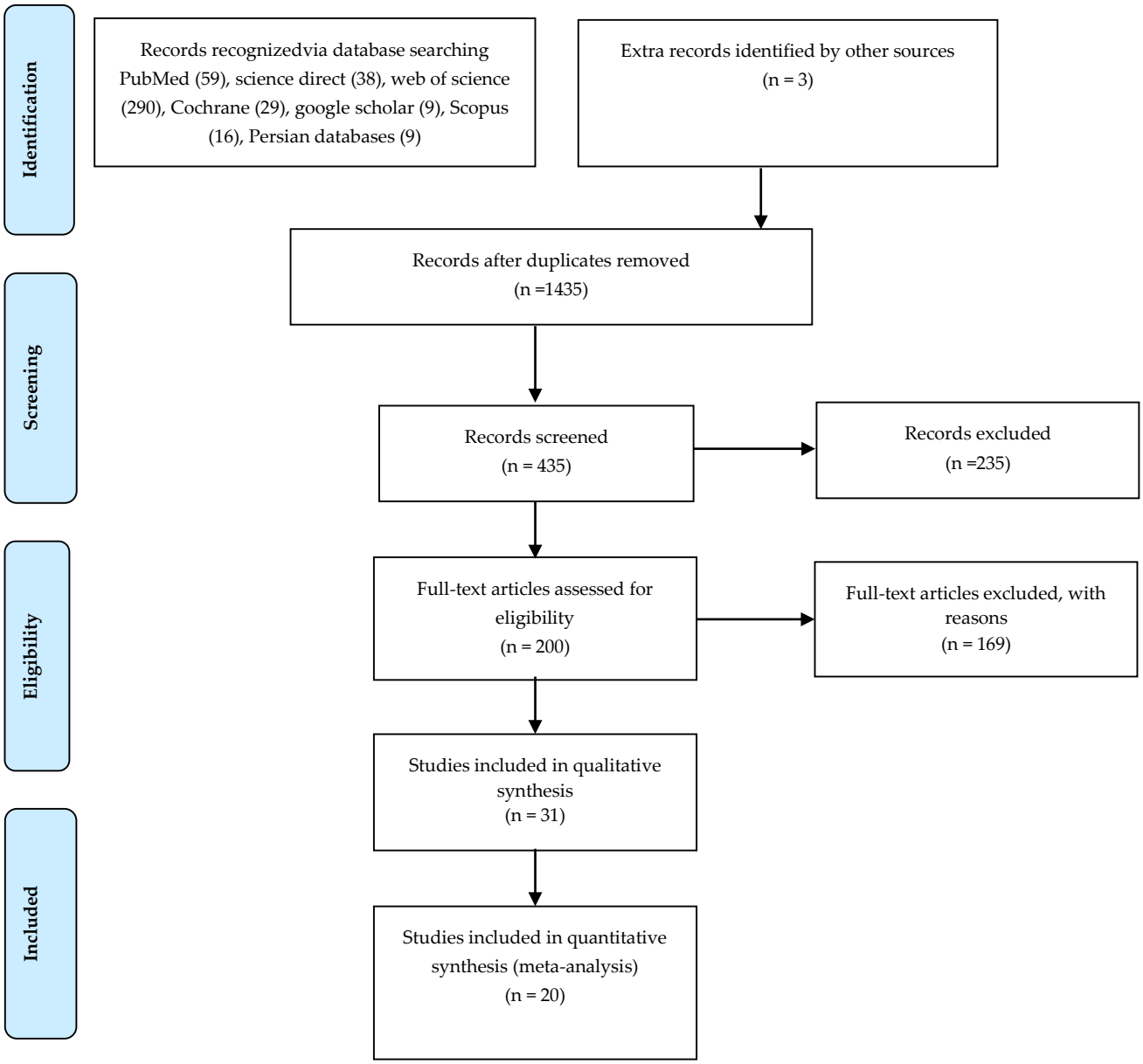

Figure 1 Flow Diagram for the Study Selection Process in Different Phases of a Systematic Review

Statistical Analysis

The data of the current study was analyzed through Review Manager (Version 5) and Stata 12.0. The mean differences between groups with 95 % confidence level were explored in order to evaluate score variances in ICBT.

3. RESULTS

Table 1 Specification of Included Studies in the Meta-Analysis

Outcome measurement tool	Sex	Intervention sessions	Effect Size	Average Age	Number	Groups	Therapy	1st Author	Code
LSAS	both	12 sessions	0.01 [−0.64; 0.66]	38	102, 102	Experimental/ control	ICBT	Andersson 2012	1
LSAS	female	16 sessions	6.23 [4.80; 7.66]	38	32, 32	Experimental/ control	ICBT	Andersson 2006	2
LSAS	both	12 sessions	3.31 [1.23; 5.40]	36	40, 40, 40	GroupIBT、Bibliotherapy group Control	ICBT, bibliotherapy	Williams 2014	3
SIAS	both	12 sessions	1.02 [0.28; 1.75]	42	43, 46, 42	GroupICBT、GroupICBT、Control	ICBT	Johnston 2011	4
LSAS	both		2.18 [1.60; 2.77]	33	29, 28	Experimental/ control	ICBT	Carlbring 2007	5
LSAS	both	8 sessions	6.87 [5.32;8 .29]	17	10, 9	Experimental/ control	ICBT	Tillfors 2011	6
SPS	Un-known	13 sessions	1.78 [1.22; 2.07]	39	50, 49	Experimental/ control	ICBT	Titov 2008	7
SP-12	both	8 sessions	3.46 [2.29; 3.17]	44	19, 17	Experimental/ control	ICBT	Titov 2011	8
BAI	both		1.39 [1.09; 1.97]	31	24, 23	Experimental/ control	ICBT	Mathiasen 2016	9
LSAS	both	14 sessions	4.16 [2.10; 3.84]	35	37，37， 39	GroupICBT、GroupICBT、control	ICBT	Ivanova 2016	10
LSAS	male	16 sessions	3.71 [2.41; 3.29]	29	38, 38	Experimental/ control	ICBT	Tulbure 2015	11
SIAS	both	9 sessions	3.46 [2.29; 3.17]	35	60, 60, 29	GroupICBT、GroupICBT、control	ICBT	Schulz 2016	12
LSAS	both	14 sessions	2.91 [2.07; 3.33]	29	31, 21	Experimental/ control	ICBT	Newton 2014	13
LSAS	female	12 sessions	2.18 [2.46; 2.93]	37	27, 27, 27	GroupICBT、GroupICBT、control	ICBT	Berger 2011	14
SAD	Un-known	13 sessions	3.46 [2.29; 3.17]	25	30, 22, 25	GroupICBT、GroupICBT、control	ICBT	Botella 2010	15
LSAS	both	12 sessions	3.22 [2.98; 2.08]	36	64, 62	Experimental/ control	ICBT	Hedman 2011	16
SPS	female	14 sessions	1.77 [2.1;	35	21，14	Experimental/ control	ICBT	Andrews 2011	17

			4.22]						
LSAS	both	14 sessions	2.71 [1.88; 2.99]	34	67, 66	Experimental/ control	ICBT	Boettcher 2014	18
LSAS	both	12 sessions	1.55 [1.14; 2.89]	34	24, 24	Experimental/ control	ICBT	Gingnell 2016	19
SIAS	both	16 sessions	2.93 [1.83; 3.43]	44	55, 53	Experimental/ control	ICBT	Titov 2010	20

Note: ICBT- Internet-based Cognitive Behavioral Therapy, LSAS - Liebowitz Social Anxiety Scale, SIAS - Social Interaction Anxiety Scale, SPS - Social Phobia Scale, SP-12 – Social Phobia-12, BAI - Beck Anxiety Inventory, SAD - Social Avoidance and Distress

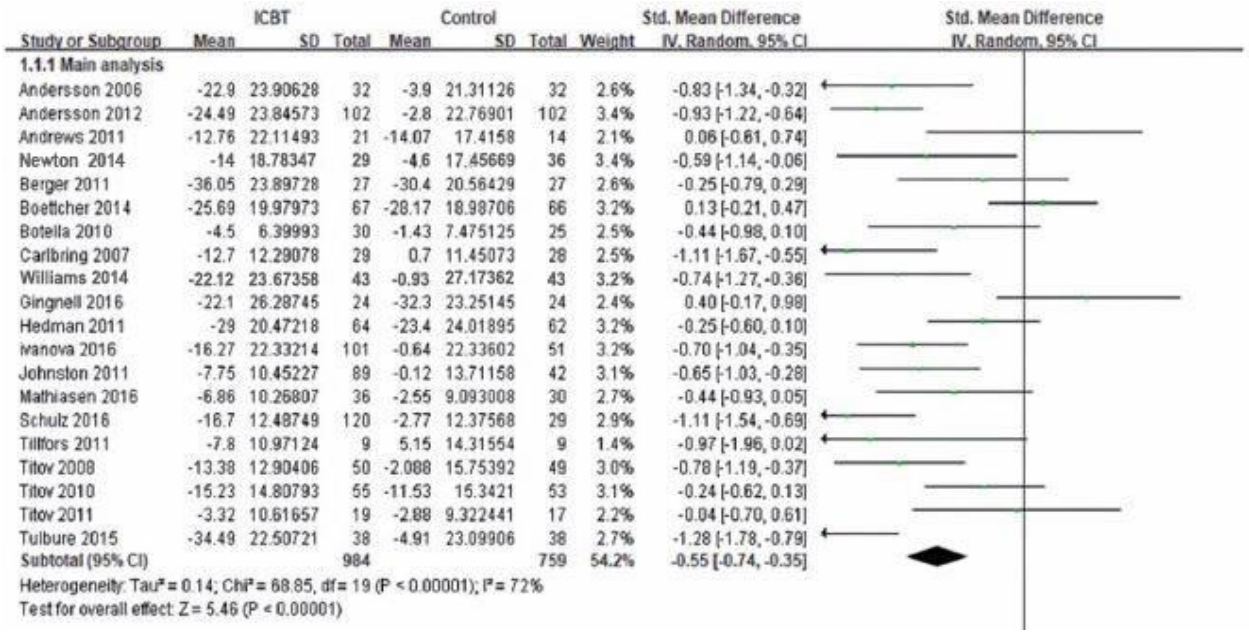

Figure 2 Forest Plot Diagram based on Effectiveness of ICBT

As Fig 1 presents, out of a total of 20 articles delivered via analysis, some articles have a lower weight as well as negative point estimate. In addition, I-squared equals 0.14, suggesting the high homogeneity of the trials. In Fig 2, as the forest plot reveals the overall effect equals z=5.46 (p<0.0001).

Meta-Regression

Univariate meta-regression was employed to recognize the sources of heterogeneity. Treatment duration, mean age, year of publication as well as sex were separately put into the model and the parameters were calculated via restricted maximum likelihood method. The results of meta-regression manifested that the most significant cause of heterogeneity was year of publication (Figure 3). Besides, a positive association existed between year of publication and effect of ICBT.

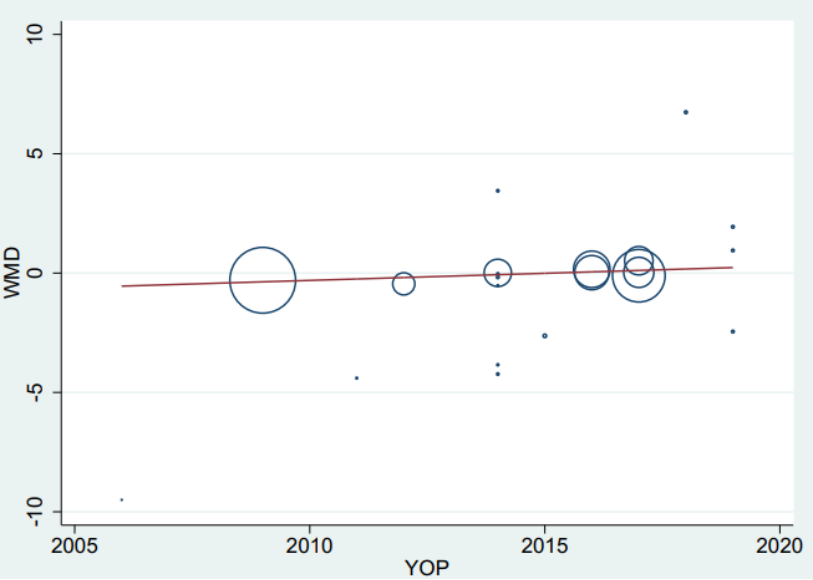

Figure 3 Meta-Regression Results between Effect of NFB and Year of Publication in Studies

Assessing Publication Bias

As it is graphically evident, the funnel plot presents symmetrical pattern and shows no publication bias. Moreover, both Egger's test (P-value=0.98) and Begg's test (P-value=0.23) reveal no publication bias.

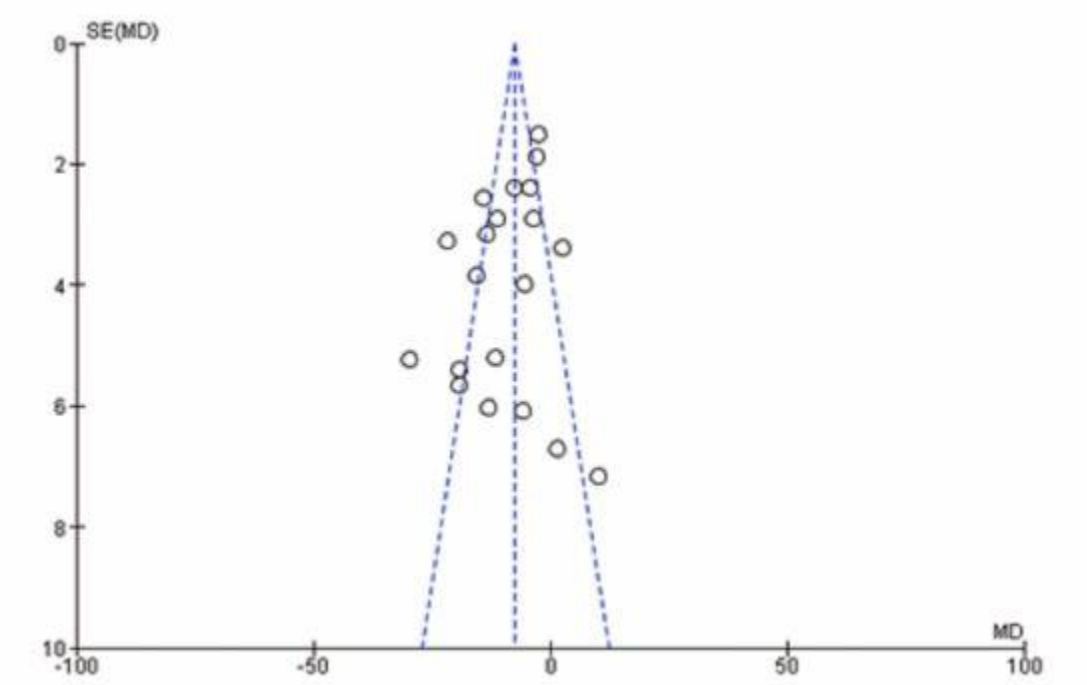

Figure 4 Funnel Plot to Access for Publication by Relating Effect Sizes of Studies to Standard Errors

4. DISCUSSION

The current study aimed to investigate the effectiveness of ICBT on social anxiety. Upon closer, thorough inspection of the previous studies, it was found that the present study was the only exclusive, internal one into the effectiveness of ICBT on social anxiety. In fact, this meta-analysis explored all RCTs of ICBT for social anxiety. The results of the meta-analysis highlighted the effectiveness of ICBT in social anxiety treatment (g= - 0.55). Moreover, publication bias revealed the effectiveness of ICBT in the final analysis. Furthermore, the obtained findings are in line with the previous ones as well as RCTs (Arora et al., 2019; Chermack et al., 2019; Connor et al., 2000; Gallego et al., 2010).

Concerning the evaluation of the examined studies, it is worth noting that the included RCTs in the analysis enjoyed an acceptable effect size and hence, the weight of the studies fell within the appropriate range of the foreign studies (Andersson et al., 2019; Gingnell et al., 2016). On the other hand, the exclusion of the studies that had scrutinized comorbid disorders resulted in higher accuracy and homogeneity of the studies. The homogeneity of the type of disorder in a meta-analysis is of high significance due to the fact that it minimizes the impact of other effective factors. To put another way, it ensures uniformity across studies and exclusion of intervening factors (Boettcher et al., 2014). It is worth highlighting that the effect size decreased in some studies in which ICBT had been simultaneous with other interventions. The decrease in the effect size in these studies was mainly due to the simultaneous intervention of ICBT and this in turn, involved the combination of the concurrent effect of the two interventions (Furmark et al., 2009; Păsărelu et al., 2017).

Besides, the cases examined in the studies were people with social anxiety who were not using drugs and had no report of stimulant drug use or addiction. This led to high accuracy of results and precise weight of the studies. In fact, a study revealed that the concurrent use of drugs and ICBT affect the results of ICBT in the long term and the simultaneous combination of these two therapies makes the therapeutic results indistinguishable (Gingnell et al., 2016). Overall, inspection of general features of the included studies confirms high homogeneity of the effective characteristics of the articles and side effects of influential intervening variables has been reduced as much as possible. Thus, the statistical power and the impact power of the studies and the general evaluation of their results are reliable.

Some of the previous studies revealed that CBT and ICBT have a similar impact on all psychological problems (Andrews et al., 2011). Concerning this issue, researchers believe that there are no specific differences in the therapeutic content of both treatments. Rather, the observed differences in therapeutic results of some studies stem from the way in which the treatment is implemented as well as differences in their protocols (Boettcher et al., 2014). Some other researchers also maintain that the presence of a therapist might be a threatening factor for a client in face-to-face therapy. Likewise, the ICBT may be more effective for clients due to the lack of face-to-face communication and direct contact with therapists (Chermack et al., 2019; Lowndes et al., 2019; Southam-Gerow et al., 2021; Tirpak et al., 2019). In addition, some studies point to the importance of therapists' experience in CBT and suggest that experienced therapists can deal with ICBT more effectively compared to inexperienced ones (Martínez-Vispo et al., 2019; McLeod et al., 2019). However, some other studies have indicated that therapists' experience is not a determining factor in the effectiveness of ICBT. Contrarily, the effective, integrated protocol of ICBT is a significant factor in reporting highly accurate results. It is worth highlighting that ICBT provides facilities in which face-to-face communication is minimized and offers a more suitable choice for patients with social anxiety in comparison with CBT.

Overall, one of the problems confronted by CBTis patients' withdrawal from the rest of the therapy process due to different reasons such as economic costs of the therapy, lack of remote referral, and the fear of therapist's evaluation and this is very common in patients with social anxiety. Around 35 percent of patients with social anxiety drop out of the therapeutic process due to the fear of therapist's negative evaluation. Besides, some others experience severe physical symptoms during face-to-face sessions. All of these reasons could be reported as benefits of ICBT and the weight added to it compared to CBT (Arora et al., 2019; Polak et al., 2021). This is highly evident especially in patients with severer anxiety who easily drop out of the therapy. Therefore, any intervention that is capable of minimizing patients' face-to-face communication is preferred. In addition, common CBT protocols rely on behavioral methods that aim to decrease patients' fear.

However, this therapeutic atmosphere, in turn, may not reduce patients' anxiety and even disgust them. Similarly, the ultimate goal of ICBT is focusing on cognitive techniques to reduce patients' anxiety. Nevertheless, ICBT does not encompass the anxious atmosphere of the therapy room. Moreover, it allows patients to regulate their emotion in a more relaxed atmosphere and manage their stress to continue with the therapeutic experience. This freedom of choice seems to be the founding principle of the difference between therapeutic results of CBT and ICBT.

Some limitations were identified in the present study including restricted access to full-text articles, taking long time to receive answers to requests of full-text articles, incomplete information of some studies, writing errors in reports of demographic variables, and lack of interactive effect sizesas well as main multivariate effect sizes in some studies. It is worth suggesting that future investigations of ICBT need to take into account factors like treatment duration and the effect of short-term therapies. Besides, further research needs to be conducted on evaluating common ICBT protocols in relation to social anxiety by making professional comparisons in order to introduce the most appropriate protocol based on ICBT. Last but not least, it is suggested that other researchers carry out studies on social anxiety in children and teenagers since it is highly prevalence among them. Thus, future research also requires proposing ICBT protocols for these age groups as well as corresponding meta-analyses.

5. CONCLUSION

Overall, the obtained results from the present meta-analysis lend support to the effectiveness of ICBT in social anxiety. Given the effectiveness of this newly-developed therapy in minimizing social anxiety symptoms as well as its accessibility and low cost, all clients with social anxiety are recommended to ICBT. The content of ICBT protocol, in line with CBT, brings about underlying cognitive changes in patients with social anxiety. Since these changes are made through cyberspace, they are less frightening for patients with social anxiety and thus, increase their willingness to continue therapeutic sessions. All in all, given the expansion of the Internet around the world and the reported effectiveness of ICBT in various studies, it can be considered as an optimal, cost-effective therapeutic choice.

Compliance with Ethical Standards

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Informed consent was obtained from all individual participants included in the study.

Author Contributions

Nazanin Ahangari: Acquisition of data- Analysis and interpretation of data- Drafting of the manuscript- Critical revision of the manuscript for important intellectual content- Statistical analysis-
Maryam Bakhtiari: Study concept and design -Administrative, technical, and material support-Study supervision.
Amir Mahdi Katani: Acquisition of data- Analysis and interpretation of data- Drafting of the manuscript- Critical revision of the manuscript for important intellectual content- Statistical analysis.

Funding

This study has not received any external funding.

Conflicts of interest

The authors declare that there are no conflicts of interests.

Data and materials availability

All data associated with this study are present in the paper.

REFERENCES AND NOTES

1. Andersson G, Carlbring P, Holmstrom A, Sparthan E, Furmark T, Nilsson-Ihrfelt E, Buhrman M, Ekselius L. Internet-based self-help with therapist feedback and in vivo group exposure for social phobia: a randomized controlled trial. J Consult Clin Psychol 2006; 74(4): 678-686. doi: 10.1037 /0022-006X.74.4.667
2. Andersson G, Paxling B, Wiwe M, Vernmark K, Felix CB, Lundborg L, Furmark T, Cuijpers P, Carlbring P. Therapeutic alliance in guided internet-delivered cognitive behavioural treatment of depression, generalized anxiety disorder and social anxiety disorder. Behav Res Ther 2012; 50(9): 544-550. doi: 10.1016/j.brat.2012.05.003
3. Andersson G, Titov N, Dear BF, Rozental A, Carlbring P. Internet-delivered psychological treatments: from innovation to implementation. World Psychiat 2019; 18(1): 20-28. doi: 10.1002/wps.20610
4. Andersson G, Titov N. Advantages and limitations of Internet-based interventions for common mental disorders. World Psychiat 2014; 13(1): 4-11. doi: 10.1002/wps.20083
5. Andrews G, Davies M, Titov N. Effectiveness randomized controlled trial of face to face versus Internet cognitive behaviour therapy for social phobia. Aust Nz J Psychiat 2011; 45(4): 337-340. doi: 10.3109/00048674.2010.538840
6. Arora PG, Baker CN, Marchette LK, Stark KD. Components analyses of a school-based cognitive behavioral treatment for youth depression. J Clin Child Adol Psychol 2019; 48(sup1): S180-S193. doi: 10.1080/15374416.2017.1280800
7. Berger T, Caspar F, Richardson R, Kneubühler B, Sutter D, Andersson G. Internet-based treatment of social phobia: a randomized controlled trial comparing unguided with two types of guided self-help. Behav Res Ther 2011; 49(3): 158-169. doi: 10.1016/j.brat.2010.12.007
8. Berger T, Hohl E, Caspar F. Internet-based treatment for social phobia: a randomized controlled trial. J Clin Psychol 2009; 65(10): 1021-1035. doi: 10.1002/jclp.20603
9. Boettcher J, Hasselrot J, Sund E, Andersson G, Carlbring P. Combining attention training with internet-based cognitive-behavioural self-help for social anxiety: a randomised

controlled trial. Cogn Behav Ther 2014; 43(1): 34-48. doi: 10.1080/16506073.2013.809141

10. Carlbring P, Gunnarsdóttir M, Hedensjö L, Andersson G, Ekselius L, Furmark T. Treatment of social phobia: randomised trial of internet-delivered cognitive-behavioural therapy with telephone support. Brit J Psychiat 2007; 190(2): 123-128. doi: 10.1192/bjp.bp.105.020107
11. Chermack ST, Bonar EE, Goldstick JE, Winters J, Blow FC, Friday S, Ilgen MA, Rauch SA, Perron BE, Ngo QM. A randomized controlled trial for aggression and substance use involvement among Veterans: Impact of combining Motivational Interviewing, Cognitive Behavioral Treatment and telephone-based Continuing Care. J Subst Abuse Treat 2019; 98: 78-88. doi: 10.1016/j.jsat.2019.01.001
12. Connor KM, Davidson JR, Churchill LE, Sherwood A, Weisler RH, Foa E. Psychometric properties of the Social Phobia Inventory (SPIN): New self-rating scale. Brit J Psychiat 2000; 176(4): 379-386. doi: 10.1192/bjp.176.4.379
13. Davidson JR, Foa EB, Huppert JD, Keefe FJ, Franklin ME, Compton JS, Zhao N, Connor KM, Lynch TR, Gadde KM. Fluoxetine, comprehensive cognitive behavioral therapy, and placeboin generalized social phobia. Arch Gen Psychiatry 2004; 61(10): 1005-1013. doi: 10.1001/archpsyc.61.10.1005
14. Deng J, Guo J, Xue N, Zafeiriou S. Arcface: Additive angular margin loss for deep face recognition. Paper presented at the Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition. 2019
15. Furmark T, Carlbring P, Hedman E, Sonnenstein A, Clevberger P, Bohman B, Eriksson A, Hållén A, Frykman M, Holmström A. Guided and unguided self-help for social anxiety disorder: randomised controlled trial. Brit J Psychiat 2009; 195(5): 440-447. doi: 10.1192/bjp.bp.108.060996
16. Gallego M, Botella C, Garcia-Palacios A, Quero S, Baños R. Self-statements during Public Speaking Scale (SSPS): psychometric properties in a Spanish sample of social phobia. Behav Psychol 2010; 18: 343-363.
17. Ghiasi H, Askarirostami F, Bakhtiari M, Hasanvandi S. Meta-analysis of the effectiveness of online cognitive-behavioral therapy in the treatment of post-traumatic stress disorder. Medical Science, 2022, 26, ms119e2012. doi: 10.54905/disssi/v26i122/ms119e2012
18. Gingnell M, Frick A, Engman J, Alaie I, Björkstrand J, Faria V, Carlbring P, Andersson G, Reis M, Larsson E-M. Combining escitalopram and cognitive–behavioural therapy for social anxiety disorder: randomised controlled fMRI trial. Brit J Psychiat 2016; 209(3): 229-235. doi: 10.1192/bjp.bp.115.175794
19. Hedman E, Furmark T, CarlbringP, Ljótsson B, Rück C, Lindefors N, Andersson G. A 5-year follow-up of internet-based cognitive behavior therapy for social anxiety disorder. J Med Inter Res 2011; 13(2): e39. doi: 10.2196/jmir.1776
20. Ivanova E, Lindner P, Ly KH, Dahlin M, Vernmark K, Andersson G, Carlbring P. Guided and unguided Acceptance and Commitment Therapy for social anxiety disorder and/or panic disorder provided via the Internet and a smartphone application: A randomized controlled trial. J Anxiety Disord 2016; 44: 27-35. doi: 10.1016/j.janxdis.2016.09.012
21. Jin SV, Youn S. Why do consumers with social phobia prefer anthropomorphic customer service chatbots? Evolutionary explanations of the moderating roles of social phobia. Tele Info 2021; 62: 101644. doi: 10.1016/j.tele.2021.101644
22. Johnston L, Titov N, Andrews G, Spence J, Dear BF. A RCT of a transdiagnostic internet-delivered treatment for three anxiety disorders: examination of support roles and disorder-specific outcomes. Plos One 2011; 6(11): e28079. doi: 10.1371/journal.pone.0028079
23. Krömer L, Jarczok TA, Althen H, Mühlherr AM, Howland V, Jungmann SM, Freitag CM. Implicit assumptions and interpretation bias in youth with severe, chronic social phobia. EUR CHILD ADOLES PSY 2021: 1-12. doi: 10.1007/s00787-021-01879-3
24. Kuckertz JM, Gildebrant E, Liliequist B, Karlström P, Väppling C, Bodlund O, Stenlund T, Hofmann SG, Andersson G, Amir N. Moderation and mediation of the effect of attention training in social anxiety disorder. Behav Res Ther 2014; 53: 30-40. doi: 10.1016/j.brat.2013.12.003
25. Lipsitz JD, Markowitz JC, Cherry S, Fyer AJ. Open trial of interpersonal psychotherapy for the treatment of social phobia. Am J Psychiat 1999; 156(11): 1814-1816. doi: 10.1176/ajp.156.11.1814
26. Lowndes TA, Egan SJ, McEvoy PM. Efficacy of brief guided self-help cognitive behavioral treatment for perfectionism in reducing perinatal depression and anxiety: a randomized controlled trial. Cogn Behav Ther 2019; 48(2): 106-120. doi: 10.1080/16506073.2018.1490810
27. Martínez-Vispo C, Rodríguez-Cano R, López-Durán A, Senra C, Fernández del Río E, Becoña E. Cognitive-behavioral treatment with behavioral activation for smoking cessation: Randomized controlled trial. Plose One 2019; 14(4): e0214252. doi: 10.1371/journal.pone.0214252
28. Mathiasen K, Riper H, Ehlers LH, Valentin JB, Rosenberg NK. Internet-based CBT for social phobia and panic disorder in a specialised anxiety clinic in routine care: Results of a pilot randomised controlled trial. Internet Interv 2016; 4: 92-98. doi: 10.1016/j.invent.2016.03.001
29. McLeod BD, Southam-Gerow MA, Jensen-Doss A, Hogue A, Kendall PC, Weisz JR. Benchmarking treatment adherence and therapist competence in individual cognitive-behavioral

treatment for youth anxiety disorders. J Clin Child Adol 2019; 48(sup1): S234-S246. doi: 10.1080/15374416.2017.1381914

30. Pak AT, Sengul HS, Sengul Y, Gurkan ZM. Social phobia and its relationship with perceived epilepsy-associated stigma IN patients with epilepsy. Epilepsy Behave 2021; 121: 108060. doi: 10.1016/j.yebeh.2021.108060
31. Păsărelu CR, Andersson G, Bergman Nordgren L, Dobrean A. Internet-delivered transdiagnostic and tailored cognitive behavioral therapy for anxiety and depression: a systematic review and meta-analysis of randomized controlled trials. Cogn Behav Ther 2017; 46(1): 1-28. doi: 10.1080/16506073.2016.1231219
32. Polak K, Reisweber J, Meyer BL. Transcending self therapy: Four-session individual integrative cognitive-behavioral treatment: A case report. Psychol Serv 2021. doi: 10.1037/ser0000539
33. Roehr B. American psychiatric association explains DSM-5. BMJ 2013; 346. doi: 10.1136/bmj.f3591
34. Salam A, Sharma MP. Can mindfulness modify your thoughts? A study in the context of social phobia. Eur Rev Appl Psychol 2021; 71(6): 100727. doi: 10.1016/j.erap.2021.100727
35. Schulz A, Stolz T, Vincent A, Krieger T, Andersson G, Berger T. A sorrow shared is a sorrow halved? A three-arm randomized controlled trial comparing internet-based clinician-guided individual versus group treatment for social anxiety disorder. Behav Res Ther 2016; 84: 14-26. doi: 10.1016/j.brat.2016.07.001
36. Southam-Gerow MA, Chapman JE, Martinez RG, McLeod BD, Hogue A, Weisz JR, Kendall PC. Are therapist adherence and competence related to clinical outcomes in cognitive-behavioral treatment for youth anxiety? J Consult Clin Psych 2021; 89(3): 188. doi: 10.1037/ccp0000538
37. Tibi L, Asher S, van Oppen P, van Balkom AJ, Eikelenboom M, Visser HA, Penninx BW, Anholt GE. The correlates of social phobia in OCD: Findings from a large clinical sample. Brit J Clin Psychol 2021. doi: 10.1111/bjc.12292
38. Tillfors M, Andersson G, Ekselius L, Furmark T, Lewenhaupt S, Karlsson A, Carlbring P. A randomized trial of Internet-delivered treatment for social anxiety disorder in high school students. Cogn Behav Ther 2011; 40(2): 147-157. doi: 10.1080/16506073.2011.555486
39. Tirpak JW, Cassiello-Robbins C, Ametaj A, Olesnycky OS, Sauer-Zavala S, Farchione TJ, Barlow DH. Changes in positive affect in cognitive-behavioral treatment of anxiety disorders. Gen Hosp Psychiat 2019; 61: 111-115. doi: 10.1016/j.genhosppsych.2019.06.008
40. Titov N, Andrews G, Schwencke G, Robinson E, Peters L, Spence J. Randomized controlled trial of Internet cognitive behavioural treatment for social phobia with and without motivational enhancement strategies. Aust Nz J Psychiat 2010; 44(10): 938-945. doi: 10.3109/00048674.2010.493859
41. Titov N, Andrews G, Schwencke G. Shyness 2: treating social phobia online: replication and extension. Aust Nz J Psychiat 2008; 42(7): 595-605. doi: 10.1016/j.genhosppsych.2019.06.008
42. Tulbure BT, Szentagotai A, David O, Ștefan S, Månsson KN, David D, Andersson G. Internet-delivered cognitive-behavioral therapy for social anxiety disorder in Romania: a randomized controlled trial. Plose One 2015; 10(5): e0123997. doi: 10.1371/journal.pone.0123997
43. Villanueva J, Meyer AH, Mikoteit T, Hoyer J, Imboden C, Bader K, Hatzinger M, Lieb R, Gloster AT. Having versus not having social interactions in patients diagnosed with depression or social phobia and controls. Plos One 2021; 16(4): e0249765. doi: 10.1371/journal.pone.0249765
44. Zsido AN, Varadi-Borbas B, Arato N. Psychometric properties of the social interaction anxiety scale and the social phobia scale in Hungarian adults and adolescents. Bmc Psych 2021; 21(1): 1-15. doi: 10.1186/s12888-021-03174-6