

## **A Review of Online Intervention for Obsessive-Compulsive Disorder (OCD)**

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The aim of this paper is to summarize and discuss the existing online intervention for Obsessive-Compulsive Disorder (OCD). This paper is using the narrative approach and the search engine used include PubMed, SAGE Journals, EBSCO host and Cochrane Library. A total of 10 articles were included for this review and it categorised by authors into five online intervention programmes for OCD which are BiP OCD, OCD? Not Me!, OCD-NET, iCBT and COT. All these programmes were aimed to help the people who suffer from OCD, but the programmes might have some differences in term of the age range of the participants, the duration of the programme, and slight differences in term of the contents of the programmes and measures used. The online intervention for OCD used the principles of Cognitive Behavioural Therapy (CBT) and included the part of psychoeducation, exposure and response prevention (ERP), and relapse prevention. The contents of psychoeducation, ERP and relapse prevention, and the effectiveness of the online intervention programme for OCD will be discussed in this paper. The future research should emphasize on the development of an online intervention for OCD in Malaysia by considering the cultural and language issues in Malaysia.

*Keywords:* Obsessive-Compulsive Disorder (OCD), online intervention, internet, Cognitive Behavioural Therapy (CBT)

Obsessive-Compulsive Disorder (OCD) is characterized by the presence of obsessions, compulsions or both, which are time-consuming or cause clinically significant distress or impairment in social, occupational, or other important areas of functioning (American Psychiatric Association, 2013). It can be treated successfully with cognitive behavioural therapy (CBT), particularly exposure and response prevention (ERP) (Gava et al.,

2007). However, most individuals with OCD delay seeking treatment despite the disability associated with symptoms because of the costs of treatment, the limited number of mental health professionals skilled in the treatment, and stigma (Wootton et al., 2011).

The use of online intervention is a recent innovative approach that may improve access to evidence-based care for people with OCD. It has been introduced in

other countries such as Australia, Sweden and Korea. The content and treatment components of Internet-based CBT are not different from the regular CBT (Andersson, 2009). Online intervention requires less input from a therapist and reduced the costs of treatment when compared with face-to-face therapy (Seol et al., 2016). It has been reported that it would be highly acceptable (Wootton et al., 2011), thus, reducing the barriers for people with OCD to seek treatment.

In Malaysia, although there is no absolute statistics for OCD, it can be said that the prevalence of OCD is 1-2% of the population, cutting across all the ethnic groups and affecting both males and females (Andrew Mohanraj, 2018). The stigma and discrimination that associated with mental illness is a major obstacle for Malaysians to seek psychological treatment (Farhana Syed Nokman, 2018). Thus, it can be said that many individuals with OCD in Malaysia remain undetected or untreated. There is a need to develop an online intervention for OCD in Malaysia by considering the language and culture of Malaysian, to help with the individuals who suffer from OCD.

### **Aims**

The aim of this review is to summarize and discuss the existing online intervention for OCD. Besides, this review also aims to find out the needs of developing an online intervention to increase the mental health literacy on OCD and to reduce the OCD symptoms among Malaysian. The further aim for this review is to identify suitable elements to be included in the online intervention module for Malaysian according to the available studies from other countries.

### **Search Strategy and Selection Criteria**

References for this review were identified by conducting electronic searches of the following databases: PubMed, SAGE Journals, EBSCO host and Cochrane Library. Subjects search keywords and combination included: Obsessive-Compulsive Disorder, online intervention and internet. The inclusion criteria are online intervention for OCD of all age groups from all countries, articles in English and published within these 10 years (2010 - 2019). Exclusion criteria are articles in other languages, review articles, unavailable abstract or full text and studies which irrelevant to the topic such as articles related to psychosis, major depressive disorders, and obsessive-compulsive personality disorder. A total of 10 articles were included for this review (Figure 1).

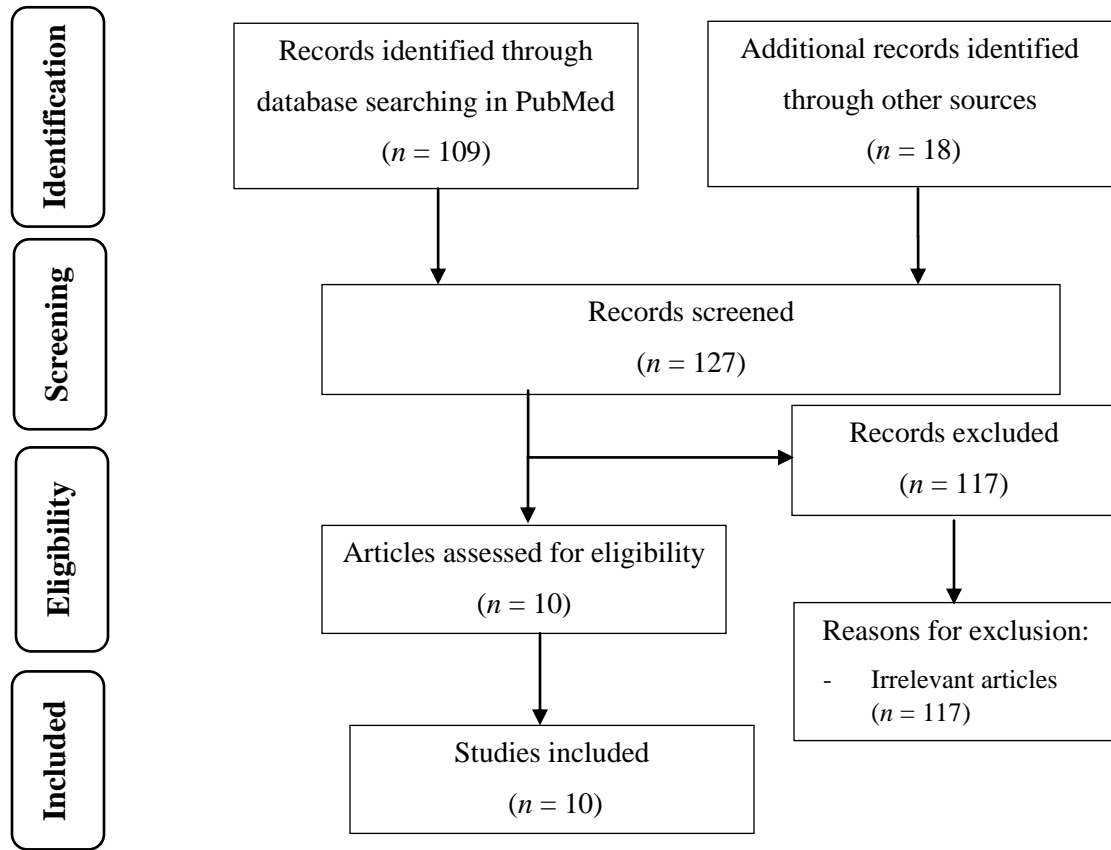


Figure 1 Flow chart of literature review

## Results

There is limited literature on the online intervention for OCD. Among the 10 studies which included in this review, it can be categorised into five online intervention programmes for OCD which are Barninternetprojektet OCD (BiP OCD) (Lenhard et al., 2014; 2017a; 2017b) and OCD-NET (Andersson et al., 2012; 2014) in Sweden, OCD? Not Me! (Rees et al., 2015; 2016) and Internet-based cognitive-behavioural therapy (iCBT) (Kyrios et al., 2014; 2018) in Australia and computerized obsessive-compulsive disorder therapy

(COT) programme in Korea (Seol et al., 2016).

All these programmes were aimed to help the people who suffer from OCD, but the programmes might have some differences in terms of the age range of the participants, the duration of the programme, and slight differences in term of the contents of the programmes and measures used. The summary of the online intervention is shown in Table 1.

Table 1

Summary of the Online Intervention for OCD

Online Intervention Programme	Authors (Year)	Samples	Duration	Contents of the programme	Design	Measures	Outcomes
Barninternetprojektet OCD (BiP OCD)	Lenhard et al. (2014, 2017a, 2017b)	67 participants (12 – 17 years old)	12 weeks (12 chapters)	1) Psychoeducation about OCD and CBT 2) ERP exercise and cognitive restructuring 3) Relapse prevention strategies	Randomised Controlled Trial (RCT)	Children Yale-Brown Obsessive Compulsive Scale (CY-BOCS)	Significant improvements on the CY-BOCS and participants continued to improve at follow-up. It is a cost-effective treatment and results in societal cost savings, compared with patients who do not receive evidence-based treatment.
OCD? Not Me!	Rees et al. (2015, 2016)	132 participants (12 – 18 years old)	8 weeks (8 stages)	1) Psychoeducation about OCD and ERP 2) ERP exercise 3) Relapse prevention strategies	Pre-test Post-test design	Children’s Florida Obsessive Compulsive Inventory (C-FOCI), Children’s Obsessive-Compulsive Inventory—Revised (ChOCI-R)	Significant reductions in OCD symptoms and severity between pre- and post-test.

OCD-NET	Andersson et al. (2012, 2014)	101 participants (18 – 67 years old)	10 weeks (10 modules)	1) Psychoeducation about OCD and CBT 2) Cognitive restructuring 3) ERP exercise 4) Relapse prevention strategies	Randomised Controlled Trial (RCT)	Yale-Brown Obsessive-Compulsive Scale (Y-BOCS), Obsessive-Compulsive Inventory (OCI)	OCD-NET resulted in larger improvements than the control condition on the Y-BOCS at post-treatment, and it has sustained long-term effects.
Internet-based cognitive-behavioural therapy (iCBT)	Kyrios et al. (2014, 2018)	179 participants (18 years old and above)	12 weeks (12 modules)	1) Psychoeducation about OCD and CBT, mood management strategies 2) ERP strategies 3) Cognitive therapy techniques 4) Relapse prevention strategies	Randomised Controlled Trial (RCT)	Y-BOCS, OCI, Clinical Global Improvement Scale (CGI), Obsessional Beliefs Questionnaire (OBQ)	iCBT showed significantly greater symptom severity improvement compared to internet-based standard progressive relaxation training (iPRT).
Computerized Obsessive-compulsive disorder Therapy (COT)	Seol et al. (2016)	42 participants (16 – 64 years old)	11 weeks (11 sessions)	1) Psychoeducation pertaining to OCD and CBT 2) Anxiety-relieving techniques and ERP exercises 3) Identifying and restructuring dysfunctional beliefs related to OCD 4) Relapse prevention	Pre-test Post-test design	Korean self-report version of Y-BOCS	Significant improvements in OC symptoms following treatment.

### **Online Intervention For OCD**

The following part will discuss the contents of the online intervention programmes for OCD and their effectiveness.

### **Contents of the Online Intervention Programmes for OCD**

Most of the online intervention for OCD used the principles of CBT and included the part of psychoeducation, exposure and response prevention (ERP), and relapse prevention. The section below will discuss the contents of each part of the online intervention programme.

#### **Psychoeducation**

Most people avoid the treatment and delays of care because of a lack of knowledge of identifying the symptoms of mental illness, ignorance about the access treatment and prejudice against people who have a mental illness (Hassan et al., 2018). Thus, it is important to increase people's mental health literacy through psychoeducation.

Psychoeducation is one of the most effective of the evidence-based practices that have been used in both the clinical trials and community setting (Lukens & McFarlane, 2004). Psychoeducation is an educational method which aims to provide information and training to people with mental illness or their family members, to work together with the mental health professionals as part of the clinical treatment plan. It can improve the level of people's understanding of mental disorders significantly and ensure the patients participate actively in the treatment (Bhattacharjee et al., 2011).

All the online intervention programmes for OCD which included in this paper emphasize on the psychoeducation part (Lenhard et al., 2014; Rees et al., 2015;

Andersson et al., 2012; Kyrios et al., 2014; Seol et al., 2016). By giving psychoeducation on OCD and its symptoms, OCD cycle, OCD hierarchy, and the introduction on CBT and ERP, which is the most evidence-supported technique to treat OCD successfully, can help people to have basic knowledge when they suffer or facing the symptoms. Thus, they will attempt to manage those symptoms (Hassan et al., 2018).

Nevertheless, people might not be interested if the information is presented in a wordy and boring way, therefore, pictures, videos, and illustrations can be included to grab people's attention. People should also be given the chance to share their understanding of mental illness (OCD) before presented the information to them. Questions and Answers (Q & A) section should be provided to clear their doubts about the information provided for them. Lastly, it would be great if they are given the chance to test their understanding of OCD by having a simple quiz at the end of the psychoeducation part.

#### **Exposure and Response Prevention (ERP)**

ERP is a cognitive behaviour therapy (CBT) technique that has the most evidence-supported and it has been used to treat OCD successfully since the 1960s (Meyer, 1966). ERP involves the exposure to the situation that triggers obsession combined with the prevention of compulsions and it is typically done in a gradual and systematic manner (Lenhard, 2017c). ERP has been included as one of the important contents in the online intervention programmes for OCD (Lenhard et al., 2014; Rees et al., 2015; Andersson et al., 2012; Kyrios et al., 2014; Seol et al., 2016). The ERP hierarchy and the ERP exercises are the important components of

ERP and it must be included in the online interventions for OCD.

From a behavioural perspective, ERP works by breaking the conditioned response between obsessions and compulsions (Meyer, 1966). According to this model, compulsions temporarily ease people's anxiety which triggers by the obsessive thoughts. The decrease in distress strengthens the rituals and conditions for people to continue using them when confronted with subsequent intrusive thoughts. Besides, when individuals confront triggering situations while simultaneously refraining from engaging in rituals, their distress decreases naturally in the absence of their feared outcome. The fear response is eventually extinguished, and OCD symptoms lessen with repeated exposure (Hezel & Simpson, 2019).

Individuals with OCD experience anxiety-provoking obsessions that are triggered by various situations and subsequently perform compulsions or engage in avoidance behaviours to reduce the anxiety associated with these thoughts. These rituals and avoidance behaviours reinforce individuals' fear and strengthen both obsessions and compulsions (Hezel & Simpson, 2019). The aim of ERP is to break this cycle of symptoms by eliminating rituals and avoidance, thus, by teaching individuals how to tolerate distress without engaging in the counterproductive behaviours, challenges people's existing fear response (Foa, Yadin & Lichner, 2012).

ERP typically shares certain elements across settings (Foa, Yadin & Lichner, 2012). Firstly, there is an assessment and treatment planning phase during which the clinician provides psychoeducation about OCD and its treatment and collects information about

the patient's symptoms. The patient and clinician work together to identify external (situations, objects, people, etc.) and internal (thoughts and physiological reactions) stimuli that trigger the person's obsessive thoughts and subsequent distress. They also list the specific content of the person's obsessions and compulsions, discuss the functional relationship between the two, and identify the feared outcome if the rituals are not performed. The patient and clinician then work collaboratively to rank different situations in order from least to most distressing (as measured by subjective units of distress, SUDs), which results in a fear hierarchy (Hezel & Simpson, 2019).

Over the subsequent treatment sessions, the clinician coaches the patient as he or she repeatedly confront the situations on his or her fear hierarchy while refraining from engaging in compulsions. By practising both *in vivo* and imaginal exposures, patients learn that the consequences they fear do not occur, at the same time, they know how to tolerate distress and uncertainty without engaging in compulsions (Foa, Yadin & Lichner, 2012). Following each in-session exposure, the therapist and patient engage in post-exposure processing to review the patient's experience and how his or her expectations were violated and what he or she learned. The patients are also asked to practice exposures on their own for homework and to attempt to eliminate all rituals in their day-to-day life. As patients habituate to various scenarios, they then gradually work their way up the fear hierarchy to confront increasingly distressing situations. Typically, a course of ERP will conclude with relapse prevention planning.

### **Relapse Prevention**

ERP modifies obsessive-compulsive habits and reduces the OCD symptoms, but the symptoms do not go away completely. People may experience increased anxiety in stressful situations and have the urges to ritualize. Thus, relapse prevention is required to help in anxiety coping and prevent the returning of obsessive-compulsive habits (Hiss, Foa & Kozak, 1994). Relapse prevention is a core component of CBT for OCD and it is included in the online intervention programmes (Lenhard et al., 2014; Rees et al., 2015; Andersson et al., 2012; Kyrios et al., 2014; Seol et al., 2016).

The patient was asked to identify possible stressors or risk situations that might cause him or her to experience a setback. The therapist helped the patient to develop a list of the potentially problematic situation. Setbacks were presented as a normal reaction to anxiety and the patient was instructed to view setbacks as an opportunity to practice the skills that he or she had learned during treatment. Maladaptive patterns of interpersonal interaction were identified, and remedial actions were considered. The therapist explored ways in which the friend or family member could assist the patient when he or she experiences setbacks. The need for activities to occupy time that was formerly spent on obsessions and rituals was discussed, and systematic planning for job-seeking or leisure activities was begun (Hiss, Foa & Kozak, 1994).

Some of the strategies used in relapse prevention include anticipating potential triggers of relapse, helping them to recognize the early signs of relapse, and generating action plan that can be implemented if symptoms do re-emerge

(Krebs & Lewis, 2018). Although the relapse prevention strategies that have been included in the online interventions vary, most of them focus on problem-solving and the maintenance of the treatment goals. Table 2 shows a summary of the contents of the online intervention for OCD.

### **Effectiveness of the Online Intervention for OCD**

Research has shown that the online interventions for OCD are effective to reduce the OCD symptoms (Lenhard et al., 2014; Rees et al., 2015; Andersson et al., 2012; Kyrios et al., 2014; Seol et al., 2016). The online interventions have shown that it can lead to significant symptoms and severity reductions and increases general functioning.

From the patients' point of view, the online intervention for OCD is a safe and highly satisfactory treatment. It is more convenient as compared to the face-to-face intervention because all the treatment-related factors such as treatment manual, symptom evaluation, homework assignments and ERP exercises, are integrated into the online platform (Seol et al., 2016). It increases access to effective treatment for people with OCD who would not seek or receive help. Besides, it has the potential to save clinician time and also less costly for society than leaving patients untreated on a waiting list (Lenhard, 2017c).

The follow-up study of Andersson et al. (2012) show that ICBT has strong long-term effects for OCD patients and these results are in line with previous long-term outcome studies on face-to-face CBT for OCD patients, with large within-group effects sizes 2 years after treatment (Andersson et



al., 2014). The effectiveness of the online intervention is highly affected by the motivation and compliance of the participants because it requires the participant to undergo the ERP exercise by themselves without face-to-face monitoring by the therapist.

### **Discussion**

From the review in this paper, the recommended duration for the online intervention is between 8 to 12 weeks and the number of modules suggested is between 8 to 12 modules. Besides, it is important to involve the participants' significant one such as their parents, caregivers, spouse, or friends, in the interventions to collect their reports of the participants' OCD symptoms and to support them to complete the programme.

It was noticed that the dropout rate of participants was higher in COT programme (35.7%) compared with other programmes (12 – 14%) and the major reasons for dropouts include lack of time and difficulties in maintaining their treatment motivation. Motivation and compliance are important for self-treatment and it is necessary to foster the motivation of the participants through the regular contact with the coordinators and therapists. Most of the online interventions provide a platform for participants to interact with the therapist. For example, the participants could raise questions via the Questions and Answers (Q & A) section of the website or through emails. The interaction between the participants and therapists is important as the therapists can provide feedback on the homework assignments and support the participants when they are doing Exposure and Response Prevention (ERP) which may trigger their anxiety and fear.

Among the studies about online intervention programme that discussed in this paper, only the COT programme classifies the participants into different OCD subtype, such as checking, washing, obsession or mixed. It is important to know the OCD subtype of the participants in order to provide more information to the participants about his or her specific subtype instead of only provide more general information about OCD. Different OCD subtype will demonstrate different behaviours, and even individuals with the same OCD subtype will have different OCD behaviour manifestations. Thus, it is important to encourage the participant to be actively involved in the activities in the module, such as identify their own OCD vicious cycle, build their own OCD hierarchy and perform the ERP exercises.

The COT programme used the Korean self-report version of Y-BOCS instead of the original clinician-administered Y-BOCS to measure the primary outcome of the study by considering the cultural and language issues of the tools used. Therefore, it is important to consider the cultural and language issues when developing an online intervention and the screening or assessment tools which will be used as the baseline to test for the effectiveness of the online intervention.

Besides, it is also important to consider the participants' education level and social economy when developing the module. It is because contents beyond the participants' level of understanding will affect their motivation to maintain in the treatment process. Thus, the programme should provide the information in a more direct and simple manner, if possible, use more visual aids, in order to help the participants to understand the contents. Visual aids are

helpful for the participants to remember the contents and it will make the programmes more interesting.

### **The Future Research in Malaysia**

The online interventions for OCD could be a helpful therapeutic alternative for people with OCD when face-to-face treatment is not available, particularly for those from rural areas, or for people who refuse to seek treatment due to time constraints, money constraints or stigma. It is convenience and provides people with OCD greater access to a specialized OCD service. Although the online interventions provide a lot of advantages, the interventions that are available online are mostly developed by Western countries which might be not suitable for use in Malaysia. Thus, a Malaysia version's online intervention for OCD should be developed by considering the culture and language in Malaysia.

The development of an online intervention for OCD is to increase the mental health literacy through the psychoeducation about OCD and to provide a platform to address the mild and moderate OCD among Malaysian. Generally, the level of mental health knowledge of the general public in Malaysia is considerably low (Yeap & Low, 2009). Lack of awareness about mental illnesses and stigma are the significant barriers for people with mental illness to seek help and care. Malaysians are thought to be highly sensitive and conservative regarding the mental health issue and they would perceive the risk of potential embarrassments from their social circles to outweighs the benefit derived from medical and psychological consultations (Hassan et al., 2018). Thus, it is important to psycho-educate them by introducing OCD,

including signs and symptoms, the importance of early screening and assessment, and interventions for OCD to the general public for them to have the ability to recognise the problems in order to promote better understanding about OCD, and also encourage them to go for early screening and assessment.

Some of the barriers to treatment include high costs of care, stigma surrounding mental health issues, and lack of access to clinicians who are trained in evidence-based practices (Patel et al., 2018). The development of an internet-based ERP programme that individuals can use to guide themselves through treatment with the support of a therapist through e-mail, phone, or the online treatment platform is one of the solutions to improve the access to care. The implementation of these ERP internet programmes demonstrated promising results in terms of feasibility and efficacy. Individuals who completed these online programmes experienced a clinically significant decrease in OCD symptoms which were maintained at follow-up (Wootton et al, 2015).

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*Table 2*

Summary of the Contents of the Online Intervention for OCD

<b>Online Intervention</b>	<b>BiP OCD</b>	<b>OCD? Not Me!</b>	<b>OCD-NET</b>	<b>iCBT</b>
Psychoeducation	Week 1 to 4: Introduction to ICBT, OCD, the OCD circle and the building of OCD hierarchy.	Psychoeducation throughout the programme about OCD and normalization of the symptoms, ERP and rationale for treatment, others' accommodation of OCD symptoms and how to reduce it, and the impact of stress on OCD symptoms.	Module 1 and 2: The explanation of CBT and OCD, assessing OCD symptoms with the CBT model by linking the OCD symptoms to the OCD cycle and how to functionally analyse OCD problems	First 3 modules: Provide information about OCD, anxiety, and an introduction to CBT, together with the anxiety and depression management strategies.
Exposure and Response Prevention (ERP)	Testing of exposure (week 5), planning of ERP training (week 6), ERP exercises (week 7 to 9) and coping with obsessions (week 10).	The formulating of ERP hierarchy, strategies for completing exposure exercise and 10 exposure exercises which must be done throughout the stages.	Establishing the treatment goals and exposure hierarchy (module 4), describing different aspects of ERP (module 5), ERP exercises (module 6 to 8).	ERP included in modules 4 to 6 that focuses on the construction of fear hierarchies, plan and implement an ERP programme which suited to their individual needs.
Relapse Prevention	Week 11 and 12: Problem-solving, maintenance of treatment gains.	Coping with anxiety, talking with friends and loved ones about OCD, coping with family stress, coping with self-doubt, self-appreciation exercise and receiving a planned reward for completing treatment	Module 10: Summary of treatment, explaining the difference between relapse and setback.	Module 10 to 12: Problem-solving, risk identification, contingency management, mindfulness techniques, the importance of daily practice and the focus on enablers of maintenance of CBT and barriers to the maintenance of CBT.

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