Effectiveness of family intervention on reducing frequency of drug use and improving

motivation to quit drug

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Abstract

Research findings support the mutual relationship between drug abuse and family functioning. This pilot study was to evaluate the family intervention in the project, One Touch New Life II, which was launched by Evergreen Lutheran centre and sponsored by the Beat Drugs Fund. 15 drug abusers in family intervention condition and 11 drug abusers in individual-based treatment condition were compared on their motivation improvement and reduction of frequency drug use after treatment. Pre-post treatment questionnaires were applied to evaluate outcome. Both conditions demonstrated significant motivation improvement and reduction of drug use. Family intervention was found significantly greater than individual-based treatment in improving motivation. However, no significant difference in reduction of drug use was found between the conditions. The phenomena were discussed in this paper.

Background

Drug abuse continues to be a significant public health problem. The Central Registry of Drug Abuse (CRDA; Narcotics Division, 2018) recently revealed a total number of 6725 reported drug abusers. The actual figure of drug abusers should be even higher as it was, in average, 4.3 years that drug abuse was undiscovered since their first drug abuse. Various treatment models emerged and aimed at provide effective help for drug abusers. Some treatment models also targeted the hidden drug abusers and considered ways to engage them for treatment.

One of the 11 counselling centre for psychotropic substance abusers, Evergreen Lutheran centre had launched two projects, One Touch New Life, and One Touch New Life II, to engage the hidden drug abusers through the family and strengthen the family support for the abusers. Both projects were sponsored by the Beat Drugs Fund. While both positive family engagement outcome and drug treatment outcome were demonstrated in the first project (黃斯詩、張家年，2016), it was also important to evaluate the family intervention of the projects in compare with individual-based treatment on enhancing motivation of quitting drug and reducing drug use.

Literature Review

Research findings support the mutual relationship between drug abuse and family functioning (Fals-Stewart, Lam, & Kelley, 2009). The onset, sustaining and relapse of drug abuse are consistently and strongly predicted by family factors (Rowe, & Liddle, 2003; Tobler & Komro, 2010). Brody et al. (2009) suggest that supportive parenting even decreases genetic vulnerability for drug use.

Two decades ago, the family intervention has been concluded as a promising approach for drug abuse treatment (Liddle & Dakof, 1995). The reasons for family intervention in the drug abuse treatment appear to be self-evident (CSAT, 2004). Rowe (2012) reviewed family-based practices and studies between 2003 and 2010, and concluded that family intervention as one of the most effective approaches for treating both adults and adolescents with drug issue. While most encouraging findings are drawn from foreign studies, the preliminary finding of a local project "One Touch New Life" revealed the frequency reduction of drug use is heightened in the family intervention condition in compare with the individual-based treatment condition (黃斯詩、張家年，2016). The family intervention was then modified and aimed to

engage drug abusers in treatment, facilitate the treatment, and improve both the family members' well-being.

The focus of this study is on the effectiveness of the family intervention in drug abusers' treatment. It is hypothesised that the frequency reduction of drug use and motivation of quitting drug are enhanced by the treatment include direct support to a family member of the drug abusers and cooperate with the family member for family changes. Specifically, this study will evaluate whether treatment with family intervention outdo the treatment without family intervention on cutting down the frequency of drug use and improving motivation.

Method

Sample

Quasi-experimental design will be adopted in this study. Sample data were collected from July 2016 to March 2018 in the project, One Touch New Life II, which was sponsored by the Beat Drugs Fund. Two groups of drug abusers, namely family intervention condition and individual-based treatment condition, were invited to complete at the pre-treatment assessment and post-treatment in the study. Drug abusers should have indicated drug use in the recent 30 days in the pre-treatment assessment. Drug abusers with extreme drug usage (i.e. indicating using drug averagely 8 times a day in the pre-treatment assessment), were not considered in this study. An inclusive criterion was that pre- and post-treatment assessment results were obtained by the time of beginning the analysis process.

The family intervention included both engaging the drug abusers for treatment through family members and helping the family to establish beneficial relationship and environment to facilitate the drug abusers to quit drug. The engagement was conducted prior to the drug abusers' presence in treatment and so the pre-treatment assessment. Therefore, it was assumed that extensive family engagement likely affected the pre-treatment condition, such as increasing the drug abusers' pre-treatment motivation. Moreover, the drug abusers required such a prolonged pre-treatment engagement were deviated from self-referred or family-referred clients. Therefore, drug abusers who required more than 4 weeks of family engagement before entering treatment were excluded.

Drug abusers who were introduced by their family members and treated by therapists using family intervention were categorised into family intervention

condition. Self-referred drug abusers met the inclusive criteria and received individual-based treatment were included in individual-based treatment condition. Gender, age, the number of years of using drug, and pre-treatment frequency of drug use in 30 days and pre-treatment motivation were compared between family intervention condition and individual-based treatment condition to examine demographic homogeneity between groups. Necessary exclusion would be conducted to match demographic information between groups. Any detected outlier was excluded.

Family Intervention

The family intervention was developed in a previous project "One Touch New Life" with reference from various foreign treatment models, including CRAFT (Scruggs, Meyers & Kayo, 2001), ARISE intervention (Garrett et al., 1998). It was then modified from the experience in the previous project and localised to fit in the culture in Hong Kong. The family intervention considered two parallel streams, i.e. (1) assisting the drug abuser to quit drug (including engaging for treatment) and (2) relational and personal well-being enhancement of the family member.

Measurements

Pre-treatment and post-treatment assessment results were obtained. In both groups, drug abusers' drug-use frequency in the past 30 days and readiness to consider changing drug use were assessed by the Beat Drugs Fund evaluation question set no. 5 (Drug use frequency in the past one month) and no. 13 (Contemplation Ladder) respectively.

Result

In total 36 drug abusers' data were screened. 20 drug abusers who were introduced by their family members and treated by therapists using family intervention. All 20 drug abusers were males. 5 of them required more than 4 weeks of family engagement before entering treatment and were so excluded. Therefore, 15 out of the 20 drug abusers were categorised into family intervention condition.

16 self-referred drug abusers meeting the inclusive criterion and receiving individual-based treatment were screened for individual-based treatment condition. As the 15 drug abusers in family intervention condition were all males. Maintaining between-group homogeneity, in the individual-based treatment condition, 5 females were excluded and 11 male drug abusers remained. Therefore, 15 and 11 drug abusers

were categorised in family intervention condition and individual-based treatment condition respectively, resulting in sample data of 26 drug abusers.

Demographical and pre-treatment variables including age, the number of years of using drug, and pre-treatment frequency of drug use in 30 days and pre-treatment motivation were compared between the family intervention condition and the individual-based treatment condition.

Analysis

A computer application named R Studio (version 1.1.442) was used to conducted statistical tests. One of the assumptions for the t-test is that the variances of the two conditions were equal. To uphold the assumption, Welch's test was used to estimating the variances and adjusted the degree of freedom in t-tests.

Preliminary tests indicated no significant differences between the family intervention condition and the individual-based treatment condition regarding the known demographical and pre-treatment variables. Another set of preliminary tests were also conducted and supported the 5 drug abusers went through pre-treatment family engagement more than 4 weeks (i.e. family engagement condition) were significantly higher in pre-treatment motivation in compared with both family intervention condition and individual-based treatment condition.

Table 1

Pre-treatment variables in various conditions

Pre-treatment variable	FI condition	IB condition	FE condition	FI vs. IB	FI vs. FE	IB vs. FE
	Mean of variable			t (df) p-value		
Age	32.7	33.7	28.0	-0.27 (19.65) > 0.05	1.35 (9.06) > 0.05	1.43 (11.72) > 0.05
No. of years of using drug	11.9	10.3	5.6	0.42 (19.36) > 0.05	2.21 (16.49) **0.04***	1.29 (13.69) > 0.05
Drug-use frequency	14.4	28.0	9.0	-1.44 (16.48) > 0.05	0.77 (11.52) > 0.05	1.97 (14.00) > 0.05

				-0.74	-3.32	-2.32
Motivation	6.3	6.8	8.4	(22.41)	(15.52)	(13.78)
				> 0.05	**< 0.01***	**0.04***

FI = Family intervention; IB = Individual-based treatment; FE = Family engagement

* = significant, p ≤ 0.05

Paired t-tests were conducted to compare pre- and post-treatment motivation and drug-use frequency for each condition. Both conditions demonstrated post-treatment improvement in motivation and reduction in drug-use frequency.

Table 2

Pre-post treatment comparison of motivation and drug-use frequency

Variable	Condition	t (df)	p-value	Mean of difference
Motivation	Family intervention	5.50 (14)	**< 0.01***	2.67
	Individual-based treatment	4.67 (10)	**< 0.01***	1.27
Drug-use frequency	Family intervention	-2.14 (14)	**0.05***	-9.96
	Individual-based treatment	-2.23 (10)	**0.05***	-16.24

* = significant, p ≤ 0.05

Independent T-tests between the family intervention condition and the individual-based treatment condition were conducted regarding both motivation improvement and reduction of drug-use frequency. A significantly larger motivation improvement was detected in family intervention condition in compared with individual-based treatment condition. No significant difference was detected in reduction of frequency of drug use between the two groups.

Table 3

Between-conditions comparison of motivation and drug-use frequency

Variable	t (df)	p-value	$\bar{x}_{FI} - \bar{x}_{IB}$
Motivation	2.51 (21.28)	**0.01***	1.40
Drug-use frequency	-0.72 (17.70)	> 0.05	-6.29

FI = Family intervention; IB = Individual-based treatment

* = significant, p ≤ 0.05

Discussion

In this pilot study, the significant motivation improvement and drug-use frequency reduction in the family intervention condition and the individual-based treatment supported the effectiveness of both ways of treatment. In uplifting drug abusers' motivation to quit, the findings supported that the family intervention outdid usual treatment. Drawing from literature, family intervention can be beneficial to drug

abusers' in at least two ways (Tuten, Jones, Schaffer & Stitzer, 2012). Family members can reward drug abstinence and the improvement in relationship can reduce the chances of drug abuse and relapse (O'Farrell & Fals-Stewart, 2006). The family intervention conducted in this study helped family member to manage drug abuse by reward system and aimed at improving family relationship. The intervention in this study also attended to the relationship changes which pragmatically helped drug abusers feel supportive from their family members. It includes establishing positive impression to each other in the family and setting up optimal personal boundaries. In a broader perspective, social support plays a critical role in drug abstinence. Moos (2007) concluded that social support from non-drug-using individuals is vital those who stop drug use without treatment are successful in sustaining abstinence. The social support also viewed as a key predictor of positive outcomes following treatment for drug abuse (Scherbaum & Specka, 2008). It was known that family members usually experience disruption, chronic stress, excessive worry psychological maladjustment when facing drug abuse problem in the family (Orford, Velleman, Copello, Templeton & Ibanga, 2010; Butler & Bauld 2005; Copello et al., 2009). The family intervention aimed to increase the family member's well-being and safety to a level that he or she is capable and flexible to support drug abusers. The family intervention might also increase drug abusers' motivation to quit drug by increasing awareness of drug problem. It could be done by the intervention assisting the family member to reduce any interaction that enabled drug abuse and to confidently and calmly in reflect the drug problem and to invite the drug abusers to tackle drug problem together. The findings might imply drug abusers' motivation was enhanced by that the family intervention achieved one or more of the mentioned aspects of improving family environment.

Both the family intervention and the individual-based treatment conditions demonstrated significant post-treatment reduction of drug use. However, the finding showed no significant difference of the effectiveness in reducing drug use between the family intervention and the individual-based treatment conditions. Most drug abuse treatment suggested that the reduction of drug-use frequency require skills including avoiding high-risk situations, handling stress, handling craving, and relapse prevention. These were the parts on which both family intervention and individual-based treatment work. Although family intervention was supposed to alter the family environment to be favourable for quitting drug, it might not be sufficient to

significantly excel the personal effort and skills to reduce drug use by the drug abusers in individual treatment.

Another point worth noting was the pre-treatment motivation of the 5 drug abusers with pre-treatment family engagement more than 4 weeks was significantly higher than the family intervention and individual-based conditions. While it was possible the family engagement boosted up the drug abusers' motivation, it was also likely because of other reasons that the drug abusers wanted to fulfil the expectation after experiencing prolonged pressure from their family in the engagement phase.

As a pilot study, the sample size was obviously small, focusing on male drug abusers. Much caution is required when generalising the findings to various populations. Further study might include areas of the following: (1) a large scale study to testify whether the finding of this study is replicable, (2) comparing the long-term effects of the family intervention condition and individual-based group in maintaining abstinence.

Acknowledgments

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請細心閱讀各題，填上你認為最適合的答案。所有答案將<u>完全保密</u>。

1. 在過去 30 日內，你有多少次：	過去 30 日內		
	從來沒有	間中有	經常有
A. 吸食大麻	□	試過＿＿＿次	每日＿＿＿次／每星期＿＿＿次
B. 吸食白粉（海洛英）	□	試過＿＿＿次	每日＿＿＿次／每星期＿＿＿次
C. 服食 Fing 頭丸（亞甲二氧基甲基安非他明）	□	試過＿＿＿次	每日＿＿＿次／每星期＿＿＿次
D. 吸食 K 仔（氯胺酮）	□	試過＿＿＿次	每日＿＿＿次／每星期＿＿＿次
E. 吸食冰（甲基安非他明）	□	試過＿＿＿次	每日＿＿＿次／每星期＿＿＿次
F. 服食忽得	□	試過＿＿＿次	每日＿＿＿次／每星期＿＿＿次
G. 服食五仔	□	試過＿＿＿次	每日＿＿＿次／每星期＿＿＿次
H. 服食藍精靈	□	試過＿＿＿次	每日＿＿＿次／每星期＿＿＿次
I. 服食白瓜子	□	試過＿＿＿次	每日＿＿＿次／每星期＿＿＿次
J. 吸食可卡因	□	試過＿＿＿次	每日＿＿＿次／每星期＿＿＿次
K. 服食咳藥水	□	試過＿＿＿次	每日＿＿＿次／每星期＿＿＿次
L. 吸食有機溶劑（天拿水）	□	試過＿＿＿次	每日＿＿＿次／每星期＿＿＿次
M. 服食其他毒品〔不包括吸煙或飲酒〕請註明：＿＿＿＿	□	試過＿＿＿次	每日＿＿＿次／每星期＿＿＿次

性別： 1□ 男 2□ 女
年齡： ＿＿＿＿＿＿＿歲

閣下是否曾參加以下活動：（可選多項）
　1□個案輔導　　2□友義關愛隊義工活動

～ 多謝你的合作 ～

思動階梯

以下每個梯級表示吸毒者對於改變吸毒習慣的一種想法和態度，請選擇一個最貼切形容你現在處於的位置。

階梯	描述
10	我已經改變了吸毒的習慣，而我永不會走回頭路像以往那樣吸毒。
9	我已經改變了吸毒的習慣，但我擔心會走回頭路，所以要繼續努力。
8	我仍然有吸毒，但我將會開始改變吸毒的習慣，例如減少吸食的份量和次數。
7	我肯定會改變吸毒的習慣，亦準備好去計劃一下怎樣實行。
6	我肯定想改變吸毒的習慣，但我還未準備好去計劃怎樣實行。
5	我經常想到改變吸毒的習慣，但尚未計劃如何去改變。
4	我間中想過要改變吸毒的習慣，但尚未計劃如何去改變。
3	我甚少去想要改變吸毒的習慣，亦沒有計劃去改變。
2	我沒有想過要改變吸毒的習慣，亦沒有計劃去改變。
1	我享受吸毒亦決定永遠維持現狀，我沒有興趣去改變這種習慣。
0	我沒想過不吸毒，我的生活不能沒有毒品。

性別： 1☐ 男　　2☐ 女　　年齡：　＿＿＿＿＿歲

閣下是否曾參加以下活動：（可選多項）

1☐個案輔導　　　2☐友義關愛隊義工活動

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Appendix III

Treatment model of the family intervention

		Dual-orientation	
		Family Member / Relational Orientation	**Drug-Treatment Orientation**
3 Levels	**Strengthening**	• Increasing the internal and external resources of the family member *Goals: (1) balancing the mental and physical needs, and (2) preparing adequate resources for tackling crises* • Alleviating tangled or co-dependent relationship *Goals: Establishing healthy boundaries between the family member and drug user, and (2) increasing the flexibility in coping*	• Differentiating the drug taking behaviour and the true self of the drug user *Goals: (1) Establishing foundation of the family member's empathy towards the drug user, (2) Strengthening the family member's motivation to help the drug user*
	Engagement	• Rebuilding mutual impression between the family member and drug user *Goals: (1) Removing invalid or negative impression, and (2) Creating positive impression*	• Inviting the drug user to quit drug *Goals: (1) Providing opportunities for professional help, (2) exchanging thoughts between the family member and drug user, and (3) conveying concern to the drug user* • Managing drug use behaviour *Goals: (1) Increasing the motivation of quitting drug, and (2) reducing drug use*
	Consolidation	• Recognising relational changes *Goal: Maintaining the motivation to improve relationship*	• Cooperating between the family member and drug user in drug quitting *Goal: Increasing the efficiency of quitting drug*