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REVIEW OF COMPUTERIZED COGNITIVE BEHAVIOURAL THERAPY BASED ON CULTURE CENTERED DESIGN FOR SUBSTANCE ABUSE IN MALAYSIA

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ABSTRACT

Addiction is an activity that includes video games, internet, gambling and substance abuse such as drugs, cigarettes and alcohol. These symptoms had spread among adults, adolescents and children. The phenomenon could be resolved through various approaches in the area physiological therapies such as Cognitive Behavioural Therapy (CBT). CBT plays a vital role, whereby it is a face-to-face therapy between patient and counsellor that treats emotional and physical health conditions. The advancement of information technology has spawned new innovations for therapy using computer known as Computerized Cognitive Behavioural Therapy (CCBT). The central issue concerning CCBT focuses on the patient's continuous engagement throughout entire therapy. It is known that continuous engagement in using CCBT is dependable on the patient's cultural background. Indirectly, it proves the existence of factors that influence patient's preferences and engagement towards CCBT. Therefore, designing appropriate design interface based on Culture Centred Design (CCD) in order for patient to sustain their engagement level towards CCBT is essential. Furthermore, patients also fail to complete the therapy due to the lack of interest and focus, resulting in disengagement towards CCBT. Various engagement models and theories on developing cultural based interface for CCBT was discussed. Therefore, research aims to review literatures, identify factors that prone to provide continuous engagement CCBT interface which would trigger and guide future research works.

Keywords: Continuous engagement; engagement; interface; CCBT; substance abuse.

INTRODUCTION

Depression can be referred either to a mood or clinical syndrome that involves emotional, cognitive and behavioural symptoms (Oltmanns and Emery, 1998). Depression is categorized as common mental health disorders (CMHDs) that occurs in various ages and sexes (WHO, 2013). According to American Psychiatric Association, depression is considered as mental health disorder that may harm patient in term of emotionally and physically (APA, 2013). A person with mental disorder could confront with violence, suicide and substance abuse including alcohol and drugs (Adlina et al., 2007). Addiction is an activity that causes an individual to be addicted to drugs, gambling, cigarettes, alcohol, video games and internet (Chiauzzi and Gammon, 2012). An addict who reaches pleasure through addiction of substance could continue to be extreme, immoral and irresponsible.

Addicts or patients who faces substance abuse can be treated with various methods of therapy. Therapies such as Cognitive Behavioural Therapy (CBT) focuses on improving the behaviour for patients with substance abuse issues. The advancement of Information Technology has triggered the emergence of Computerized Cognitive Behavioural Therapy (CCBT). CCBT increases patient empowerment and reduces stigma. Furthermore, CCBT hinders patient dropout and ensures completion of therapy.

Thus, CCBT should engage patients to complete their therapy. The emphasis on engagement and patient involvement is the main research issue in the area of CCBT (Chow et al., 2018; Shepherd et al., 2015). Due to lack of engagement, dropout occurs, and patients are unwilling to complete the therapy (Rost et al., 2017). Previous studies emphasize on deficiency of engagement due to CCBT's interface that lack of local context (Mokhtar & Anuar 2015) whereby it could reduce patient's engagement and increase dropout. stressed on. Ibharim, Zaki, and Yatim (2015) stressed on interaction that plays a vital role in ensuring patient's improvement and development in cognitive, emotion, social and physical aspects. Therefore, optimizing the effectiveness of appropriate interface design result to provide better user interaction (Yin, Ali, and Noah, 2016). This article reviews CCBT's usage and explore the patient's challenges in term of continuous engagement towards CCBT. It aims to summarize previous literature and identify derived factors that influence continuous engagement towards CCBT. Thus, this article contributes to the literature accentuate actions that researcher, service providers and developers can consider to increase patient's engagement towards CCBT.

MULTICULTURAL SOCIETY IN MALAYSIA

Variety of Malaysian population were discovered since early century of Malacca Sultanate period (Kim, 2009). The strategic geographical location of Tanah Melayu situated along the trade routes of South East and Far East attracted numerous travellers. Furthermore, Tanah Melayu was filled with rich resources that lured entrepreneurs in exchanging their good (Ahmad and Ahmad, 2009). However, change of cultural structure was not altered by immigrants during this time (Ongkili, 1985).

Instead, during British colonial policy period, the concept of divide and rule were started, that eventually triggered the existence of multicultural society (Kim, 2009). The great transformation in Malaysia history occurs during this period where vast scales of foreign workers were brought in from India and China. Indian immigrant became laborers in rubber plantation while Chinese became laborers in tin mines (Embong, 2007). As a result, the migration of workers shift the indigenous Malay population to the multinational and multicultural society, that mainly consist of three main ethnic groups which are Malays, Chinese and Indians as illustrated in Figure 1 (Roslan, 2001).

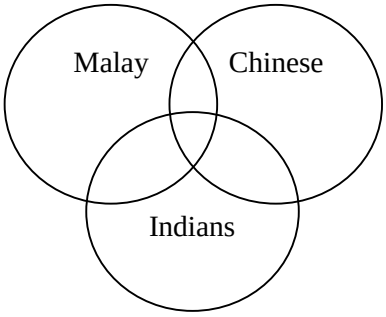

FIGURE 1. Multicultural society in Malaysia

Multi society or multicultural society is firstly introduced by J.S. Furnivall to define a society that were separated by race, institutional and cultural patterns (Dhaouadi and Abraham, 1997; Furnivall, 1939). Immigrants migrated as workers to Tanah Melayu brought along their heritage, belief, ritual and religious.

They started their families and generated heterogeneous Malaysian culture when each group tends to socialize in their own communities and are free to practice their own culture.

Thus, this makes Malaysia, an emerging country with diverse background of the socio-culture. Pluralistic society which was initially started as immigrant workers shift towards building a multicultural society in Malaysia (Noor, 2009). Living in this peaceful country, mutual respect prevails among people of different cultures and religions (Othman, 2004).

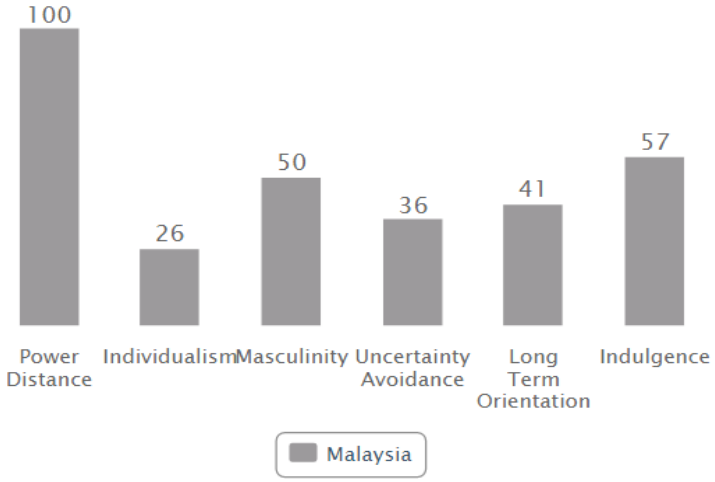

FIGURE 2. Malaysian Culture through the lens of Hostede 6-D Model©

Eminent scholar in cultural studies conducted a comprehensive study regarding dimension in workplace through the establishment of 6-D Model (Hofstede et al., 2016). Hofstede explores Malaysian culture against the dimensions of 6-D Model. The six dimensions are shown in Figure 2, which are power distance, individualism, masculinity, uncertainty avoidance, long term orientation and indulgence. These dimensions are discussed below.

POWER DISTANCE

In the first dimension, Malaysia scored tremendously high. Indication shows that people in this country approve the acceptance of hierarchical order which everyone has a place and further justification is unnecessary. The result shows that in Malaysia, hierarchy in an organisation causes existence of dissimilarities, domination, underlings following orders and autocratic leadership.

INDIVIDUALISM

Individualism dimension scored low, shows that Malaysia is a collectivistic society. Obviously, Malaysian favour intimate long-term commitment towards an organisation. Devotion in collectivistic culture is dominant and address most other societal rules and regulations. Such a society fosters strong relationships, where everyone is responsible towards their associates and group members.

MASCULINITY

This dimension fails to be determined, obviously due to an intermediate score of 50.

UNCERTAINTY AVOIDANCE

In this dimension, Malaysia scored 36 and thus has low preference for avoiding uncertainty. Result shows that Malaysian societies preserve calm attitude, whereby, would rather tolerate deviance and prefer to learn more easily.

LONG TERM ORIENTATION

In this dimension, Malaysia scored 41 which shows that Malaysian practice normative culture. Malaysian have a firm concern with establishing the absolute truth and their thoughts are normative. They are honoured towards traditions, small propensity to save for the future, and emphasise on achieving instant results.

INDULGENCE

Indulgence plays an important role, scoring 57 in this dimension. Malaysians are categorized as an optimistic society that enjoy and appreciate life. They have a tendency toward finer things and emphasize on leisure in their life.

COGNITIVE BEHAVIOURAL THERAPY

CBT is a structured face to face therapy develop by Wolpe and Beck for patients suffering from psychological disorders (Beck et al., 1979; Wolpe, 1958). CBT focuses on the importance of behaviour in influencing the thoughts and emotions. A variety of cognitive and behavioural techniques and principles are employed in CBT. The main principles of CBT focuses on the emotions and behaviour that influence patient's way of thinking (Beck et al., 1979). Cognitive techniques are used to identify and test the reality of the patient's maladaptive assumptions (Beck et al., 1979). According to study by Beck et al. (1979), the main goals of CBT are:

1. teaches patients techniques to monitor the negative thoughts automatically,
2. identify the relationship between cognition, affect and behaviour,
3. observe the evidence for and against the automatic thoughts and replace reality-oriented interpretation, and
4. identify and change dysfunctional core beliefs.

Behavioural component of CBT includes techniques such as activity scheduling that change the negative attitudes that inhibit the activity level of patients (Beck et al., 1979). CBT focuses on the present, rather than the events that happened in the past. CBT remains a recommended treatment option for treating CMHDs (NICE, 2014). However, CBT approach could cause stigmatizing feelings towards counsellors (Foroushani, Schneider, and Assareh, 2011). Hence, CBT approach has spawned involving Information Technologies to provide better methods of delivering therapies to the patients. Nordin and Hassan (2018) emphasised, perception towards technology adaptation has made it necessary to provide the latest tools to facilitate patients.

COMPUTERIZED COGNITIVE BEHAVIOURAL THERAPY

Technological advantages in CBT expanded to provide convenience to patients. CCBT approach includes interactive computer interface, computer program or internet to support undergoing treatment for depression between appointments with counsellors (Kobak et al. 2015; Löbner et al. 2018). It uses self-monitoring method that includes CBT elements to guide self-reflection of a patient. CCBT can reduce patient's waiting time, arranged according to their own time, avoid stigma towards counsellor and no need to take time off (Andrews, 2010).

CCBT offers a wide range of potential benefits including improved, readiness and consistently effective treatment that can be carried out at patient's own pace. Previous studies proves that CCBT benefits patient's with anxiety and depression problems (Foroushani, Schneider, and Assareh, 2011; Marzuki et al., 2017) and had shown significance results (Andersson and Cuijpers, 2009; Cuijpers et al., 2009), but relatively few have focused on the

effects of continuous engagement towards CCBT (Alemagno and Kenne, 2010; Yusof and Riaza, 2014). Study by (Cavanagh and Millings, 2013) develop '4 Ps' model that stressed on four factors: person, program, problem and provider. The model highlights researchers, service providers and developers on the importance of continuous engagement towards CCBT. However, the model fails to emphasize in-depth influence of engagement on local context.

ENGAGEMENT

Various studies on engagement were explored to measure the level of individual's involvement and commitment. Fuller (2009) produced group engagement model to establish the prestige of the organization. According to the study, the employer shows appreciation through rewards and recognitions of an employee's engagement towards organization. National Survey of Student Engagement (NSSE) at Taiwan's local universities (Hu, Ching, and Chao, 2012) whereby NSSE model was adapted to Taiwan's national dataset and named the survey as Freshman Junior Student Survey (FJSS). Therefore, the above study aims to develop Taiwan Student Engagement Model (TSEM) based on adaption of NSSE model. Studies by Fuller (2009) and Hu et al. (2012) explores the engagement of individuals who comprise of employees and students within organization on measuring the quality of engagement in term of achieving success. This proves the desire to achieve success would cause individual's continuous engagement.

Studies on engagement towards technologies also exist to measure the involvement of individual. For example, study conducted by O'Brien and Toms (2008) developed a conceptual framework derived from a qualitative study. Semi-structured interviews were conducted to explore user's perceptions about the engagement towards technology. The results indicate engagement that pertain user and system is influence by the application's interface. Study by Attfield (Attfield et al., 2011) produced a framework consists interface design guidelines for measuring the engagement of users towards front-end web technology. Indirectly, user's engagement is crucial to the success of an application.

Both studies O'Brien & Toms (2008) and Attfield et al. (2011) are similar in term of producing a framework to evaluate the user's engagement towards interface. Users who managed to fully engage themselves towards technology will not disengage or dropout. Hence, key factor to prevent disengagement and dropouts is to provide an attractive user interface towards technology. Therefore, relevant derived factor from previous research works are applicable to ensure continuous engagement towards CCBT.

DROPOUT

CCBT approach requires patient to interact with computer interface continuously until end of the therapy. Therefore, patient's continuous engagement to CCBT is crucial to ensure the success of therapy and the avoidance of dropouts (Barazzone, Cavanagh, and Richards, 2012; McLellana et al., 2008). Issues that arise regarding patient's dropouts are caused by technology illiteracy, failure and relieve symptom. CCBT plays an important role for patient's success throughout therapy. Interface of CCBT should be attractive because interface serves as mediator between patients and counsellors (Neri et al., 2012). Therefore, patients who continued to engage with CCBT would definitely avoid dropouts (Barazzone et al., 2012; McLellana et al., 2008). Indirectly, successful recovery of patients throughout the therapy depends on their involvement towards CCBT. Therefore, CCBT interface that consist elements of local context plays an important role to encourage ongoing engagement (Shepherd et al., 2015). Thus, patient's culture background affects the continuous engagement towards CCBT.

Element of local context are prone to increase continuous engagement towards CCBT (Mokhtar and Anuar, 2015). A study by previous researcher developed a CCBT with an interface based on cultural background (Shepherd et al., 2015). Their study produced CCBT interface to provide therapy for indigenous adolescents. The argument by this researcher provided an insight on the importance of developing a CCBT interface that considers patient's cultural values.

For the past 25 century, Asians and European culture had very different ways of understanding the world around them (Nisbett, 2004; Nisbett et al., 2001). Every culture has different ways of adapting technology. Information and communication technology are amongst the fastest growing area in the world whereby application of a standardized interface posed usability problems for users of multi-culture. In this situation, the need of discovering new perspectives of user-interface design, which is the main challenge of designing CCBT in accordance to Culture-Centered Design (CCD). In the recent years, studies regarding local content cultural factors in interface design and usability were explored (Rusdi, Fadzilah, and Noor, 2017). Investigation on culture impacts on web design among Germany, Great Britain, and Greece was conducted (Burgmann, Kitchen, and Williams, 2006). Although these are all western countries, cultural differences exist on the websites. The author discussed the results in four dimensions of culture: power distance, uncertainty avoidance, masculinity and individualism (McSweeney, 2002), which are not cognitive dimensions. Noiwan and Norcio (2006) proclaims that effects of animated graphic colors on attention and perceived usability of users from two cultural groups, American and Thai. Thus, reviewed related studies in this article emphasized on influences of culture on overall performance, retention, and self-reports on usability, regardless of differences in banner color combinations. Furthermore, cultural differences in certain group of users is reflected on the banner design, as an example for usage of colors.

Cultural differences in cognition, perception, personality and other psychological model such as power distance, uncertainty avoidance, masculinity, individualism, long term orientation and indulgence (De Mooij and Hofstede, 2010) are influential factors in developing continuous engagement model for CCBT. The researchers in human computer interaction, psychology and culture has discovered the importance of considering cultural factors while developing CCBT programs (Du, Quayle, and Macleod, 2013; Hatami Kaleshtari et al., 2016; Yiwen and Guobing, 2007).

MATERIAL AND METHOD

Table 1 demonstrates the procedures of selection of relevant literature. Approach used by Lee et al. (Inseong Lee et al., 2010) was applied to search the relevant literature.

TABLE 1. Procedure of selection

Procedures	Clarification of procedures
Article selection	Search articles associated with the cultural interface design research.
Interface Element Selection	Search prominent interface element to be utilized in the study.
Cultural Interface Element Characteristic	Specifying of the characteristic for every selected interface element.

ARTICLE SELECTION PROCESS

Determining the elements of interface design that solicited with the various cultural backgrounds, twelve research articles were explored thoroughly. Criteria selecting research articles are based as follows:

- Articles between 2004 – 2018: Various research articles are selected via scholarly journal databases. Comparison of these article is crucial in order to discover trend of cultural based research in the area of CCBT interface design elements.
- Differences in CCBT culture-based interface design: The articles are further explored by only including research that focuses on interface design that are aimed for various cultural background.
- Keyword search: Several keyword searches were used while browsing for articles to control the searching process; continuous engagement, engagement, computerized cognitive behavioural therapy, self-help therapy, CCBT interface, CCBT interface design, local user interface, interface design preferences and cultural user interface.

Strengthening such arguments for the importance of culture in developing CCBT, Table 2 illustrates studies carried out by previous researchers (Kondratova and Goldfarb, 2011) which focuses on cultural markers, interface design, attributes and engagement factors that can be mapped directly into culturally appropriate design elements. Indirectly, most cultural markers represent design elements that are commonly used to create CCBT interface.

TABLE 2. Culturally appropriate user interface design models

Model Name	Year	Model	Factors
Hall & Hall	1990	Cultural dimension models	High and low-context cultures
Hofstede	1990	Cultural dimension models	Power distance, uncertainty avoidance, masculinity, Individualism and time orientation.
Trompenaars & Hampden-Turner	1998	Cultural dimension models	Universalism, individualism, neutral/emotional, specific/diffuse, achievement, time and environment.
Khaslavsky	1998	Cultural dimension models	9 factor model derives combination from Hofsede and Trompenaars.
Barber and Badre	1998	Cultural marker models	Color, spatial organization, fonts, shapes, icons, metaphors, geography, language, flags, sounds, motion, preferences for text vs. graphics, directionality of how language is written (left vs. right), help features and navigation tools.
Smith et al.	2004	Cultural attractors model	Colors, color combinations, banner adverts, signs, metaphor, language cues and navigation controls.
O'Brien, & Toms	2008	Interface design attributes	Aesthetics, affective appeal, attention, challenge, feedback, goal-directed, meaningfulness, motivation, perceived control, sensory appeal.
Cavanagh, & Millings	2013	Engagement factors	Program, problem, person and provider factors.
Shepherd et al.	2015	Interface design and engagement factors	Engagement aid, skills, motivation, access, local interface design, language and simplicity.
Giordani et al.	2015	Engagement factors	Age, gender, socio-economy, environment and location.
Reynolds et al.	2015	Engagement factors	Awareness, management, support and comprehensive.
Yusof et al.	2014	Engagement factors	Game elements, aesthetic, experience, analysis and evaluation.

Research on engagement towards CCBT interface studies aims to develop novel methods that would ensure the completion of therapy thoroughly. Past studies emphasize on the engagement towards CCBT interface and identify factors that causes patients dropped out. A 4 Ps model was introduced to encouraged patients to have continuous engagement towards CCBT that consists four engagement factors: program, problem, people and provider (Cavanagh and Millings, 2013). The success of every patient to complete thorough therapy depends on their emotion and literacy using CCBT (Richards and Richardson, 2012). Even though 4 Ps model emphasize on the benefits for development of CCBT program and services, culture background was not highlighted.

Research by Shepherd et al. (2015) developed a depression treatment program in the form of computer games for young indigenous adolescents that resembles common features of CCBT. Smart, Positive, Active, Realistic, X-factor thoughts (SPARX) is a CCBT prototype implemented amongst indigenous adolescents. SPARX interface reflects the indigenous culture of the country. Amongst the uniqueness of SPARX's interface are gamification, cultural symbols, cultural character, artwork and language. Thus, by exhibits local culture on SPARX's interface that look appealing, indigenous adolescents felt elated to carry on until the completion of therapy. Shepherd et al. studied interface design to look appealing that comprises culture background which represent one particular country only.

According to Jaeggi et al. (2011) motivation and success of CCBT program may not be effective against patients from different cultures. Another study applied Brain Powered Games (BPG) for cognitive training and rehabilitation of children in Uganda, Africa (Giordani et al., 2015). They claim that application of BPG for CCBT for children in the context of rural Uganda whereby emphasize was given on the interface design that focuses on children environment, local Ugandan objects and motives.

REVIEW AND DISCUSSION

In this article, several factors were derived: engagement, dropouts, culture and CCBT interface. All four factors emphasized on importance of providing interface that encourage patient's success in CCBT. These factors would guide future CCBT developers and providers to produce engaging interface design that ensures completion and eliminate dropout throughout the therapy.

CCBT therapy has been studied since the 1960s began to be used as a reference for researchers to provide the best therapy to patients (Mauldin, 1994). Result from investigation by previous researchers in the earlier section has been analysed in this section as illustrated in table 3. The obtained factors are later to be explored and will be considered in future studies.

TABLE 3. Factors obtained

Factors	Fuller et al. 2009	Hu et al. 2012	O'Brien, & Toms 2008	Attfield et al. 2011	Cavanagh, & Millings 2013	Shepherd et al. 2015	Giordani et al. 2015	Reynolds et al. 2015
Engagement	✓	✓	✓	✓	✓	✓	✓	✓
Dropouts			✓	✓	✓	✓	✓	
Culture						✓	✓	
Interface			✓	✓	✓	✓	✓	

CULTURAL MODEL AND CULTURE-CENTERED DESIGN

Two main topics discussed in this section comprises of Cultural Model and Culture-Centered Design (CCD). The discussion focuses on critical review of prominent cultural models and research evolution in the area of CCD.

CULTURAL MODEL

Substantial amount of literature has depicted that cultural models has been used to define differences among group of people from various geographical location which influence their conceptualization toward certain stimuli (Clemmensen and Plocher, 2007; Nasir, Mohd Ariffin, and Muslihah Shuib, 2010). However, by intent or default, effort on cultural background research would attempt to focus on cultural dimension through empirical study. The importance underpinning of every research relies on the definition of cultural model which comprises various culture variable measurements. Among the models, three cultural models were discussed meticulously in literature are mentioned by Hofstede (Hofstede, 1997), Trompenaars & Hampden-Turner (1998) and Hall (1966). The above models were developed in 1990s that provided many aspects of culture-based research (Young, 2008).

According to Hall (1990) communication can be a mechanism to determine the diversity of people. The way of communication whereby everyone transmits, process and receive the information varies among diverse group of people. Besides that, nonverbal communication, either the way people behave or use certain material mostly through their interaction processes also differs among diverse group of people. High Context and Low Context culture are the most cited dimensions in these studies.

Proportionate to Hofstede (1997), he is one of the pioneer in cultural research. Hofstede differentiates the culture by using quantitative study among international worker of an organizations according to countries using cultural dimension. Scores were given in accordance to index for every dimension based on the nationality of the workers. Initially only four dimensions was built; Power Distance, Uncertainty Avoidance, Gender Role Identity and Collectivism Individualism.

Meanwhile, Trompenaars & Hampden-Turner (1998) emphasized on discovering the differences through observation on how people could solve problem in three different key area; relationship, environment and time. Objective of their study is to assist manager in collaboration and communication. Trompenaars & Hampden-Turner's study had discovered the measurement by using seven dimension of cultural model.

Apparently, the models discussed in the previous paragraph emphasized that culture was always regarded as major contributing factor to the existence of diversity among people which comprise their subjective feelings and behavior. Various numbers of dimension were developed by the researchers as a measurement of diversity among people. On the other hand, several dimensions shared certain similarities across discipline in disregard to the domain of the study. For instances, High Context/ Low Context Cultures (Hall, 1966) have similarities with Power Distance and Collectivism Individualism (Hofstede, 1997). Sequential Synchronic, Time Orientation and Polychromatic show dimension relating with the passage of time.

CULTURE CENTERED DESIGN (CCD)

Pass two decades, Hofstede (1997) discovered cultural dimension as a variable to measure the psychological differences among people. Hofstede argued that differences occurred when a group of people living in different context resulting their contrasting cultural trait. Since then abundance of studies has been conducted to identify the differences and similarities comprising several level of cultural attributes (Burgmann, Kitchen, and Williams, 2006; Noiwan and

Norcio, 2006). Cross cultural study involves seeking differences between two or more different countries or region (Alostath et al., 2011; Olaverri-Monreal and Bengler, 2011), meanwhile, inter cultural level involves finding difference within single country (Chiu et al. 2012; Shen, Woolley, and Prior, 2006). Since then, various studies related to culture for interface design have been extensively explored. Smith et al. (2004) develop cultural attractor to identify similarities between eastern and western culture. Whereas, Jagne & Smith-Atakan (2006) discover prominent interface design between four region, while, Chiu et al. (2012) discovered differences interface design of websites in China.

Nature of people reaction to certain stimuli that impress their attention is important in studies regarding culture. Culture plays significant role in promoting positive stimuli toward human brain (Ford and Kotzé, 2005). Consequently, self-actualization which is the highest peak of Maslow hierarchy of human need will be realized when precise stimuli trigger spontaneous thinking (Yiwen and Guobing, 2007). More importantly, cultural based interface design will increase human thinking process and reflected through their behavior.

Culture centered design (CCD) is a comprehensive study of user cultural background that ensures usability of interface design. Investigation on user culture, background and context are bound together due to the characteristic of culture which is not appropriate to different setting (Lee et al., 2010). Therefore, various studies on CCD is increasing recently. Due to this motive, various studies on CCD are increasing. Various terminologies were introduced by researchers describing the differences, whereby Shen et al. (Shen et al., 2006) studied the choices of metaphors in Taiwan. Since then the term has been rigorously utilized in literature (Veer, 2011; Yiwen and Guobing, 2007). Another study by Burgmann et al. (Burgmann et al., 2006) was aimed at finding difference aspects of interface design between the three country web sites in line with associated cultural dimensions. Although many researchers recognize the concept of culture, however, the mechanism to find differences remain questionable for researchers in different contexts.

CONCLUSION

Generally, substance abuse is related to common mental health disorders. Addiction to substance is dangerous which can be overcome through proper therapy. The modern information technology had evolved to improve CCBT for patients that confront with substance abuse. CCBT program still retain CBT's elements which provides therapies at the patient's convenience, as study show by Gang et al. (2017) emphasised that tool for therapy that can be conducted at home and any time convenient to the patients. However, issues on patient's engagement to CCBT need to be address to avoid dropouts.

In this article, factors that causes the existence of issues, related to engagement, dropouts, culture and CCBT interface are identified. Ensuring patient's engagement, interface of CCBT should be relatively attractive for patients to undergo therapies completely. Providing proper CCBT interfaces is crucial to overcome patient's dropouts, as emphasised by Siti and Tengku (2016) whereby critical success factor of interaction, relies on usability at the utmost level. Therefore, designing appropriate CCBT design interface is essential. Based on the arguments from previous studies, developing an engaging CCBT interface requires understanding of the patient's cultural background and CCD. Finally, the discussion and review as presented in this article on related research works regarding continuous engagement towards CCBT based on culture centred design for substance abuse relapse prevention would assists and trigger future research works among researchers, service providers and developers.

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