

THE EFFECT OF INDIVIDUAL PSYCHOEDUCATION INTERVENTION ON SELF EFFICACY AMONG OPIOID DEPENDENT PATIENTS IN METHADONE CLINICS

^{*1}Engku Mardiah Engku Kamarudin, ²Wan Shahrazad Wan Sulaiman, ³Norulhuda Sarnon
@Kusenin & ⁴Aizan Sofia Amin

¹ Pahang State Health Department, Bandar Indera Mahkota, 25582 Kuantan, Pahang, Malaysia.

^{2,3,4} The National University of Malaysia, 43600 Bangi, Selangor, Malaysia.

*Corresponding author: engkumardiah@moh.gov.my

Received: 1 Nov 2019

Accepted: 4 May 2020

ABSTRACT

Background and Purpose: The present study is designed to evaluate the effect of individual psycho-education intervention based on integrated self-awareness and self-determination theories (i-SEAZ) toward self-efficacy among opioid-dependent patients in methadone treatment (MT).

Methodology: 75 opioid-dependent participants who were on MT under Ministry of Health Malaysia from five Methadone Clinics in Klang Valley were evaluated on the effectiveness of the i-SEAZ intervention. The experiment group comprised 38 participants, who received ten sessions of individual i-SEAZ alongside MT, while 37 participants of the control group only received MT. The effectiveness of the intervention was assessed by the General Self Efficacy Questionnaire (GSE), with ten items. The assessment was performed two times; the first was two weeks before the initiation of i-SEAZ (as pretest), and the second was two weeks after i-SEAZ was completed (as posttest).

Findings: The extracted data were analysed by ANCOVA using SPSS-20. The findings showed there was a significant improvement in the i-SEAZ scores between experiment and control groups at posttest ($p = 0.000$). It is concluded that the intervention of i-SEAZ is associated with a significant increase in self-efficacy among substance-dependent patients in Methadone Clinics.

Contributions: This study is hoped to contribute to the psychologists and counselors at addiction clinics, treatment institutions and communities in adopting the i-SEAZ module to improve self-efficacy among patients in substance abuse treatment.

Keywords: Methadone treatment, psychoeducation, self-efficacy, self-awareness theory, self-determination theory.

Cite as: Engku Kamarudin, E. M., Wan Sulaiman, W. S., Sarnon, N., & Amin, A. S. (2020). The effect of individual psychoeducation intervention on self-efficacy among opioid dependent patients in Methadone clinics. *Journal of Nusantara Studies*, 5(2), 103-128.
<http://dx.doi.org/10.24200/jonus.vol5iss2pp103-128>

1.0 INTRODUCTION

Drug addiction has been defined as a health problem related to the brain (Volkow, 2014). This has led to further development in the role of the medical in curing addiction among drug addicts. The Ministry of Health Malaysia (MOH) through harm reduction program has introduced the Medical Assisted Therapy basically to prevent the spread of HIV infection in Malaysia (Ali et al., 2018; Mukherjee et al., 2017; Mohamed & Marican, 2014; Reid, Kamarulzaman, & Sran, 2007). The MOH found that the main contributor to HIV infection was through the sharing of contaminated needles among drug addicts. To address this epidemic, the MOH through a two-pronged strategy has proposed the Methadone Treatment Program (MTR) in treating opioid drug addiction. The program aims at reducing the spread of HIV, and Hepatitis B and C infections among injection drug abusers (IVDU - Intravenous drug users) through the sharing of contaminated needles (Ministry of Health Malaysia, 2012). MTR is a long-term treatment similar to most other health care treatments such as diabetes and hypertension. MTR is an outpatient treatment, in which patients can live in the community as usual, but they need to go to the hospital daily to get methadone medication and other psychosocial programs (Ministry of Health Malaysia, 2016). Numerous local studies have reported the efficacy of methadone treatment especially in terms of improving the quality of patients' life in four domains namely physical, psychological, social and environmental (Premila Devi, Azriani, Zahiruddin, Mohd Ariff, & Noor Hashimah, 2012; Malini, Shamsudin, & Wahab, 2018; Baharom, Hassan, Ali, & Shah, 2012; Ali et al., 2018; Ramli, Zafri, Junid, & Hatta, 2012).

However, stated as the findings of the study, the number of participants who completed the entire MTR in the proposed period is minimal (Cheong, Vaughan, Lau, & Gonzalez, 2019). Other local studies have also found that many patients have dropped out of treatment, while patients still undergoing treatment will continue MTR for a very long time (Othman & Gani, 2017; Shakira, Sarimah, & Norsa'adah, 2017). The findings of the study conclude that the retention rate in treatment is low compared to the growth of MTR in Malaysia. In addition, the survey by Almeman, Ismail, and Mohamad (2017) reported that craving and drug-seeking behaviour were still prevalent among patients at four Methadone clinics around Kuala Lumpur despite their ongoing treatment. On the other hand, Banazadeh, Abedi, and Kheradmand (2009) were of the view that the total cessation program is unsuccessful as more attention has been given to this harm reduction program. This finding showed that the therapeutic approach to this drug could be improved by strengthening the psychological approach to make the recovery process faster and more effective. This view has been argued previously by Curran and Drummond (2007) and Moss (2007) that the use of psychological approaches including psychosocial interventions was found to be effective in treating and assisting the patients, in particular involving dependence on alcohol, stimulants, cannabis and opiate. This statement indicates that psychological factors, especially intrinsic factors, contribute to relapse addiction. In fact, Melemis (2010) has pointed out that medical practitioners must take into account the intrinsic factors in treating and rehabilitating those involved in drug problems through three stages of the challenge, namely the importance of motivation to change, the change in behaviour to abandon the drug and the desire to maintain recovery. Moreover, factors of patient readiness to manage defense mechanisms during the early stages of healing have also been identified as factors in relapse billing (Halim & Sabri, 2013).

According to Reed et al. (2019), to ensure better patient readiness, self-efficacy plays a vital role in drug rehabilitation programs. There is empirical evidence to suggest that there is a link between self-efficacy and crave (Ono et al., 2018), relapse addiction (Ibrahim, Kumar, & Abu Samah, 2011; Taghizadeh & Cherati, 2015) and program treatment outcomes (Franckowiak & Glick, 2015). A study by Taghizadeh and Cherati (2015) on 178 patients found a significant relationship between self-efficacy and age of first-time drug use, drug doses and delays in treatment, marriage, and career among drug abusers using syringe and needles in Methadone maintenance treatment. The study also found that there was a negative relationship between procrastination behaviour and self-efficacy. Furthermore, Dolan, Martín, and Rohsenow (2008) argued that the self-efficacy and motivation level of recovered addicts could be improved by reminding them of the importance of staying healthy and sober.

2.0 LITERATURE REVIEW

Self-efficacy was first introduced by Albert Bandura (1977) as a component of social learning theory. He defined it as one's belief in their ability to succeed in a task. Bandura identifies four factors that influence self-efficacy: (a) experience, (b) modelling or successor experience, (c) social persuasion, and (d) physiological factors (Bandura, 1977). Bandura (1986, 1977) argues that self-efficacy can influence an individual's behaviour if an individual successfully performs a task assigned to him. Bandura also explains that an individual's self-efficacy can change behaviour if an individual does the right job and that motivates the individual to perform it. The theory of social learning, otherwise known as Social Cognitive Theory (Bandura, 1986) emphasises the concept of self-efficacy as a critical component and element of the approach. According to Bandura, four factors influence self-efficacy, namely verbal motivation, individual physiology, achievement in performance and learning experience. Verbal persuasion leads to suggestions or statements to individuals to convince them to succeed in a task (Bandura, 1986; Cox, 2002; Lavalley, Kremer, Moran, & Williams, 2004). With regard to substance use disorders, numerous studies have shown the importance and role of self-efficacy in drug addiction has been extensively studied (Rounds-Bryant, Flynn, & Craighead, 1997) to date (Navarro, Alvarez, Contreras, & Jason., 2016; Sheykhnezhad & Seyedfatemi, 2019) especially in addictive care behavior (Kadden & Litt, 2011; Nikmanesh, Baluchi, & Motlagh, 2017; Torrecillas, Cobo, Delgado, & Ucles, 2015). These ideas include elements such as action plans, awareness, skills management, and motivation in certain situations (Kadden & Litt, 2011).

Those with low levels of self-efficacy may not adapt well to drug abuse issues, while those with higher levels of self-efficacy exhibit a stronger desire to change their addictive behaviours (Torrecillas et al., 2015). Ibrahim et al. (2011) found that there is a negative and significant relationship between self-efficacy and repeated addiction. In this regard, Minervini, Palandri, Bianchi, Bastiani, and Paffi (2011) state that high self-efficacy can be one of the significant contributors to addressing addiction-related risk situations. In addition, self-efficacy also has a strong correlation between self-efficacy beliefs of drug/substance use and treatment processes. As described by Bandura (1986), individuals with the necessary skills and high self-efficacy may be able to withstand a high risk of drug or alcohol abuse successfully. In the event of a slip, those with high self-efficacy tend to regard it as merely a temporary setback and will successfully regain control, while those with lower self-efficacy are likely to misuse substances again (Kadden & Litt, 2011).

Self-efficacy has also been identified as an essential factor in achieving and maintaining recovery (DiClemente, Carbonari, Montgomery, & Hughes, 1994) and as a single critical factor in behaviour change (Luszczynska, 2004). Higher self-efficacy is associated with better success in treatment. Patients in the treatment of substance abuse with self-efficacy and better coping-skills generally have better outcomes, and the likelihood of relapse addiction is reduced. Increasing and maintaining self-efficacy during treatment is likely to reduce drug use and increase retention and success rates (Bourbeau & Bartlett, 2008; Senbanjo, Wolff, Marshall, & Strang, 2009). In one such study on 191 heroin users was conducted in England to determine the relationship between self-efficacy and ongoing heroin use. After adapting to other factors such as insufficient dose, financial difficulties, and mental health problems, persistent heroin use was significantly associated with self-efficacy (Senbanjo et al., 2009).

Besides, an experimental study conducted by Franckowiak and Glick (2015) measured the relationship between self-efficacy and outcome of treatment among 50 participants in the Medical Assisted Therapy (MAT) program undergoing a 6-month Health Belief Model intervention. T-test analysis of pre- and post-test showed that GSE scores improved after six months of treatment. However, no statistically significant relationship was found between GSE scores and treatment outcomes. The study found that five study samples showed no change or decrease in GSE scores over time. There are two explanations given in this finding, namely (i) Self-efficacy is a 'fluid' concept and may change over time (Franckowiak & Glick, 2015) and (ii), most abusers of this substance are involved in other substances or drugs; this study did not control for this variable. Continued use of the substance may result in the client being unable to meet treatment needs and resulting in lower scores on self-efficacy, particularly concerning substance use (Allsop, Saunders, & Phillips, 2000). Similarly, a study by Heydari, Dashtgard, and Moghadam (2014) showed higher self-efficacy scores in the experimental group and resulted in abstinence and less desire for relapse addiction. As a result, efforts to improve self-efficacy are needed to produce better outcomes (Ciraulo, Piechniczek-Buczek, & Iscan, 2003).

2.1 Theories Underpinning Individual Psychoeducation Intervention

A variety of treatment approaches are used to help drug addicts recover. One of the most popular methods is the treatment module approach. Alsagoff (1981) defined modules as separate but complete parts and closely related to one subset and another subset. Furthermore, Creager and Murray (1985) stated that a module was a complete and independent unit with the main focus being on achieving some of the stated objectives. Additionally, individual psychopathy approaches are used to enhance the development of the individual's inner self to

ensure that their lives are more meaningful. This statement is in line with Sellman's (2010) view that the more individualised the treatment is and the more broad-based treatment that one receives, the better the outcome. Psychopathy can also be conducted over a shorter period (Duman, Yildirim, Uçok, Er, & Kanik, 2010). The effects of psychopathy allow the patients to decide whether to continue self-harming behaviour or stop for the sake of themselves, and the impact of individual interventions provided to the client can reduce problematic behaviours but improve the quality of life (Chien, Leung, & Chu, 2012). Several studies utilised psycho-educational approaches that can increase the motivation level of addicts (Jusoh, Mohd Hussin, & Abdul Ghani, 2015; Molaei, Shahidi, Vazifeh, & Bagherian, 2010). Psycho-educational interventions can increase the level of addict's self-efficacy, particularly in terms of their ability to survive in drug-free situations or use fewer drugs (Dolan et al., 2008) and their involvement in skills training activities is found to be associated with higher self-efficacy. This contributes to positive treatment outcomes (Ilgen, McKeller, & Moos, 2007). The psycho-educational approach also aims to increase patients' awareness of their addiction problems as well as other problems related to addiction to enable them to move to higher levels of change and realise the need for change (Connors, DiClemente, Velasquez, & Donovan, 2013). In this regard, the researchers developed an intervention module using individual psychopathology modules and named it as 'i-SEAZ'.

Two psychological theories are underlying the construction of this i-SEAZ module. The choice of this theory is based on the ability of both approaches to strengthen the self-concept of addiction in treatment. The first theory is the Contents and Forms Theory of Self-Awareness (CF) by Zaborowski and Slaski (2003), and the second theory is the Self Determination Theory (SDT) by Deci and Ryan (2000). The methods of integrating two approaches in constructing intervention were also developed by Fishbein and Yzer (2003) as they combined Behavioural Theory and Media Priming Theory to provide comprehensive instruments. The combination of this theory is designed to identify specific beliefs that need to be addressed if one is to change or maintain a given behaviour. According to Fishbein and Yzer (2003) again, this method of communication theory is complementary and inconsistent in contributing to the development of effective health communication campaigns.

Similarly, a study by Wells, Golub, and Parsons (2011) also used a theory-based method of reasoning to look for specific behaviour. Their research combines Cognitive Escape Theory and Expectancy Theory in understanding the relationship between substance abuse and sexual risk among MSM men (men having sex with men). They found improvements in the studies that used these two theories simultaneously. The need for integrating this theory has been

explicitly extended in explaining the effects of sexual conflict on the study sample. The study also found that the method of combining theory has shown that there was a synergistic effect on conflict and expectation. The findings also emphasized the importance of integrating existing approaches with other theories to consider intracellular operations and experiences of sexual conflict.

Although these two theories have never been integrated into the design of a treatment intervention, however, they are primarily SDTs widely used as treatment interventions in various settings (Hancox, Quested, Ntoumanis, & Thøgersen-Ntoumani, 2018; Sebire et al., 2016; Murray et al., 2015). Additionally, SDT has also been used as a guide for the development of a framework for several clinical interventions and randomised clinical trials (Ryan, Patrick, Deci, & Williams, 2008). According to Ashley and Reiter-Palmon (2012), self-awareness can be trained, and it has to do with self-efficacy. Previous studies have shown that a significant bilateral relationship between self-awareness and self-determination will make a person more self-aware and has a robust internal belief that he or she is capable of achieving the desired outcome (Engin & Çam, 2009; Gravill, Compeau, & Marcolin, 2002). The purpose of this i-SEAZ module is to help improve the self-efficacy of patients receiving treatment at the Methadone clinic. The i-SEAZ module consisting of five phases, ten sessions and 22 activities.

3.0 RESEARCH DESIGN

This study is a quantitative study using true experimental design. The true experimental design was chosen because the study met the following conditions: 1) The distribution of samples was random to the control and treatment groups and 2) Both groups were considered to be of similar characteristics. Moreover, the true experimental design used in this study was the pretest-posttest control design (Campbell & Stanley, 2015). The advantages of this design is to help the researcher identified the effects of independent variables in making changes to the dependent variables (Chua, 2006). In addition, experimental design is reported to being the most effective method of social studies research (Neuman & Kreuger, 2003; Shaughnessy, Zechmeister, & Zechmeister, 2015). Table 1 shows the pre- and post-test control designs for this experimental study.

Table 1: Design of pre-and post-test controls

Group	Pre Test	Intervention	Post Test
Experiment Group (EG)	O1	X	O2
Control Group (CG)	O1		O2

A total of 100 samples were selected randomly from five Methadone clinics under the control of the Ministry of Health Malaysia (MOH) located in Kuala Lumpur and Selangor. The method of determining the size of this sample was also made based on the views of Hair, Black, Babin, and Anderson (2010) who described five samples for each variable for analysis as lower limits, but the most acceptable method of determination was a 10:1 ratio (10 samples for one variable). In turn, Schreiber, Nora, Stage, Barlow, and King (2006) suggested that each parameter should have at least 10 participants. For this study, the researchers have used the G * Power Program, which is the Power Analysis Program (Faul, Erdfelder, Lang, & Buchner, 2007) to conduct sample calculations because it has been found that the use of G * Power takes into account the effect of size and statistical advantage. In addition, the inclusion criteria of the study sample were as follows:

1. The patient is over 18 years old.
2. A patient has been at least three months in Methadone treatment
3. The researchers obtain consent and cooperation for voluntary intervention.
4. A patient has no chronic mental illness, such as schizophrenia and bipolar disorder.
5. If a patient has a chronic infectious disease such as HIV / AIDS, and Tuberculosis (TB), they must be stable condition and under the care and supervision of a Medical Officer.

These criteria are intended to be used by the researchers to help reduce the incidence of dropout and adherence to sample presence during the intervention. The study samples were divided into two groups, $n = 50$ for the experimental group and $n = 50$ for the control group using a match paired method based on the four steps proposed by Ismail (2015). The purpose of using this method is to ensure that both groups are equal and homogeneous in terms of achievement scores before treatment. In short, a match paired method done by randomly selecting samples from a given sample list. Then, the samples were divided into two groups employing a matched pair to obtain two equivalent groups. Also, this procedure was performed on a single-blind basis that the samples did not know which group they belonged to either the experimental group

or the control group. This avoided the effects of 'bias' in the selection of the study sample. The samples from the experimental group attended the once-weekly intervention sessions for ten weeks. The total time allotted was 60 minutes per session; hence, the total number of intervention sessions for ten weeks was 600 minutes. In contrast, the samples from the control group did not follow the intervention but were only given intervention after the completion of the experimental study. The pre-test was given two weeks before the i-SEAZ module intervention began, while the post-test was given two weeks after the intervention.

Upon completion of the study period, a valid number of samples to be analysed in this study were 75 people from the control group, $n = 37$ and the experimental group, $n = 38$. The reduction was due to several unavoidable factors, such as transferring patients to other rehabilitation centres, patients defaulted, patients were arrested by the authorities and patients missing and outlier cases. For inference analysis, ANCOVA was utilised to compare treatment effects at the post-test level for both experimental and control groups with a significance level of 0.05, sampling distribution $n > 30$. ANCOVA was used to compare the effect of independent variables on dependent variables between at least two groups (Hair et al., 2010; Pallant, 2007). ANCOVA analysis was also chosen to reduce the threat to internal validity by quantifying the pre-existing differences between groups in terms of pre-test scores using the ANCOVA (Analysis of Covariance) statistical procedure in assessing treatment effects (Gall, Gall, & Borg, 2010; Idris, 2010; Fraenkel & Wallen, 2009). The main result of the covariance analysis was the F ratio and the probability value for the main effect of the group, with the significance value determined at the .05 level.

3.1 Instrument

The General Self-Efficacy (GSE) questionnaire was used to measure the self-efficacy of the study samples. The GSE is a psychometric scale containing ten items to assess positive self-esteem in coping with various severe events in one's life. Matthias Jerusalem and Ralf Schwarzer originally built the scale in the year 1981 consisting of 20 items, and then it was modified to 10 items in the year 1995. The original purpose was to evaluate general self-efficacy to predict self-efficacy and self-management skills. The questionnaire was designed for adults and adolescents older than 12 (Schwarzer & Jerusalem, 1995). Self-efficacy, in general, is the belief that a person is competent to handle a wide range of pressures or demands. Self-efficacy is considered a construct related to continuous behaviour; therefore, this concept is suitable for clinical practice and behavioural change of heroin addicts (Kenney, Bailey, Anderson, & Stein, 2017). The GSE can measure self-efficacy according to their field of study

and has been widely used in research, including in Malaysia. The GSE scale is designed to assess one's attitude of optimism, for example, the belief that one is responsible for his or her actions to succeed (Schwarzer & Jerusalem, 1995; Schwarzer & Hallum, 2008). Specifically, the scale was created to anticipate how one would deal with daily complexity and adaptation after experiencing various adverse events in life (Teo & Kam, 2014). This questionnaire has been translated into Malay Language and validated in many studies in Malaysia with a value based on the Likert scale of four points with a range of values of 1 to 4, namely (1) Strongly Disagree (2) Disagree, (3) Agree, and (4) Strongly Agree. The GSE questionnaire has excellent reliability based on previous local studies in the context of Malaysian countries (Baba, Wan Sulaiman, Ibrahim, & Sarnon, 2018; Abdullah, 2003; Narayanan & Weng Onn, 2016; Muhammad Nizam, Mohd Khir, & Ahmad, 2018; Wan Sulaiman et al., 2016).

4.0 ANALYSIS AND DISCUSSION

4.1 Analysis

Descriptive statistics contain mean and standard deviation of ten items in the GSE questionnaire on pre- and post-test. Based on the results in Table 2, the mean values of the self-efficacy scores for both groups increased after the post-test. The researchers conducted ANCOVA analysis with the pre-test as a covariate to evaluate this change.

Table 2: Self-efficacy descriptive

Group	Pre Test		Post Test	
	Min	SP	Min	SP
Control (CG)	2.6703	.34550	2.2297	.20799
Experiment (EG)	2.6947	.32211	3.1447	.20094

Based on the results in Table 3, ANCOVA analysis showed that the differences between groups were significant ($F = 403.828$, $p < .05$, $\eta^2 = 0.849$), with the effect of size being significantly in line with Pallant (2007). These numbers showed that there were significant differences between pre- and post-test in the control and experimental groups with the pre-test as a covariate on self-efficacy constructs.

Table 3: ANKOVA analysis for post self-efficacy test

Source	Type Sum Squares	III of	df	Mean Square	F	Sig.	Partial Eta Square
Corrected Model	15.980 ^a		2	7.990	207.933	.000	.852
Intercept	5.321		1	5.321	138.465	.000	.658
PRE_SE	.285		1	.285	7.406	.008	.093
Group	15.517		1	15.517	403.828	.000	.849
Error	2.767		72	.038			
Total	562.800		75				
Corrected Total	18.747		74				

a. R Squared = .852 (Adjusted R Squared = .848)

The details of the analysis results in Table 4 show that the experimental group achieved better mean scores ($M = 3.142$, $SE = .032$) after adjusting the post-test scores, compared to the control group ($M = 2.232$, $SE = .032$).

Table 4: Adjusted means for self-efficacy posttest

Group	Mean	Std. Error
Control	2.232 ^a	.032
Experiment	3.142 ^a	.032

a. Covariates appearing in the model are evaluated at the following values: PRAoverall_SE = 2.6827

Due to the significant differences shown by the groups, the Post Hoc Bonferroni test was performed to identify them. This test uses a mean score of adjusted post-test. The results in Table 5 show that there were significant differences between the experimental groups receiving the i-SEAZ module and the control group ($MD = .910$, $p < 0.05$). The comparison of adjusted means for Self-Efficacy posttest can be viewed in Figure 1.

Table 5: Bonferonni post-hoc test

(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig. ^b
control	experimen	-.910*	.045	.000
experiment	control	.910*	.045	.000

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.

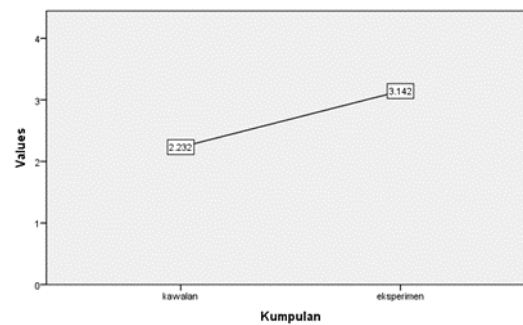


Figure 1: Comparison of adjusted means of self-efficacy post-test

4.2 Discussion

In this section, the discussion is the context of the findings on the impact of the i-SEAZ module on self-efficacy constructs. The descriptive analysis found that the mean of self-efficacy in post-test trials between the two groups increased. The researchers employed ANCOVA analysis in the pre-test as a covariate to evaluate this change. According to the results of the investigation, there were significant differences between pre- and post-test in the control and experimental groups. Subsequently, the Post Hoc Bonferroni test was performed using adjusted post-test mean scores and found that significant differences between groups and the experimental group mean were higher than the control group. From this statement, it can be concluded that the i-SEAZ Module was more effective in improving the patient's self-efficacy at the Methadone Clinic even though mean values of post-tests for both groups showed increment.

The study found that the i-SEAZ module had a significant impact on the self-efficacy aspect of the study sample, while the effect size was large. The degree of significance in ANCOVA analysis was at 0.00. This is in line with the fact that the integration of Contents and Forms Theory of Self-Awareness (CF) and Self Determination Theory (SDT) into the i-SEAZ module has provided a new dimension to the intervention, not to mention the findings of

previous studies such as Fishbein and Yzer (2003); and Wells et al. (2011), which verified that the integration of multiple theories will only affect specific aspects or variables related to those theories.

The findings of this study have proved that practical self-efficacy effects can be achieved by enhancing the elements of self-awareness and self-determination simultaneously. The method of integrating this theory is also in line with Garrin's (2014) method which has suggested the combination of three elements of self-efficacy, self-determination and self-regulation is a core value of the professional fitness of their clients. These elements implicitly promote perceptions of their clients' efficiency, autonomy, and style-oriented approach. Garrin (2014) explained that these three elements would have a significant dynamic impact on the agents of social change.

Moreover, these findings have added value to intervention-based research in drug rehabilitation. The methods of integrating these two psychological theories also have the potential to influence self-efficacy positively. The use of intervention methods in the treatment of drug rehabilitation has been found to be effective in improving self-efficacy as interventions based on cognitive behavioural therapy (DiClemente et al., 2001; Ghorbani, Sh, & Sarrami, 2011), Motivation Therapy Therapy (Ehret, LaBrie, Santerre, & Sherman, 2015), movie therapy (Molaie et al., 2010), and 12-step intervention (Finney, Noyes, Coutts, & Moos, 1998). This can be further explained in the findings of the systematic literature review by Hyde, Hankins, Deale, and Marteau (2008) who identified ten studies that measured self-efficacy in pre- and post-intervention tests in the context of tobacco treatment, alcohol, and other addictive substance use. The study found that seven out of ten reviews reported positive effects on self-efficacy. This suggests that the positive effects were due to different interventions across the studies. Furthermore, the intervention of the i-SEAZ module using this educational psychology approach was consistent with the results of the survey by Navidian, Kermansaravi, Tabas, and Saeedinezhad (2016) and Mesrahi, Sedighi, and Shirali (2016) who indicated that the intervention used this educational element in addition to methadone treatment able to increase motivation for withdrawal symptoms and reduce the craving to abuse drugs.

The study by Caldwell and Hayes (2016) also integrated self-efficacy and self-efficacy research and found that there was a link between the two constructs. They further explained that increasing effectiveness and self-awareness enabled leaders to enhance the efficacy and add value to the organisation. The implications of the study proved that self-efficacy and self-awareness were moral tasks related to a leader's identity. Thus, individuals need to understand their ability and personality to be more productive. This finding also confirmed that there was

a relationship between self-awareness and self-efficacy among drug addicts. D'Silva and Aminabhavi (2013) supported this statement with their results when compared adolescents involved in drug addiction to adolescents who were not. The findings of the study demonstrated that there was a significant difference in the group of adolescents involved in the use of drugs with low self-efficacy and low self-awareness compared to the group of adolescents who do not take drugs.

Furthermore, the findings from the pre- and post-test tests also showed that there were significant differences between the control and experimental groups. This indicates that the i-SEAZ module that integrates CF and SDT is more effective in improving patient self-efficacy. This improvement may be due to the fact that the i-SEAZ module contains elements of self-awareness and determination that can form functional self-efficacy, as well as the effects of Methadone treatment. Self-efficacy is a judgment of one's ability to manage and perform the necessary actions to achieve a predetermined achievement. Meanwhile, the role of self-efficacy in the context of drug addiction refers to beliefs about the ability to avoid or reject drugs in certain situations. Four factors influence self-efficacy, namely verbal motivation, individual physiology, achievement in learning and learning experience (Bandura, 1986). Although the idea of Bandura has explained the factors of increasing self-efficacy, studies on interventions to improve self-efficacy have been found to be relatively low in the treatment of drug abuse compared to interventions in other patients such as diabetes and cardiac rehabilitation (Kadden & Litt, 2011). To discuss the potential for significant improvements in the findings of this study, the researchers studied the factors proposed by Bandura and associated them with the awareness and self-determination activities introduced in the i-SEAZ module.

The first factor influencing self-efficacy in this module is verbal persuasion. Verbal persuasion is a constructive or constructive criticism given to one's performance. The use of verbal persuasion in a positive way will motivate individuals to strive to fulfil a responsibility, and they have a higher chance of success. Besides, the level of credibility that is acceptable quality and reliability, also influences the effectiveness of verbal persuasion. In the activities of the i-SEAZ module, the patients are motivated by the facilitator while the individual psycho-educational methods establish therapeutic relationships and create the session that is more accessible to the patients. The activities carried out are also non-confrontational but instead encouraging and observing the side of patients' positive construct. For example, one of the activity in the self-awareness construct aims at supporting the patients to realise the unique features in themselves. Through this activity, the patients believe that each of us have difference and abilities and this will make them special at their own way.

The second factor that can increase self-efficacy is a physical sensation, as described by Bandura (1986). Individuals experience sensations from their own body and the way they perceive physiological feedback also influences self-efficacy (Bandura, 1977). This MTR treatment has successfully relieved the patient's anxious, making the individual feel more comfortable with the session. These affective and calm states help patients appear more confident and foster higher self-efficacy. The study by Sanders, Roose, Lubrano, and Lucan (2013) found that patients' perception of the appropriate dose of Methadone helped to support the patient's comfortable in the treatment and this led to adherence and success in patients' contentment.

Next, the third factor is an achievement in the performance that refers to the individual's condition to create high self-efficacy or vice versa through the performance of others. Individuals can observe other people's performance and then compare their competencies with ones' own skills (Bandura, 1977). Equal success can improve its effectiveness. The components of the feeling can be witnessed in the i-SEAZ activity, which the patients listed their achievements and contribution to the people around them. Although no comparisons have been made with others, the accomplishments of these patients are collectively recognised and acknowledged in the i-SEAZ module. This finding was in line with the results of Ashford, Edmunds, and French (2010) who found that the best way to improve self-efficacy for physical activity was by providing feedback on performance and comparing their performance with others. In addition, the basic principle of self-efficacy also refers to the achievement and motivation of the individual determined by self-confidence (Bandura, 1982). These basic principles are also emphasized in i-SEAZ related to Self Determination activity which highlighted patients' achievement in MTR. The findings also showed that the use of Self Determination Theory in Module i –SEAZ intervention was found to be effective in improving self-efficacy. This finding supported the study by Pelissier and Jones (2006), who found an increase in self-efficacy in experimental groups using treatment modules based on Self Determination Theory. The fourth factor suggested by Bandura (1986) to improve self-efficacy is learning experience. In the context of this study, patients' learning experiences were leaning towards positive experiences. This experience affects the ability of individuals to perform assigned tasks. For example, the intervention focused on assisting patients in improving their coping skills in dealing with risky situations and peer pressure to ensure they stay healthy after treatment. Dolan et al. (2008) explained and suggested that several techniques can be utilised to enhance the patients' self-efficacy. These include teaching coping skills in dealing with risky situations, increasing the level of motivation of former addicts by reminding them of the

importance of staying motivated, using drugs or therapies to avoid drugs when engaging in cue exposure, as well as cognitive behavioural therapy to deal with negative emotions such as depression, stress and sadness. The techniques suggested in this study were in line with the activities carried out in the i-SEAZ module activities which emphasise the ability to deal with risk factor.

In addition, self-efficacy is also associated with the degree of change suggested in the Transtheoretical Model (TTM). TTM incorporates elements of Bandura's self-efficacy theory (Bandura, 1977, 1982). These constructs reflect the level of confidence that individuals have in maintaining the desired behaviour change in situations that trigger a relapse addiction. This effect is also measured by the extent to which individuals feel tempted to return to their behaviour at high-risk situations. TTM evaluates an individuals' self-efficacy based on their confidence to continue to behave in a healthy manner when facing various challenges or temptations. In the context of addiction, the temptation is interpreted as a strong urge to cause one to behave in an unhealthy way when facing various challenges (Prochaska, Redding, & Evers, 2015). At the pre- and post-judgment stages, the temptation to engage in problem-solving behaviours is far greater than the efficacy of self-restraint. However, as individuals move from the level of preparation to action, the inequality between feelings of self-efficacy and temptation vanishes, and they achieve a behavioural change. At the retention level, the challenge becomes more significant. Relapse addiction usually occurs when temptation hinders an individual's determination to maintain desired behaviour change (Prochaska, DiClemente, & Norcross, 1992). In other words, individuals with self-efficacy will move to a level of action and maintenance by propping the desired to change. When examined based on the results of the self-efficacy post-test test, the results found that there was an increase in the mean scores for both groups. This finding connoted that MTR has also consistently improved patient self-efficacy, although the intervention of the i-SEAZ module has shown significant differences in improving patient self-efficacy at the Methadone Clinic. This finding was also in line with other results previously discussed on the effectiveness of MTR in improving the quality of life of patients especially from psychological constructs (Ali et al., 2018; Fei, Yee, Habil, & Danaee, 2016; Lua & Talib, 2012). These findings suggested that the MTR should be pursued and i-SEAZ's intervention be implemented to improve and accelerate the recovery process, primarily the self-efficacy construct. The need for increased self-efficacy is essential in treatment because self-efficacy is considered to be a strong predictor of successful treatment recovery (Kadden & Litt, 2011; May, Hunter, Ferrari, Noel, & Jason, 2015) and is also used in predicting reimbursement (Hoeppner, Kelly, Urbanoski, & Slaymaker, 2011).

5.0 CONCLUSION

In conclusion, the findings of this study confirmed that the use of individual psycho-education intervention based on the Contents and Forms Theory of Self-Awareness and Self Determination Theory has significantly impacted the self-efficacy of opioid dependent patients in the Methadone Treatment (MT). This psychological intervention approach has the potential to improve MTR, thus, accelerate the process of drug rehabilitation in Malaysia. These results can only be generalized to problem opioid addiction patients who present for Methadone outpatient treatment. Problem opioid dependent patients who are not receiving Methadone treatment may respond differently, and they may not demonstrate such pronounced reductions. A limitation of this study is that therapist attention and expectancy effects were not controlled in the longer duration intervention relative to the briefer ones. Multiple therapists provided in this interventions, may be influencing the impact of the outcomes. Future studies need to evaluate the efficacy of SDT + CF relative to other types of therapy that equate for common therapeutic processes and durations. Additionally, this study also found problems experienced from opioid dependent patients in Methadone clinics are difficulty to have a full satisfaction in recovery since they are still on Methadone for long life treatment. More research is needed to identify the most sensitive and specific indices of these difficulties. Additional studies should evaluate interventions in other populations especially in center setting, such as rehabilitation centers that serve large proportions of individuals with opioid dependent patients. Furthermore, future research should maintain a focus on the sustaining of the motivation in the process and outcomes of treatment, across various types of comorbid conditions in patients with opioid dependent patients.

REFERENCES

- Abdullah, H. S. (2003). Malaysian school counselor resilience. *Jurnal Pendidikan*, 23(1), 89-99.
- Ali, N., Abd Aziz, S., Nordin, S., Che Mi, N., Abdullah, N., Paranthaman, V., ... Danaee, M. (2018). Evaluation of Methadone treatment in Malaysia: Findings from the Malaysian Methadone treatment outcome study (Mytos). *Journal Substance Use & Misuse* 53(2), 239-248.
- Allsop, S., Saunders, B., & Phillips, M. (2000). The process of relapse in severely dependent male problem drinkers. *Addiction*, 95(1), 95-106.

- Almeman, A. A., Ismail, R., & Mohamad, N. (2017). Methadone Maintenance Therapy (MMT) in Malaysia: An observational clinical study. *Australasian Medical Journal*, 10(4), 314-321.
- Alsagoff, S. A. (1981). Pengenalan pengajaran individu dengan tumpuan khas kepada modul pengajaran dan modul pembelajaran. *Jurnal Pendidikan dan Pendidikan*, 3(1), 54-62.
- Ashford, S., Edmunds, J., & French, D. P. (2010). What is the best way to change self-efficacy to promote lifestyle and recreational physical activity? A systematic review with meta-analysis. *British Journal of Health Psychology*, 15(2), 265-288.
- Ashley, G. C., & Reiter-Palmon, R. (2012). Self-awareness and the evolution of leaders: The need for a better measure of self-awareness. *Journal of Behavioral and Applied Management*, 14(1), 2-17.
- Baba, H., Wan Sulaiman, W. S., Ibrahim, F., & Sarnon, N. (2018). Faktor-faktor penyumbang kecenderungan situasi berisiko tinggi dalam kalangan penagih dadah berulang di Malaysia. *Jurnal Psikologi Malaysia*, 32(2), 26-41.
- Baharom, N., Hassan, M. R., Ali, N., & Shah, S. A. (2012). Improvement of quality of life following 6 months of Methadone maintenance therapy in Malaysia. *Substance Abuse Treatment, Prevention, and Policy*, 7(1), 1-6.
- Banazadeh, N., Abedi, H. A., & Kheradmand, A. (2009). Opiate dependants' experiences of the established therapeutic relationship in Methadone centers: Qualitative study. *Journal of Kerman University of Medical Sciences*, 16(2), 144-154.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191-215.
- Bandura, A. (1986). *Social foundations of thought and action*. Prentice Hall.
- Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist*, 37(2), 122-147.
- Bourbeau, J., & Bartlett, S. J. (2008). Patient adherence in COPD. *Thorax*, 63(9), 831-838.
- Caldwell, C., & Hayes, L. A. (2016). Self-efficacy and self-awareness: Moral insights to increased leader effectiveness. *Journal of Management Development*, 35(9), 1163-1173.
- Campbell, D. T., & Stanley, J. C. (2015). *Experimental and quasi-experimental designs for research*. Ravenio Books.

- Cheong, K. H., Vaughan, E. L., Lau, P. L., & Gonzalez, N. (2019). Help seeking attitudes and illegal drug use among Methadone maintenance therapy patients in Malaysia. *Addiction Research & Theory*, 28(1), 46-52.
- Chien, W. T., Leung, S. F., & Chu, C. S. (2012). A nurse-led, needs-based psycho-education intervention for Chinese patients with first-onset mental illness. *Contemporary Nurse*, 40(2), 194-209.
- Chua, Y. P. (2006). *Kaedah dan statistik penyelidikan: Asas statistik penyelidikan*. McGraw-Hill Education.
- Ciraulo, D. A., Piechniczek-Buczek, J., & Iscan, E. N. (2003). Outcome predictors in substance use disorders. *Psychiatric Clinics of North America*, 26(2), 381-409.
- Connors, G. J., DiClemente, C. C., Velasquez, M. M., & Donovan, D. M. (2013). *Substance abuse treatment and the stages of change: Selecting and planning interventions*. Guilford Press.
- Cox, R. H. (2002). *Sport psychology: Concepts and application* (5th ed.). McGraw-Hill.
- Creager, S. E., & Murray, R. W. (1985). *The international encyclopedia of education*. Pergamon Press Ltd.
- Curran, V., & Drummond, C. (2007). Psychological treatments of substance misuse and dependence. In D. Nutt, T. W. Robbins, G. V. Stimson, M. Ince, & A. Jackson (Eds.), *Drugs and the future* (pp. 209-239). Academic Press.
- D'Silva, J., & Aminabhavi, V. A. (2013). Adjustment, self-efficacy and psychosocial competencies of drug addicted adolescents. *Journal of Psychology*, 4(1), 13-18.
- Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11(4), 227-268.
- DiClemente, C. C., Carbonari, J. P., Daniels, J. W., Donovan, D. M., Bellino, L. E., & Neavins, T. M. (2001). *Project MATCH hypotheses: Results and causal chain analyses* (NIH Publication No. 01-4238). National government publication.
- DiClemente, C. C., Carbonari, J. P., Montgomery, R. P., & Hughes, S. O. (1994). The alcohol abstinence self-efficacy scale. *Journal of Studies on Alcohol*, 55(2), 141-148.
- Dolan, S. L., Martin, R. A., & Rohsenow, D. J. (2008). Self-efficacy for cocaine abstinence: Pretreatment correlates and relationship to outcomes. *Addictive Behaviors*, 33(5), 675-688.
- Duman, Z. C., Yildirim, N. K., Uçok, A., Er, F., & Kanik, T. (2010). The effectiveness of a psychoeducational group program with inpatients being treated for chronic mental illness. *Social Behavior and Personality: An International Journal*, 38(5), 657-666.

- Ehret, P. J., LaBrie, J. W., Santerre, C., & Sherman, D. K. (2015). Self-affirmation and motivational interviewing: Integrating perspectives to reduce resistance and increase efficacy of alcohol interventions. *Health Psychology Review*, 9(1), 83-102.
- Engin, E., & Cam, O. (2009). Effect of self-awareness education on the self-efficacy and sociotropy–autonomy characteristics of nurses in a psychiatry clinic. *Archives of Psychiatric Nursing*, 23(2), 148-156.
- Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2007). G* Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, 39(2), 175-191.
- Fei, J. T. B., Yee, A., Habil, M. H. B., & Danaee, M. (2016). Effectiveness of Methadone maintenance therapy and improvement in quality of life following a decade of implementation. *Journal of Substance Abuse Treatment*, 69(1), 50-56.
- Finney, J. W., Noyes, C. A., Coutts, A. I., & Moos, R. H. (1998). Evaluating substance abuse treatment process models: I Changes on proximal outcome variables during 12-step and cognitive-behavioral treatment. *Journal of Studies on Alcohol*, 59(4), 371–380.
- Fishbein, M., & Yzer, M. C. (2003). Using theory to design effective health behavior interventions. *Communication Theory*, 13(2), 164-183.
- Fraenkel, J. R., & Wallen, N. E. (2009). *How to design and evaluate research in education* (7th ed). McGraw-hill.
- Franckowiak, B. A., & Glick, D. F. (2015). The effect of self-efficacy on treatment. *Journal of Addictions Nursing*, 26(2), 62-70.
- Gall, M. D., Gall, J. P., & Borg, W. R. (2010). *Educational research: An introduction*. Allyn and Bacon.
- Garrin, J. M. (2014). Self-efficacy, self-determination, and self-regulation: The role of the fitness professional in social change agency. *Journal of Social Change*, 6(1), 41-54.
- Ghorbani, T., Sh, M. K., & Sarrami, G. (2011). Compare the effectiveness of group cognitivebehavioral therapy based on coping skills and emotion regulation strategies for improving methadone maintenance treatment and prevention of recurrence. *Journal of Addiction Research & Therapy*, 5(17), 59-74.
- Gravill, J., Compeau, D., & Marcolin, B. (2002). Metacognition and IT: The influence of self-efficacy and self-awareness. In *Eighth Americas Conference on Information Systems* (pp. 1055-1064). Eighth Americas Conference on Information Systems.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis*. Pearson Prentice Hall.

- Halim, M. A., & Sabri, F. (2013). Relationship between defense mechanisms and coping styles among relapsing addicts. *Procedia-Social and Behavioral Sciences*, 84(1), 1829-1837.
- Hancox, J. E., Quested, E., Ntoumanis, N., & Thøgersen-Ntoumani, C. (2018). Putting self-determination theory into practice: Application of adaptive motivational principles in the exercise domain. *Qualitative Research in Sport, Exercise and Health*, 10(1), 75-91.
- Heydari, A., Dashtgard, A., & Moghadam, Z. E. (2014). The effect of Bandura's social cognitive theory implementation on addiction quitting of clients referred to addiction quitting clinics. *Iranian Journal of Nursing and Midwifery Research*, 19(1), 19-23.
- Hoepfner, B. B., Kelly, J. F., Urbanoski, K. A., & Slaymaker, V. (2011). Comparative utility of a single-item versus multiple-item measure of self-efficacy in predicting relapse among young adults. *Journal of Substance Abuse Treatment*, 41(3), 305-312.
- Hyde, J., Hankins, M., Deale, A., & Marteau, T. M. (2008). Interventions to increase self-efficacy in the context of addiction behaviours: A systematic literature review. *Journal of Health Psychology*, 13(5), 607-623.
- Ibrahim, F., Kumar, N., & Abu Samah, B. (2011). Self-efficacy and relapsed addiction tendency: An empirical study. *The Social Sciences*, 6(4), 277-282.
- Idris, N. (2010). *Penyelidikan dalam pendidikan*. McGraw Hill Education.
- Ilgen, M., McKellar, J., & Moos, R. (2007). Personal and treatment-related predictors of abstinence self-efficacy. *Journal of Studies on Alcohol and Drugs*, 68(1), 126-132.
- Ismail, R. (2015). *Metodologi penyelidikan: Teori dan praktis*. Penerbit Universiti Kebangsaan Malaysia.
- Jusoh, M. R., Mohd Hussin, A. H., & Abdul Ghani, S. (2015). Keberkesanan terapi kelompok psikopendidikan dalam meningkatkan motivasi penagih dadah. *Jurnal Antidadah Malaysia*, 9(1), 1-18.
- Kadden, R. M., & Litt, M. D. (2011). The role of self-efficacy in the treatment of substance use disorders. *Addictive Behaviors*, 36(12), 1120-1126.
- Kenney, S. R., Bailey, G. L., Anderson, B. J., & Stein, M. D. (2017). Heroin refusal self-efficacy and preference for medication-assisted treatment after inpatient detoxification. *Addictive Behaviors*, 73(1), 124-128.
- Lavallee, D., Kremer, J., Moran, A., & Williams, M. (2004). *Sport psychology: Contemporary themes*. Palgrave.
- Lua, P. L., & Talib, N. S. (2012). *Terapi gantian Metadon: Untuk penagihan dadah*. Penerbit Universiti Sultan Zainal Abidin.

- Luszczynska, A. (2004). Change in breast self-examination behavior: Effects of intervention on enhancing self-efficacy. *International Journal of Behavioral Medicine*, 11(2), 95-103.
- Ministry of Health Malaysia. (2012). Terapi gantian Methadone. Retrieved from <http://www.Myhealth.Gov.My/Index.Php/TerapiGantian-Methadon>
- Ministry of Health Malaysia. (2016). *Program rawatan Methadone*. Kementerian Kesihatan Malaysia.
- Moss, R. A. (2007). Negative emotional memories in clinical practice: Theoretical considerations. *Journal of Psychotherapy Integration*, 17(2), 209-224.
- Mohamed, M. N., & Marican, S. (2014). Positive outcomes of Cure and Care Community Centres (CCSC): A community based treatment programme in Malaysia. *International Journal of Prevention and Treatment of Substance Use Disorders*, 3(5), 132-136.
- Malini, C., Shamsudin, A. F., & Wahab, N. A. A. (2018). Effectiveness of Methadone Maintenance Therapy (MMT) and life style improvement among Opiate dependent patients registered. *Malaysian Journal of Health Sciences*, 17(1), 51-56.
- May, E. M., Hunter, B. A., Ferrari, J., Noel, N., & Jason, L. A. (2015). Hope and abstinence self-efficacy: Positive predictors of negative affect in substance abuse recovery. *Community Mental Health Journal*, 51(6), 695-700.
- Melemis, S. M. (2010). *I want to change my life: How to overcome anxiety, depression, & addiction*. Modern Therapies.
- Mesrahi, T., Sedighi, M., & Shirali, M. (2016). The effect of cognitive-behavioral group therapy on decrease in addiction relapse in randomly assigned addicts under drug therapy: A statistical analysis. *International Journal of Neurorehabilitation*, 3(3), 1-6.
- Minervini, I., Palandri, S., Bianchi, S., Bastiani, L., & Paffi, D. (2011). Desire and coping self-efficacy as craving measures in addiction: The self-efficacy and desire scale (SAD). *Open Behavioral Science Journal*, 5(1), 1-7.
- Molaei, A., Shahidi, S., Vazifeh, S., & Bagherian, S. (2010). Comparing the effectiveness of cognitive behavioral therapy and movie therapy on improving abstinence self-efficacy in Iranian substance dependent adolescents. *Procedia-Social and Behavioral Sciences*, 5(1), 1180-1184.
- Mukherjee, T. I., Pillai, V., Ali, S. H., Altice, F. L., Kamarulzaman, A., & Wickersham, J. A. (2017). Evaluation of a Hepatitis C education intervention with clients enrolled in Methadone maintenance and needle/syringe programs in Malaysia. *International Journal of Drug Policy*, 47(1), 144-152.

- Murray, A., Hall, A. M., Williams, G. C., McDonough, S. M., Ntoumanis, N., Taylor, I. M., & Lonsdale, C. (2015). Effect of a self-determination theory-based communication skills training program on physiotherapists' psychological support for their patients with chronic low back pain: A randomized controlled trial. *Archives of Physical Medicine and Rehabilitation*, 96(5), 809-816.
- Narayanan, S. S., & Weng Onn, A. C. (2016). The influence of perceived social support and self-efficacy on resilience among first year Malaysian students. *Kajian Malaysia: Journal of Malaysian Studies*, 34(2), 1-23.
- Navarro, E., Alvarez, J., Contreras, R., & Jason, L. A. (2016). Ethnic differences in abstinence self-efficacy among recovering individuals. *Journal of Addiction Medicine and Therapeutic Science*, 2(1), 13-18.
- Navidian, A., Kermansaravi, F., Tabas, E. E., & Saeedinezhad, F. (2016). Efficacy of group motivational interviewing in the degree of drug craving in the addicts under the Methadone Maintenance Treatment (MMT) in south east of Iran. *Archives of Psychiatric Nursing*, 30(2), 144-149.
- Neuman, W. L., & Kreuger, L. (2003). *Social work research methods: Qualitative and quantitative approaches*. Allyn and Bacon.
- Nikmanesh, Z., Baluchi, M. H., & Motlagh, A. A. P. (2017). The role of self-efficacy beliefs and social support on prediction of addiction relapse. *International Journal of High Risk Behaviors and Addiction*, 6(1), e21209.
- Muhammad Nizam, N. S., Mohd Khir, A., & Ahmad, N. (2018). Efikasi sendiri dan kecenderungan tingkah laku prososial dalam kalangan mahasiswa di Selangor. *Malaysian Journal of Youth Studies*, 1(18), 111-122.
- Ono, M., Kochiyama, T., Fujino, J., Sozu, T., Kawada, R., Yokoyama, N., ... Takahashi, H. (2018). Self-efficacy modulates the neural correlates of craving in male smokers and ex-smokers: An fMRI study. *Addiction Biology*, 23(5), 1179-1188.
- Othman, Z., & Gani, F. A. (2017). Attendance at counselling sessions predicts good treatment response in methadone maintenance therapy. *International Medical Journal*, 24(1), 21-23.
- Pallant, J. (2007). *SPSS survival manual: A step by step guide to data analysis using SPSS for windows* (3rd ed.). Maidenhead Open University Press.
- Pelissier, B., & Jones, N. (2006). Differences in motivation, coping style, and self-efficacy among incarcerated male and female drug users. *Journal of Substance Abuse Treatment*, 30(2), 113-120.

- Premila Devi, J., Azriani, A. R., Zahiruddin, W. M., Mohd Ariff, M. N., & Noor Hashimah, A. (2012). The effectiveness of Methadone maintenance therapy among Opiate-dependants registered with Hospital Raja Perempuan Zainab II Kota Bharu, Kelantan. *The Malaysian Journal of Medical Sciences*, 19(4), 17-22.
- Prochaska, J. O., DiClemente, C. C., & Norcross, J. C. (1992). In search of how people change: Applications to the addictive behaviors. *American Psychologist*, 47(1), 1102-1114.
- Prochaska, J. O., Redding, C. A., & Evers, K. E. (2015). *The transtheoretical model and stages of change*. Health Behavior: Theory, Research, And Practice.
- Ramli, M., Zafri, A. B., Junid, M. R., & Hatta, S. (2012). Associated risk factors to non-compliance to Methadone maintenance therapy. *The Medical Journal of Malaysia*, 67(6), 560-564.
- Reed, M. B., Woodruff, S. I., Holt, M., DeMers, G., Mattuecci, M., & Hurtado, S. L. (2019). The relationship between self-efficacy, readiness to change, and AUDIT risk levels in a sample of active duty emergency department patients. *Military Psychology*, 31(3), 187-199.
- Reid, G., Kamarulzaman, A., & Sran, S. K. (2007). Malaysia and harm reduction: The challenges and responses. *International Journal of Drug Policy*, 18(2), 136-140.
- Rounds-Bryant, J. L., Flynn, P. M., & Craighead, L. W. (1997). Relationship between self-efficacy perceptions and in-treatment drug use among regular cocaine users. *The American Journal of Drug and Alcohol Abuse*, 23(3), 383-395.
- Ryan, R. M., Patrick, H., Deci, E. L., & Williams, G. C. (2008). Facilitating health behaviour change and its maintenance: Interventions based on self-determination theory. *The European Health Psychologist*, 10(1), 2-5.
- Sanders, J. J., Roose, R. J., Lubrano, M. C., & Lucan, S. C. (2013). Meaning and Methadone: Patient perceptions of Methadone dose and a model to promote adherence to maintenance treatment. *Journal of Addiction Medicine*, 7(5), 307-313.
- Schreiber, J. B., Nora, A., Stage, F. K., Barlow, E. A., & King, J. (2006). Reporting structural equation modeling and confirmatory factor analysis results: A review. *The Journal of Educational Research*, 99(6), 323-338.
- Schwarzer, R., & Hallum, S. (2008). Perceived teacher self-efficacy as a predictor of job stress and burnout: Mediation analyses. *Applied Psychology*, 57(1), 152-171.
- Schwarzer, R., & Jerusalem, M. (1995). Generalized self-efficacy scale. Measures in health psychology: A user's portfolio. *Causal and Control Beliefs*, 1(1), 35-37.

- Sebire, S. J., Kesten, J. M., Edwards, M. J., May, T., Banfield, K., Tomkinson, K. & Jago, R. (2016). Using self-determination theory to promote adolescent girls' physical activity: Exploring the theoretical fidelity of the Bristol Girls Dance Project. *Psychology of Sport and Exercise*, 24(1), 100-110.
- Sellman, D. (2010). The 10 most important things known about addiction. *Addiction*, 105(1), 6-13.
- Senbanjo, R., Wolff, K. I. M., Marshall, E. J., & Strang, J. (2009). Persistence of Heroin use despite Methadone treatment: Poor coping self-efficacy predicts continued Heroin use. *Drug and Alcohol Review*, 28(6), 608-615.
- Shakira, R. H. W., Sarimah, A., & Norsa'adah, B. (2017). Factor predictive of 1-year retention on Methadone maintenance therapy program: A survival analysis study. *Addictive Disorders & Their Treatment*, 16(2), 64-69.
- Shaughnessy, J. J., Zechmeister, E. B., & Zechmeister, J. S. (2015). *Research methods in psychology* (10th ed.). McGraw-Hill.
- Sheykhnezhad, F., & Seyedfatemi, N. (2019). Effect of group education on self-efficacy and craving tendencies in drug abusers in 5th Azar Drug Abuse Treatment Center of Gorgan. *Cogent Psychology*, 6(1), 1-16.
- Taghizadeh, F., & Cherati, J. Y. (2015). Procrastination and self-efficacy among intravenous drug users on a Methadone maintenance program in Sari City, Iran, 2013. *Iranian Journal of Psychiatry and Behavioral Sciences*, 9(4), e3738.
- Teo, T., & Kam, C. (2014). A measurement invariance analysis of the general self-efficacy scale on two different cultures. *Journal of Psychoeducational Assessment*, 32(8), 762-767.
- Torrecillas, F. L., Cobo, M. A. T., Delgado, P., & Ucles, I. R. (2015). Predictive capacity of self-efficacy in drug dependence and substance abuse treatment. *Journal of Psychology and Clinical Psychiatry*, 2(3), 1-7.
- Volkow, N. D. (2014). *America's addiction to Opioids: Heroin and prescription drug abuse*. Senate Caucus on International Narcotics Control.
- Wan Sulaiman, W. S., Ibrahim, F., Mohd, M. S., Nen, S., Sarnon, N., & Alavi, K. (2016). Rehabilitation through parole system in Malaysia: The role of optimism as mediating variable in the relationship between self-efficacy and resilience. *Jurnal Psikologi Malaysia*, 30(2), 141-152.

- Wells, B. E., Golub, S. A., & Parsons, J. T. (2011). An integrated theoretical approach to substance use and risky sexual behavior among men who have sex with men. *AIDS and Behavior*, 15(3), 509-520.
- Zaborowski, Z., & Slaski, S. (2003). Contents and forms theory of self-awareness. *Imagination, Cognition and Personality*, 23(2), 99-119.