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Validity and Reliability of Obsessive Compulsive Disorder Inventory (OCDI)

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Abstract
This study aimed to develop and obtained content validity and reliability of the Obsessive Compulsive Disorder Inventory (OCDI). The OCDI aims to measure levels of obsessive and compulsive thinking and behavior in individuals aged between 18 to 21 years old. The construction of the OCDI is based on the theory of Cognitive Behavior Therapy (CBT) pioneered by Aaron Temkin Beck (1976). This inventory contains 16 items divided into 2 sub-scales and each sub-scale contains 8 items. Sub-scale 1: Obsessive, Sub-scale 2: Compulsive. The content validity of the OCDI was evaluated by 6 expert panels comprising academics, psychologists, counseling and education. A total of 60 students from public universities were selected as respondents to obtain reliability scores. Overall validity of the OCDI was moderately high (56.2%). The reliability values indicate moderately high values of reliability with 0.721. Therefore, this study found that OCDI items need to be improved in order to achieve acceptable reliability.
Keywords: Obsessive Compulsive Disorder Inventory, Content Validity, Reliability, Cognitive Behavior Therapy, Student

Introduction
Based on Hasim et al (2018), one of the intervention ways a counselor used during a counseling session is by using a measuring tool and testing. A measuring tool is important in counseling because it acts as a bridge between theory and practice, it helps the counselor to

test the conceptual framework and assumptions in various settings. Measurement can be used as a tool to help the counselor's diagnosis and do research on client attributes and personalities. These results are important for clients to know about themselves. It is also able to provide an important picture of their personal information, their strengths and weaknesses as an individual. Obsessive Compulsive Disorder Inventory (OCDI) is a measuring tool that was built to assess the OCDI level and potential towards an individual. This inventory also can be used to look on the thinking potential and actions that can be taken repeatedly until it causes pressures towards a person. The items that consist in the inventory was based on the Obsessive and Compulsive (OCDI) symptoms. This inventory development was based on the cognitive development theory (CBT). Based on Amalia (2019), the Cognitive Behavior Therapy is a therapy developed by Beck in 2976, the basic concept is to believe that human thought patterns are formed through the process of Stimulus-Cognition-Response (SCR) sequences which are interconnected and form a kind of network in the human brain, where cognitive processes will be the determining factor in explaining how human thinks, feel and act. Based on the above statement, obsessive compulsive disorder that causes repetitive thoughts and actions so that individuals can experience stress as a result of the incident. In this case, CBT theory act as an effort to help individuals to change their negative mindset due to the symptoms of OCD disorders experienced, in addition to reducing the stress due to thoughts and actions by the individual himself.

Background
Based on Blakey et al (2017) Obsessive Compulsive Disorder (OCD) was characterized as an unwanted disturbing thought that sometimes disturb the thoughts, images and doubts on an individual (obsession), and the urge to intentionally repeat the actions as a ritual and other anxiety reduction strategies to neutralize these actions (compulsive). Compulsive rituals are reinforced by the reduction of emerging anxiety, yet anxiety reduction is temporary and coercion prevents the natural extinction of obsessional fear in the long run. Compulsive obsessive symptoms cause great distress and functional disorders among 2% to 3% of the population who suffer from OCD at some point in their life. The obsessive compulsive disorder is a mental health disturbance cause worriedness as an individual himself rarely find a solution to the problem. This is due to the lack of inventory to measure the extent to which obsessive compulsive disorder is felt by the individuals. Therefore, the purpose of this inventory development is to measure the level of obsessive and compulsive in an individual from the symptoms they felt until it makes him suffered restlessly. Among the symptoms that occur on patients with obsessive compulsive disorder can cause errors by diagnosing themselves. According to Amalia (2019), the mistake in evaluating oneself is a confusion in the pattern of thinking that can lead to a wrong self-assessment. One way that can be used to change the confusion in these thinking patterns was through cognitive behavior therapy interventions. The cognitive behavior therapy is a term used to describe a psychotherapy intervention with a purpose to reduce the psychological disturbance and maladaptive behavior by changing the way they think. Cognitive behavior therapy is based on the understanding that visible behavior as the result of thinking. With cognitive intervention, it will be able to change the way we think, feel and behave.

Literature Review
A study by Anisa (2016) on a case of a 23-year-old woman who has obsessive compulsive disorder. The results of this study show that cognitive behavioral therapy (CBT) obtained the

subject was able to turn his negative thoughts into positive thoughts. Fear or anxiety that arises in a person's mind can affect that person's behavior. Obsessive compulsive disorder is a condition in which an individual is unable to control his or her thoughts which become obsessive, he or she does not expect and repeat certain actions several times in order to control their thoughts and reducing their anxiety levels. CBT or cognitive behavior therapy is a way that may help OCD patients to think in certain situations affects how they feel emotionally and physically.

A study conducted by Indardi (2016) on children with OCD through the process of interpersonal communication developed by the family in the healing stage. The researcher had conducted a case study on research subjects consisting of 3 informants namely 54-year-old WY with a job as a housewife, act as a biological parent and effectively communicate with their child who is in the period of rehabilitation of OCD (Obsessive Compulsive Disorder). The subject of further research is the biological father of A.V, whose initials are T.R. In this process of family communication that will be examined is the core family of A.V who live in one house. The results of this study showed that the communication barriers and differences in feedback from children who are subjects in the case study to their parents in the healing process.

A study conducted by Amalia (2019), on one of the students who have obsessive compulsive behavior in the form of using a hand body on the soles of the feet repeatedly. Based on the results of study that have been done, it shows that cognitive behavior therapy was able to reduce compulsive obsessive behavior. Overall, by looking at the changes that occur on the subject in eight sessions, namely the change of obsessive thoughts that were originally irrational changes into more rational, as well as the decrease in tension and compulsive behavior. It can be concluded that cognitive behavior therapy using relaxation techniques, techniques cognitive restructuring, and exposure techniques with responsiveness can reduce obsessive compulsive behavior. Theoretically, cognitive behavior therapy is believed to be able to integrate the thoughts, behavior and decision making of the subject.

A study conducted by Rahmawati et al (2019), on obsessive compulsive disorder (OCD) among the anxiety disorders experienced by people, which is one of the personality disorders that can arise due to distress. Population taken with the characteristics of OCD respondents and their family members. As for the sample, 2 respondents and their families were chosen by purposive sampling. From the results of the study found, there is a description on the behavior of compulsive obsession and some complaints related to OCD. Description of OCD behavior according BOSC checklist, on an overview of aspects: (1) Aggressive Obsession, (2) Contamination Obsession, (3) Sexual Obsession, (4) Saving Obsession (5) Religious Obsession, (6) Obsession with the Need for Symmetry or Accuracy, (7) Other obsessions, (8) Somatic obsession, (9) Cleaning / Washing Compilation, (10) Compulsory Checking, (11) Recurrent Compulsions, (12) Computation of Counts, (13) Compilation Order / Arrange, (14) Accumulation of Hoarding / Accumulation, (15) Other Compulsions. As for the problems related to the interpersonal relationship of the subject with their partner, there are some complaints that do not cause problems for the couple and there are some complaints that cause them. Behavior that is considered to cause problems for couples when OCD behavior appears as respondents forcing others to do the same actions that they consider to be right.

Based on some of the above studies, obsessive compulsive disorder is one of the personality disorders that results in abnormal thoughts and actions than usual. From several studies, this disorder is often found based on studies cases of obsessive compulsive disorder such as always thinking negatively about something, cases of students who use the hand body on the soles of the feet repeatedly and so on. To solve this problem the researcher uses the CBT approach for subject assistants to turn negative thoughts into positive thoughts and can also use interpersonal communication built by the family.

Importance of Study

Issues on mental health disorders is really worrying nowadays, there are a lot of people having personality disorders do not feel anxious about their maladaptive behavior especially those with obsessive compulsive disorder. According to Rahmawati (2019), the emergence of personality disorders begins with distress. One of the personality disorders that can arise due to such distress is obsessive compulsive, obsessive compulsive personality is the presence of preoccupation (firmness) in regularity, perfection, mental control and interpersonal. Employees who are prone to have obsessive compulsive disorder may due to the stress they experienced in their daily life or at work. A study by Nurlita and Lisiswanti (2016), on Body Dysmorphic Disorder, she mentioned that body image is important for millions of people, it is known that 93% women and 87% men care about their appearance, but excessive obsession can cause Body Dysmorphic Disorder (BDD). This is a physical disability and causes distress and declining in social functions by considering a particular part of the body itself is a bad thing. It is also one the symptoms for individuals with obsessive compulsive disorder. This OCD inventory can be a guide to use in psychology and counselling field of study. It may help the clients and students or people to have an early diagnose on obsessive compulsive disorder and help to choose the right solutions to perceive the problem. Therefore, by identifying the level and potential of a person to have obsessive compulsive disorder at an early stage is very important so that an appropriate intervention can be taken immediately.

OCD Theoretical Development

The Obsessive Compulsive Disorder Inventory (OCDI) was developed based on the theory of Cognitive Behavior Therapy introduced by Aaron T. Beck in 1960s. The therapy uses a combination of cognitive and learning. Cognitive behavior therapists pay attention to inner-self, thoughts, perceptions, assessments, self-statements, unspoken assumptions (unconscious) and manipulated these processes in an effort to understand and control the behavior. Besides that, this inventory was developed based on two main symptoms which are obsessive and compulsive.

1. Subscale 1
   Obsession is an intrusive and repetitive thought, idea or impulse that seems beyond one's ability to control. Obsession can be so strong and persistent that it interferes with a person's daily life and causes them to have distress and anxiety. Besides that, doubts, impulses and mental imagery were also included in its symptoms.

2. Subscale 2
   Compulsion is a repetitive behavior, such as washing hands and checking on door locks) or a repetitive mental action, such as praying, repeating certain words or counting) that a person feels as a must or encouragement to do it repeatedly.

Compulsions often appear in response to obsessive thoughts and appear quite often and strongly enough to disrupt an individual daily life and cause a significant distress.

According to Rahmawati et al (2019), OCD can also be caused by neurological symptoms. An approach estimates that OCD has genetic factors. Several studies have found the best index for obsessive and compulsive in monoamine twins rather than dizygotic twins. Chromosome 9 contains an area associated with OCD. Not all cases of OCD have genetic factors, disorders sometimes appear after brain damage caused by some things such as birth trauma. Encephalitis, and head trauma. Some considerations of OCD symptoms are related to damage or dysfunction of the basal ganglia, cingulated gyrus, and prefrontal cortex. The prevalence of OCD is 1-2%. Women are more common than men. OCD mostly begins to appear at a young age. People with symptoms of this disorder are not interested in getting married, because of the obsession with fear of the dirty and contaminated with shame associated with rituals when they are forced to perform, due to the avoidance of social contact. Some researchers believe that compulsive behavior is seen in OCD which is a type of behavior — for example caring for, caring for and paying attention to dangerous things — that comes out of normal control mechanisms through brain dysfunction. Behavior seen from OCD is a simple pathology as an example of natural behavior that tends to build and social practice routines. For example, people show culture for signs of transition or changing social status, for the diagnosis or treatment of diseases, for god-related recovery, or to guarantee the success of planting (Nevid et al., 2000).

According to Jones et al (2017), in OCD patients depression is a common comorbidity with an estimated lifetime rate of 62.7-78.2%. The high risk of suicide attempts, unprofessional ability, and increased severity of OCD symptoms among those with comorbidities are alarming. Although comorbid depression is both common and clinically important, this mechanism of uniformity is poorly understood. The most common view is that depression may arise as a result of impaired function of the chronic nature of OCD. Therefore, many researchers support that OCD symptoms should be given priority in treatment. According to Amalia (2019), the most common consequence of obsessive compulsive disorder is a negative effect on relationships with others, especially family members. And the antagonistic feelings experienced by those closest to you may be mixed with guilt because to some degree family members understand that compulsive obsessive-compulsive disorder really cannot stop itself from doing ridiculous things. Unwanted effects on others will eventually add to the negative consequences, leading to feelings of depression and total anxiety in obsessive compulsive patients and the onset of worse deterioration in personal relationships.

CBT as a construction in inventory to deal with obsessive compulsive disorder according to Hasim et al (2018) CBT trains individuals to identify thought patterns that affect their behavior and emotions which can then help them act more functionally. If clients can change their thinking, it will also change their beliefs about themselves, others and the world. CBT is known to be an effective approach in psychotherapy and more researchers have combined CBT with other approaches.

Purpose of Study

Purpose of the study is to measure an individual's tendency towards obsessive compulsive disorder. This OCD inventory is important to avoid if there are any OCD symptoms on a person. This study purpose is also to determine the validity value and face reliability, OCD inventory content like as mentioned so that the test measurement is valid to be used.

    a. To develop OCD inventory based on literature reviews.
    b. To obtain the validity value of OCD inventory through the professional panel's evaluations.
    c. To obtain the validity value on each subscales of OCD inventory through the professional panel's evaluations.
    d. To obtain the reliability value of OCD inventory through the Cronbach Alpha analysis.
    e. To obtain the reliability value on each subscales of OCD inventory through the Cronbach Alpha analysis.

Administration, Scoring and Interpretation of OCDI

The OCD inventory was used to measure the thinking level and repetitive behaviors on a person or to identify if there are any OCD symptoms. This inventory consists of 16 items with 2 subscales and each of the subscales have 8 items. The administration of this inventory only took 10 to 15 minutes only. The best situation to complete the inventory needs to be a conducive and comfortable place. Before the inventory administered, the instructions need to be delivered clearly to the respondents. The respondents need to answer every item honestly based on the statement that reflected themselves. The answers need to be circled in the answer sheet provided with a Likert scale of "Never, Sometimes, Often". The respondent was free to answer the statements based on their own perspective. They were also was informed not to worry to answer the questions. This is because there were no right and wrong answers. This inventory answer form used a Likert scale which either choose Never, Sometimes and Often. For the scoring method, 0 gives the value as "Never", 1 gives the value as "Sometimes" and 2 gives the value as "Often". As for the analysis and score interpretation, the OCD inventory was divided into three level which are the highest level presented with a score of 7 until 10, the moderate level is 4 until 6 and the lowest level is presented with a value of 0 until 3. These scores show the level of OCD faced by a person. If the person has a low score, it means that he does not have an OCD disorder.

Method of Study

The method of this study is a descriptive study. This descriptive study was used to get the validity and reliability of OCD inventory based on the past researches. This study consists of three phases:

Phase 1: The development of OCD inventory
Phase 2: Obtain the face and content validity
Phase 3: The reliability analysis

Phase 1: The development of OCD inventory

The development of OCD was produce based on a deep literature review from the past researches and a propriate model used. Based on the suitability, the theory chosen is the Cognitive Behavioral Therapy by Aaron Temkin Beck (1976).

Phase 2: Obtain the face and content validity

In this stage, when the items of OCD inventory were developed, the OCD inventory had distributed to 6 professional panels to assess and evaluate the inventory in the terms of content accuracy. The professional panels included was a counselling teacher, 3 university lecturers and 2 counsellors. Next, the researches had prepared a complete copy of OCD inventory containing the introduction and enhancing manual of the inventory. The scoring scale for the assessor is 10 which 1 (strongly disagree) and 10 (strongly agree).

Phase 3: Reliability analysis

The third phase was applied to get the analysis on reliability value on the OCD inventory. When this inventory already has the content validity, then it will be distributed to 60 undergraduate students under counselling program to get the reliability value of the inventory. All of the respondents were able to answer all of the questions completely. Then, the questionnaires will be collected by the researchers. The Statistical Package for the Social Sciences (SPSS) will be use to analyse the data collected in order to get the Cronbach Alpha value for this inventory.

Subject of the Study

The study subjects were only involved in phase 2 and phase 3. In this stage, there are 6 professional panels will provide the content validity of the inventory. In phase 3, a total of 60 undergraduate students from the counselling department were chosen as a data to get the reliability value of the inventory.

Research Findings
Result Phase 1: Development, Subscale and Items of OCD Inventory

The development of OCD inventory was based on the literature reviews on the definitions, concepts and OCD disorder symptoms. The references used was articles, local and international journals and also books. Based on the OCD inventory, it contains 16 items that was divided into 2 subscales whereby each subscale has 8 items.

Result Phase 2: Content Validity Value of OCD Inventory

The result of the study shows that there are comments given by the professional panels. Overall, 6 professional panels were chosen to give a positive feedback towards the items provided. All of the professional panels view and opinions will be referred for the researcher to make an improvement on the items to get a better reliability result. The comments and views from the professionals were shown on the Table 1 below:

Table 1: Comments and Opinions on Improving OCD inventory validity value

Panels	Opinions and Comments
Panel 1	Item 2, 4, 5, 6, 8 need to be explained specifically
Panel 2	Item 5 not really clear
Panel 3	Change the item number 8 because it does not resemble a repetitive behavior
Panel 4	Please change the item number 5 and 8. The behavior does not explain the correct compulsive behavior.
Panel 5	-
Panel 6	-

Based on the comments and suggestions above, the researcher had rechecked the items and made an improvement. There are items that was accepted and there are also items that were not accepted by the panels. Overall, the professionals had agreed that the OCD inventory can measure the thinking level and repetitive behavior of a person. Based on Konting (1998), the validity of an instrument refers to how long the instrument can be use in measuring the data needed to achieve the objective of the study.

Table 2: Content Validity Value on Total and Subscales of OCD Inventory

Scales / Subscales	Items	Percentage (%)	Professional Evaluation
Total OCDI	16	(56.2 %)	Acceptable
Subscale 1: Obsessive Thoughts	8	(64.7%)	Acceptable
Subscale 2: Compulsive Behaviors	8	(63.8%)	Acceptable

Table 2 shows the total content validity value of the OCD inventory which is 52.6%. Meanwhile the highest content validity value is 64.7% in subscale 1, obsessive thoughts and the lowest value is subscale 2, the compulsive behavior with 63.8%. This shows that the OCD inventory have a moderately high validity value.

Result Phase 3: Reliability Value of OCD Inventory
Third phase was held to provide the reliability value of the OCD inventory. The data obtained from the pilot study was analysed by using the Statistical Package for the Social Sciences (SPSS) version 22.0. Based on Creswell (2010), he mentioned the Cronbach Alpha value for all of the items and subscales were based on the theory as stated by Valette (1997), the least reliability value is 0.50. Konteng (1998), emphasized a moderately acceptable Cronbach Alpha value is 0.60 – 0.80 and the highest value is 0.80 and above. The Cronbach Alpha value on the subscales and overall OCD inventory were shown in Table 3 as below:

Table 3: Reliability value for Total and Subscales of OCDI (n = 45)

Scales/ Subscales	Items	Cronbach Alpha Value	Interpretation
Total OCDI	16	0.721	Moderately High
Subscale 1: Obsessive Thoughts	8	0.615	Moderately High
Subscale 2: Compulsive Behaviors	8	0.624	Moderately High

Significant level of 0.5

Overall, the reliability analysis for OCD inventory shows that the Cronbach Alpha coefficient value is moderately high, 0.721. This shows that the OCD inventory had a good reliability and proves that it can be use by the counselors. As for the subscales, the subscale 1 on Obsessive Thoughts gives a value of 0.615 and for subscale 2 on Compulsive Behavior gives the value of 0.624, both of the subscales show a moderately high value of reliability. Next, Table 4 shows the analysis on each of the item reliability value.

Table 4: Reliability Value of Each Items

No.	Items	Cronbach Alpha	Interpretation
1	I think that my actions were perfect	0.731	Moderately High
2	I always think of dirty things	0.732	Moderately High
3	I want to clean up everything that is disorganized	0.711	Moderately High
4	I always thought that my family were not safe going outside the house	0.688	Moderately High
5	I always felt that the things I have is not good	0.703	Moderately High
6	I want to organize everything based on their colours	0.719	Moderately High
7	I will make sure everything was arranged based on their categories	0.709	Moderately High
8	I always have the same thoughts repeatedly	0.693	Moderately High
9	I always washed my hands a few times even though it is clean	0.710	Moderately High
10	I always wash the clean dishes a few times	0.725	Moderately High
11	I will check on the house condition at all times	0.706	Moderately High
12	I will use a liquid disinfectant every time I touch something	0.708	Moderately High
13	I hide the scars of my body	0.722	Moderately High
14	I repeatedly corrected the writing I had already written	0.708	Moderately High
15	I arrange things over and over again in the same place	0.709	Moderately High
16	I don't like staying in other people's house	0.702	Moderately High

Level of Significant 0.05

Based on Table 4, the reliability value of the items shows a moderately high level. After a few changes on some items that was complimented by the professionals has make the reliability value fulfilled the development of OCD inventory items. This has in line with the opinion by Konting (1998), mentioned that the reliability value more 0.60 and above is better and can be accepted.

Discussion and Suggestion

This research has given a big impact on psychology and counselling field in Malaysia. The result of the study shows that the OCD inventory has a high value of validity and reliability which makes this inventory can be used in a counseling session by a counselor and a counseling practitioner. This study also proves that OCD inventory can measure an individual's level of OCD. In addition, Malaysia is still lacking in the development of instrument and research to test the mental health level such as OCD. With the development of this inventory, it could help counseling organizations and counselors to identify the level of OCD of a patient. The importance to understand this mental health issue was mentioned by the founder of Cognitive Behavior Therapy theory, Aaron Temkin Beck in 1976. Next, even though the

inventory can measure and identify the level of OCD, it is recommended for a further study to improve this questionnaire in the future. Therefore, a further testing on the inventory is needed to make it more quality and can be use widespread for various parties with a direct or indirect counseling services. The OCD inventory can also be the basis for development of new inventories to measure the level of mental disorder of an individual especially OCD. It is very important to ensure that the problems faced by the client, as a counselor can determine an appropriate action to address the client's problem. A further research should also be conducted by future researchers to make a more detailed statistical analysis with the items in this inventory. This is because it can produce a more robust and stable version of OCD inventory. As the current inventory had produce a high value of reliability, it is also recommended for a further study to be done by a counselor towards the community and not limited to any specific groups.

Conclusion

This research had successfully developed an inventory on Obsessive Compulsive Disorder based on the Cognitive Behavior Theory (CBT) founded by Aaron Temkin Beck (1976). Every item in this inventory have a high reliability and validity value. This have proved that this OCD inventory can measure mental disorders especially OCD that will be use and tested by counselors, a counseling teacher and university students.

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