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Examining the Impact of Community-Based Behavioral Drug Treatment: A Case Study from the Philippines

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Researches in the fields of psychology, medicine, health, and social work, indicate varying effects of demographic characteristics on the effectiveness of community-based behavioral drug treatment (CBDT) programs. This study evaluates the overall effectiveness of *Katatagan Kontra Droga sa Komunidad* (KKDK, Resilience Against Drugs in the Community), an evidence-informed and culturally adapted CBDT program implemented in the Philippines to address the issue of substance use as an addictive behavior. It also determines whether the program had differential impacts across age, gender and educational attainment. Pre-treatment surveys were administered to 355 CBDT program participants. Out of this, 203 were able to complete the intervention and accomplish the post-treatment survey. Outcome measures covered in the survey include substance use dependence behaviors, coping behavior, life skills, family support, family functioning and wellbeing. Findings revealed significantly better post-test outcome measures. Overall, analyses using mixed ANOVAs indicated that changes in outcome scores did not vary according to age gender, and educational attainment. There was one significant interaction effect of educational attainment and time on well-being, with elementary and high school graduates showing larger improvements in well-being from pre to post-test compared with post-high school graduates. Implications of the findings include further evidence on the overall effectiveness of the CBDT program (i.e. KKDK) in lowering substance use behaviors and enhancing life skills, coping behaviors, family support, family functioning and wellbeing of low to mild risk drug users across gender, age and educational attainment.

Keywords: community-based drug intervention, drug users, community intervention, substance use behaviors, Philippines

Recent studies on community-based and behavioral approaches to addressing substance use highlight the importance of establishing evidence of effectiveness (Curtis et al., 2017; Giesbrecht & Haydon, 2009; Hechanova et al., 2019; Sy & Hechanova, 2020). Community-based behavioral drug treatment (CBDT) is one approach to reducing drug use of mild risk users (Hechanova et al., 2018; Shakeshaft et al., 2002; United Nations Office on Drugs and Crime [UNODC], 2014). CBDT includes providing holistic care for recovering drug users from screening and assessment, treatment, provision of skills training, as well as access to health and wellness programs, livelihood opportunities, and social services within the locality (UNODC, 2014).

The CBDT approach recognizes the complexity of substance use behaviors as a health condition that has biological, social, and psychological dimensions (UNODC, 2014). Given this, it considers the contextual and cultural realities of the target participants as well as enables involvement of community and family members to ensure sustained recovery

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(Hechanova et al., 2018, UNODC, 2014). This mode of treatment is supported by recent studies demonstrating how culturally-adapted substance use interventions show more evidence of effectiveness than non-adapted interventions (e.g. Robles et al., 2018).

The United Nations Office on Drugs and Crime guidelines for CBDT emphasize that programs geared towards curtailing and preventing substance use behaviors in communities need to be both evidence-based as well as culturally appropriate (UNODC, 2014). However, literature on CBDT in the fields of psychology, medicine, social work, and health demonstrate varying development considerations and effects based on age (Burns et al., 2017; Evans et al., 2013; Foster et al., 2016; Gfroerer et al., 2003), gender (Greenfield et al., 2007; Niv & Hser, 2007; Possick & Itzick, 2018) and educational attainment (Sauer et al., 2018; Schepis et al., 2018). For example, previous studies have observed different behavioral patterns among males and females in relation to drug recovery (Fattore & Melis, 2016). Several studies have found that women, specifically, tended to demonstrate better drug recovery behaviors when involved in women-only treatment groups rather than mixed-gender (male and female) treatment groups (Possick & Itzick, 2018; Greenfield et al., 2007) whereas other studies found no significant differences (Niv & Hser, 2007). Also, participants in CBDT programs are adults whose ages span a wide range. Studies suggest that an individual's age can have an impact on the trajectory of substance use behaviors and recovery (Burns et al., 2017). For example, older adults tended to relapse when faced with temptations to drink or use substances and when coping with negative emotions, whereas younger adults tended to relapse in either positive or negative emotional states (Ramo & Brown, 2008). This implies that there is a wider variety in terms of the possible triggers of relapse for younger adults, which suggests that they could be more at-risk in this respect

Similarly, there are conflicting findings as to how education impacts the trajectory of substance use behavior and recovery. O'Shea and Salzer (2019) found that those with higher levels of educational attainment tended to experience poorer recovery outcomes, while Schepis and colleagues (2018), as well as Sauer and colleagues (2018), found that lower levels of educational attainment predicted poorer recovery outcomes. The former attributed these findings to a lack of interventions focusing on self-stigma and demoralization while the latter attributed these to a lack of resources. Thus, despite the emphasis on ensuring CBDT programs' evidence of effectiveness as well as cultural appropriateness, there seems to be a need to nuance the impact of these programs based on variations in participants' demographic profile. Doing so will help ensure the effectiveness of CBDTs at the community and individual levels.

This study evaluated the impact of *Katatagn Kontra Droga sa Komunidad* (KKDK or Resilience Against Drugs in the Community), an evidence-informed and culturally adapted community-based behavioral drug treatment program implemented in two cities in the National Capital Region. First, it determined changes in pre-treatment and post-treatment scores in drug use dependence indicating a decrease or discontinuation of addictive behaviors, as well as in the various program dimensions- coping behaviors, life skills, family support, family functioning, and well-being. Second, given the literature showing the importance of considering demographic characteristics in studying the impact of community-based behavioral drug treatment interventions, we examined whether the changes in scores varied according to age, gender and educational attainment. In so doing, the research hopes to add to the limited literature on how CBDT prevents substance use as a form of addictive behavior and to contribute to the knowledge and practice on CBDT development, implementation and evaluation.

The succeeding section describes KKDK as a community-based behavioral drug treatment program. It first narrates the program development process and how it was ensured that it is evidence-informed and culturally appropriate. It then describes the theoretical perspectives and approaches that guided its development as well as the different components of the program that will contextualize the method of evaluation as well as the presentation and interpretation of findings.

Resilience against Drugs in the Community Intervention Program

The Philippine government launched a massive anti-illegal drugs campaign upon the assumption of office of President Rodrigo Duterte in 2016. The campaign focused on both supply and demand reduction (Sadongdong, 2018). Demand reduction involved the incarceration and treatment of drug users, most of whom voluntarily surrendered upon the encouragement/threat/insistence of community officials and the local police (Sadongdong, 2018). According to the Dangerous Drugs Board of the Philippines (DDB), majority of those who surrendered were low to mild-risk drug users that can be treated at the level of the community (Cepeda, 2016). Thus, the Philippine's Anti-Illegal Drugs Strategy mandated the provision of culturally-appropriate and evidence-informed interventions in communities where there is a considerable number of identified drug users to curtail and eventually prevent substance use (Dangerous Drugs Board [DDB], 2016). Given the lack of community-based behavioral drug treatment interventions for low to mild risk users in the country, the Psychological Association of the Philippines (PAP) created the *Katatagan Kontra Droga sa Komunidad* (KKDK or Resilience Against Drugs in the Community).

Development of KKDK

To ensure its adherence to the UNODC (2014) mandate of ensuring that CBDT programs are evidence-informed and culturally-appropriate, PAP used a community-based participatory action research approach in designing the intervention (Collins et al, 2018). The process began with a needs analysis of Filipino drug users living in an urban community in Metro Manila. The interviews reflected the biopsychosocial nature of drug use (UNODC, 2014). Most of the participants were economically-challenged, unemployed and uneducated who grew up in violent communities experiencing parental physical and emotional abuse or neglect (Hechanova et al., 2018). The interviews also surfaced the role of family and friends in drug use as well as the importance of family in the drug users' motivation to change (Hechanova et al., 2018).

Data from the interviews showed that substance use was a means to escape from negative childhood experiences and various life problems, a form of recreation, and a way to ease hunger as well as to increase energy for work (especially manual work). Interviewers noted the importance of developing life skills and ensuring wellbeing of drug users as well as the importance of family support to ensure recovery from drug use (Hechanova et al., 2018).

Program Content and Implementation

KKDK (Psychological Association of the Philippines [PAP], 2017) was mainly made up of 12 modules. Six are focused on developing basic recovery skills while six are aimed at

improving the participants' life skills. Recovery skills include helping drug users understand the effects of drugs; the importance of change; coping with cravings; avoiding external triggers; saying no to drugs, and adopting a healthy lifestyle. The modules on life skills focus on helping users manage their emotions and thoughts; relating to others; rebuilding relationships especially with the family; solving problems; recognizing their strength; and making meaning of the past and finding hope for the future (PAP, 2017). The modules seek to instill behaviors that will enable the drug users' capacity to veer away from substance use. Each KKDK session covers one module and lasts for approximately two hours. Sessions are ideally conducted weekly thus completing the implementation for each group in 12 weeks. Physical and psychological safety of the drug users is given utmost consideration in program delivery. Thus, sessions were conducted in the parish churches or community halls near the drug user's residence.

The KKDK modules were developed based on the Counselors' Treatment Manual on Matrix Intensive Outpatient Treatment on Substance Abuse and Mental Health Services Administration (SAMHSA) and the United Nations Office on Drugs and Crime (UNODC) Trainer's Manual on Community-Based Services for people who use drugs in Southeast Asia (PAP, 2019). Cognitive Behavioral Therapy (CBT) and motivational interviewing were the fundamental approaches that guided the development of program content and materials. Motivational interviewing is a client-centered approach to counseling that seeks to enhance motivation for behavioral change by increasing the person's internal sense of discrepancy between present conditions and one's values and goals, encouraging self-efficacy and optimism as well as experiencing empathy (Miller & Rollnick, 2012). This approach is guided by the assumption that real behavioral change will have to come from within and not from the demand or prodding of other people (Miller & Rollnick, 2012). Cognitive Behavioral Therapy, on the other hand, aims to change substance use behaviors by reframing maladaptive emotions and cognitions (Beck, 1970). This assumes that substance use is a learned behavior that can be unlearned through interventions (Magill & Ray, 2009).

Biopsychosocial Model of Addictive Behavior

Both the development of KKDK and its evaluation used the Biopsychosocial Model of Addictive Behavior as theoretical anchor. This model put forth that biological, genetic, cognitive, personality, psychological, cultural, social, and environmental factors interact to develop addictive behaviors. As such, programs geared towards preventing and changing those behaviors must address numerous coexisting factors (Skewes & Gonzalez, 2013).

According to Skewes and Gonzales (2013), the biopsychosocial model "is a way to understand and explain the problem of addiction, but has not generated testable hypotheses as theories of behavior change like the Health Belief Model or the Theory of Reasoned Action/Theory of Planned Behavior (TRA/TPB)" (pp.62-63)". Nonetheless, this model points to the connection between the body and mind in producing addictive behaviors as well as how these behaviors progress in specific social and cultural milieu (Becona, 2018). More specifically, the extent by which an individual regards substance use behaviors as a form of physiological and psychological reward and the magnitude by which the person's social and cultural context enables drug use, will determine the likelihood of involvement in this activity (Griffiths, 2005).

Conceptual Framework

Using the biopsychosocial model as theoretical anchor, this study determined changes in substance use behaviors of drug users that went through the KKDK program. It also looked at the differences in the participants' coping behaviors, life skills, family support, family functioning and wellbeing before and after the intervention. As previously discussed, these factors were the psychological, social and cultural factors determined to be important in developing and implementing KKDK as a community-based behavioral drug treatment intervention. It likewise examined the varying effects of the program according to age, gender and educational attainment. Prior studies point to the effect of these demographic characteristics on the effectiveness of CBDT programs. The following hypotheses guided the study:

1. There will be a significant decrease in the substance use dependence behaviors of participants from baseline to posttest.
2. There will be a significant increase in the participants' coping behaviors, life skills, family support, family functioning, and wellbeing scores from baseline to posttest.
3. The changes in the participants' scores in the outcome measures (substance use dependence behaviors, coping behaviors, life skills, family support, family functioning, and wellbeing) will vary according to age, gender, and educational attainment.

The following section outlines the method used in evaluating the overall effectiveness of KKDK in reducing substance behaviors and in improving coping behaviors, life skills, family support, family functioning, and wellbeing. It also describes the analyses used to determine varying effects based on the participants' age, gender and educational attainment.

Method

A quantitative research design was used in the study. Survey questionnaires were administered to participants before and after going through the KKDK intervention program. The succeeding sections describe the participants of the study, the data gathering process, measures that were used as well as the procedures for data analysis.

Sample

A total of 355 participants completed the pre-treatment survey conducted in late 2017 to early 2018 and of this, 203 were able to complete the intervention and accomplish the post-treatment survey. A majority of the participants were male (74%), married (45%), and contractually employed (35%). Eighteen percent of the participants received elementary level education, while 53% of the participants completed high school. Participants' age ranged from 18 to 69 (M = 41.84; SD = 10.56), while age at first use of substance ranged from 10 to 55 (M = 25.78; SD = 9.78). Methamphetamines (90%) and cannabis (17%) were the top two choices of drugs.

Procedure

Ethics clearance (AdMUREC_16_074) was acquired from the University Research Ethics Office prior to data gathering and program implementation. Since KKDK was implemented in partnership with the city governments, participants were recruited from the latter's list of identified persons that used/were using illegal substances. The participants have all agreed to go through a community-based behavioral drug treatment.

Paper-and-pen surveys were administered to participants in groups before and after the program. The time interval between two assessment points varied from 12 to 14 weeks[1]. One researcher read the survey aloud, while the participants answered the survey by themselves. Participants who had difficulty following the researcher were assisted and guided by trained test administrators. No monetary incentives were given to the participants.

Measures

The questionnaire was originally in English and was translated to Filipino to ensure understanding of the respondents. Each scale was also back-translated to ensure accuracy of translation. The survey tools used are described in further details.

Demographic data. This included age, sex (male or female), civil status (single, married, or separated/widowed), occupational status (unemployed, contractual, or regular employment) educational attainment (grade school, high school, vocational course, or college) and age of first drug use.

Substance Use Dependence (SUD) Behaviors. This was measured using the ICD-10 checklist for mental disorders (for psychoactive substance use syndromes) (World Health Organization [WHO], 2004). It has nine items answerable by yes or no that asks about participants' SUD behaviors such as withdrawal, increase of use, cravings, and functioning within the past month. The nine items were summed, with higher scores indicating greater SUD behaviors. Internal consistency reliability was .70 at baseline and .74 at posttest.

Coping Behavior. This 25-item scale determined the degree by which participants used strategies to prevent relapse. Items were based on the Effectiveness of Coping Behaviors Inventory or ECBI developed by Litman et al. (1984). Respondents indicated the frequency by which they utilized these strategies on a 4-point scale (3=always, 2-often, 1=sometimes, 0=never). Internal consistency for baseline is .94 and for posttest is .96.

Life Skills. Ten items related to the life skills the intervention covered, such as relational skills, interpersonal skills, decision-making, problem-solving, coping with stress, and managing emotions, were adapted from Sharma's (2003) Life Skills questionnaire. The researchers added two interpersonal skills items that are related to asking and extending

[1] Note that the length of implementation of KKDK community-based behavioral drug treatment program varies based on the regularity of the session in each group. The session was supposedly weekly (12 weeks for the 12 modules) but there were weeks where the session was cancelled due to varying reasons

forgiveness, which was taught in one of the modules. Participants indicated their ability to demonstrate different life skills at present using a 5-point scale (1 = strongly disagree, 5 = strongly agree). The 12 items were averaged, with higher scores indicating greater life skills. Internal consistency at both baseline and posttest is .90.

Family Support. Participants answered four items from Zimet and colleagues' (1988) Multidimensional Scale of Perceived Social Support to indicate their perception of help and support from their family members. The items were rated on a 7-point scale (1 = very strongly disagree, 7 = very strongly agree) and were averaged, with higher scores indicating higher levels of perceived family support. Internal consistency for baseline is .88 and for posttest is .81.

Family Functioning. The overall health of family relationships was measured using the 12-item general functioning subscale of the McMaster Family Assessment Device (De Haan et al., 2015). Participants answered the items using a 4-point scale (1 = strongly disagree, 4 = strongly agree). The 12 items were averaged, with higher scores indicating higher levels of family functioning. Internal consistency is .69 at baseline and .75 at posttest.

Wellbeing. Participant wellbeing was measured using WHO-5 (WHO, 1998). Participants answered five items regarding how frequently they experienced positive behaviors and emotions in the past two weeks using a 6-point scale (0 = never; 5 = always). The 5 items were averaged, with higher scores indicting better wellbeing. Internal reliability of the scale ranged between .90 at baseline and .93 at posttest.

Data Analysis

We conducted all analyses using SPSS 26.0. To account for missing data, we used multiple imputations with fully conditional specification and included all baseline and posttest measures to improve estimation (Sterne et al., 2009). Analyses were based on pooled results from 20 imputed datasets (Graham, 2009). We compared results of analyses using imputed data with complete-case analyses to test the robustness of the results.

To examine the overall effectiveness of the program, we conducted paired t-tests to compare baseline and post-treatment scores for each outcome measure. Given negatively skewed distributions for some variables, nonparametric tests and transformation using square root and logarithm functions were conducted. Results were similar for nonparametric and parametric tests and when using the transformed and non-transformed versions. Therefore, we report parametric results with non-transformed variables for ease of interpretation.

In investigating whether changes in outcomes were related to age, gender, and educational attainment, we examined the interaction of these variables with the time factor in mixed model ANOVAs. Specifically, we used two-way mixed models with the demographic variable as between-groups factor and time point as within-groups factor.

Results

Preliminary Analyses

Given the high attrition rates, we conducted t-tests and chi-square tests to assess if there were significant differences between participants who completed both baseline and post-treatment questionnaires and those who had completed only the baseline questionnaire. There were no significant differences between completers and non-completers of the posttest on the majority of the demographics and outcome variables. However, we found significant differences in age – those who completed were significantly older (M_{age} = 43.17, *SD* = 10.10) than non-completers (M_{age} = 39.97, *SD* = 10.94), *t* (336) = –2.77, *p* = .006. Completers also reported significantly lower pretest substance use dependence behaviors (*M* = 0.58, *SD* = 1.04) than non-completers (*M* = 1.01, *SD* = 1.62), *t* (237) = 2.84, *p* = .005).

Primary Analyses

Results revealed that participants reported few SUD behaviors (*M* = 0.77) at baseline, and these participants reported slightly fewer drug dependence behaviors (*M* = 0.48) at posttest (see Table 1). Participants reported significantly higher scores in all of the other outcome measures at posttest than at baseline. Coping behavior increased from a mean score of 2.11 at baseline to 2.45 at posttest. Life skills also increased from a mean score of 4.33 at baseline to 4.58 at posttest. For family support, participants' scores increased from a mean score of 6.31 on a scale of 1 to 7 at baseline to 6.61 at posttest. For family functioning, participants' mean score slightly increased from 2.91 at baseline to 3.00 at posttest. For well-being, participants' scores increased from a mean score of 4.29 at baseline to 4.60 at posttest (see Table 1).

The researchers examined whether the changes in scores in outcome measures varied according to age, gender, and educational attainment by examining the interaction of these variables with the time factor in mixed model ANOVAs. We conducted mixed model ANOVAs on data with complete cases given that main effect results were mostly similar with main effect results using multiple imputation. Results indicated that the change in outcomes did not vary according to age and gender. There was, however, a significant interaction effect of educational attainment and time on well-being, *F* (2, 186) = 4.26, *p* = .016, η_p^2 = .04. The descriptive statistics illustrated in Figure 1 indicate that improvement in well-being was more evident among participants who completed elementary and high school education than participants who completed post-high school education. Although the change in well-being scores of participants who had post-high school education at pretest (*M* = 4.60, *SD* = 0.13) and posttest (*M* = 4.66, *SD* = 0.11) was small, participants who had elementary education reported a larger increase in well-being scores from pretest (*M* = 4.06, *SD* = 0.18) to posttest (*M* = 4.67, *SD* = 0.15). Participants who completed high school also reported a slight but relatively larger increase in well-being scores from pretest (*M* = 4.26, *SD* = 0.09) to posttest (*M* = 4.54, *SD* = 0.07) compared with participants who had post-high school education. All other interaction effects of time with educational attainment were statistically non-significant.

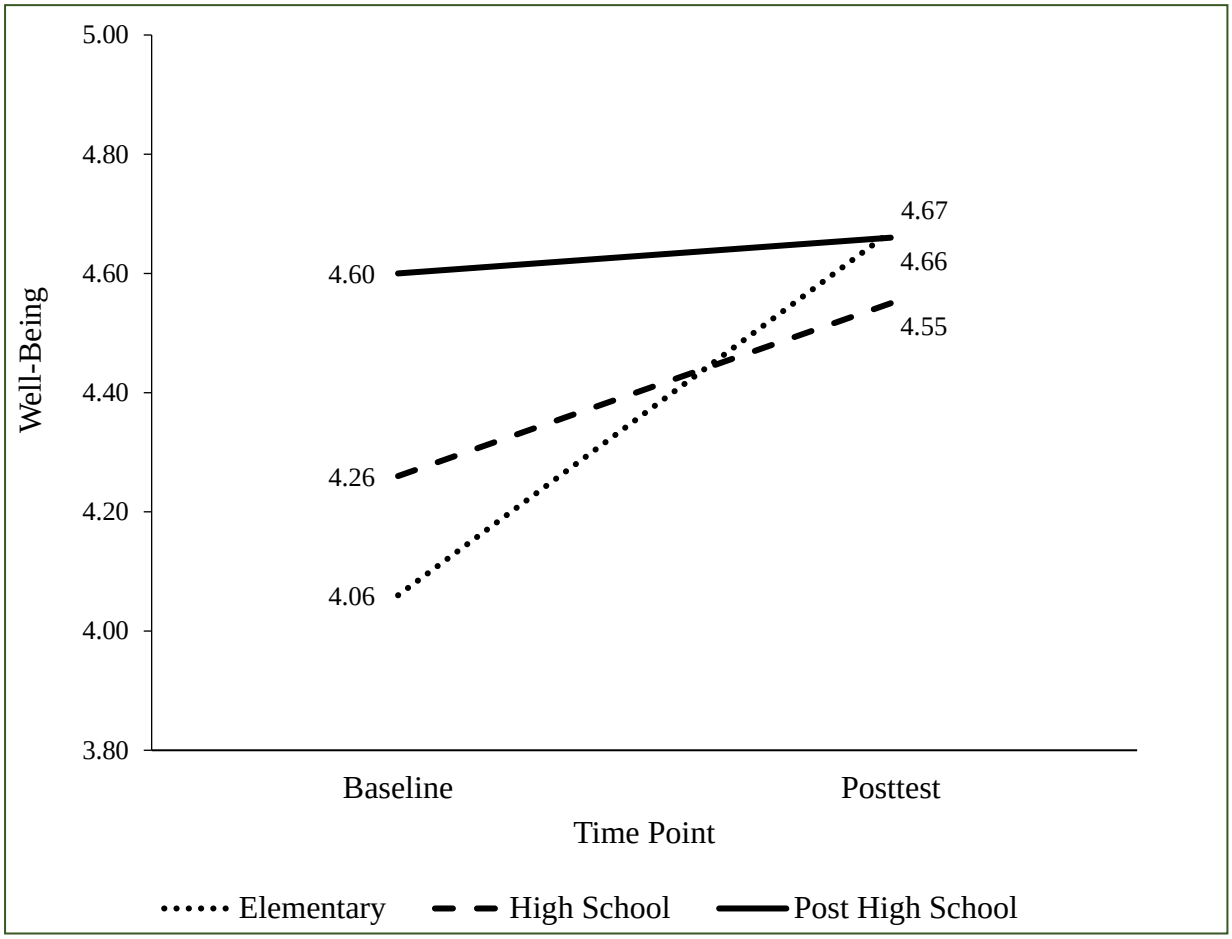
Table 1

Statistical test results for paired differences of baseline and posttest measures using complete cases and pooled imputed datasets

Measure	Complete cases					Multiple imputation (N = 355)			
	N	Baseline *M (SE)*	Posttest *M (SE)*	*t* statistic (*p* value)	Cohen's *d*	Baseline *M (SE)*	Posttest *M (SE)*	*t* statistic (*p* value)	Cohen's *d*
Substance use dependence	192	0.58 (0.08)	0.42 (0.08)	1.66 (.098)	0.15	0.77 (0.07)	0.48 (0.07)	3.09 (.002)	0.19
Coping behavior	200	2.20 (0.04)	2.47 (0.05)	–4.77 (<.001)	–0.42	2.11 (0.04)	2.45 (0.05)	–6.06 (<.001)	–0.40
Life skills	199	4.33 (0.03)	4.58 (0.03)	–7.57 (<.001)	–0.60	4.29 (0.03)	4.56 (0.03)	–8.11 (<.001)	–0.47
Family support	198	6.35 (0.06)	6.63 (0.04)	–4.83 (<.001)	–0.39	6.31 (0.05)	6.61 (0.04)	–5.18 (<.001)	–0.32
Family functioning	199	2.94 (0.03)	3.01 (0.03)	–2.32 (.021)	–0.16	2.91 (0.02)	3.00 (0.03)	–2.75 (.007)	–0.15
Well-being	199	4.35 (0.07)	4.58 (0.06)	–3.81 (<.001)	–0.27	4.29 (0.06)	4.57 (0.06)	–4.57 (<.001)	–0.23

Figure 1

Two-way interaction between assessment time point and educational attainment on well-being scores



Note. Values are mean scores.

Discussion

The findings reflect the overall effectiveness of KKDK as a community-based behavioral drug treatment program in decreasing substance use behaviors and in improving the coping behavior, life skills, family support, family functioning, and well-being of low to mild risk drug users. These aspects were found important in drug recovery based on the participatory process conducted to ensure that the program is evidence-informed and culturally appropriate. These findings generally support the findings of previous studies emphasizing the effectiveness of CBDT (Hechanova et al., 2018; Shakeshaft et al., 2002; UNODC, 2014).

In determining varying effects of the program based on the participants' age, gender and educational attainment, findings only reflect a significant difference in the effect of the program on the well-being of participants based on educational attainment. Specifically, those with an educational attainment of grade school until high school tended to have larger improvements in well-being from pre-test to post-test than those with post-high school education. Previous studies linked education to individual resources, particularly on having

access to knowledge on substance use and guidance from educators (Sauer et al., 2018). Perhaps, the KKDK program became an avenue for those with lower educational attainment to increase their knowledge and capabilities in critical recovery areas - basic recovery, coping behaviors, life skills and family relationships. The aggregate effect of learning in these areas may have increased the frequency by which they experienced positive behaviors and emotions (enhanced wellbeing).

Although there were relatively lower levels of improvement on the wellbeing of those with higher educational attainment, it is important to note that they already have higher wellbeing scores in both pretest and posttest. This may similarly be explained by the access to resources and information that these participants have. Previous literature noted the association between an individual's wellbeing and the resources that a person has (e.g. Binder, 2014). The non-significant improvement in post-treatment wellbeing scores, on the other hand, may be explained by other factors that are important to the wellbeing of those with higher educational attainment. For example, O'Shea and Salzer (2019) pointed out how those with higher educational attainment have a higher concern over the stigma associated with substance use. Although it can be argued that CBDT's strategy of involving the community may lower experiences of stigma among recovering drug users (UNODC, 2014), stigma was not a topic directly discussed and addressed by the KKDK program.

Overall, the findings show the applicability of KKDK in addressing substance use behaviors across gender, age and educational attainment. It seems like the adaptation of the program to the context and culture of the participants captured the needed content and delivery considerations to ensure program relevance and utility. However, as discussed earlier, nuancing may be needed based on the drug user's educational attainment to make sure that the program also positively impacts on the recovering drug user's wellbeing. Implications of these findings are discussed in the succeeding sections.

Limitations and Implications

The program had a large attrition rate that consequently had an impact on the results of this study. Attrition may have been due to internal (lack of interest in the program) or external factors (work schedules or family concerns). Future studies, may use a qualitative approach to gain a deeper understanding of the experience of KKDK participants. Since the findings reflect relatively small to moderate effect sizes, a qualitative study may not just help in understanding attrition but also determine ways to improve program impact. Having a control group will likewise provide a better perspective on program effectiveness; although this needs to be done with great ethical considerations. For example, despite the recognition that having a control group would have significantly enhanced the robustness of the current research design, the circumstances within which the KKDK was implemented (i.e. the government's war on drugs and the extrajudicial killings of drug users) would have made it unethical to create a control group. Being in this group could have endangered the lives of people. Future implementation of KKDK may allow for a wait list control group.

Implications for Practice

The findings of the study highlight the effectiveness of the twelve-week community-based behavioral drug treatment program in reducing substance use behaviors among drug users. This emphasize the utility of using a biopsychosocial perspective that considers not just biological but psychological, social and cultural factors in developing and implementing

interventions that address addictive behaviors. Results of the study lend support to psychologists, social workers, as well as health practitioners that advocate for CBDT. As such, similar programs can be developed in other countries/contexts that seek to address the substance use. The process that KKDK went through can be replicated so that content and manner of implementation will be mindful of the drug users' social and cultural realities.

Results also show varying effects of the program on the wellbeing of participants if analyzed based on educational attainment. The needs analysis phase of this study focused on the urban poor groups that tended to have lower educational attainment. The Dangerous Drugs Board's (DDB) data (Students from UP, 2016) shows that among drug rehabilitation patients from 2009 to 2014, 41.28% have post-high school education, which suggests that substance use problems affect individuals with varying educational backgrounds and socioeconomic statuses (Patrick et al., 2012). Perhaps a needs analysis that includes those with higher educational attainment and higher SES can widen the scope of the program. Doing so may reflect a stronger basis for creating adjustment on program content (e.g. including stigma) for these groups of drug users and may help shape the design and implementation of CBDT programs that will be developed in the future.

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