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Subjective outcome evaluation of the community-based P.A.T.H.S Project: views of program implementers

Abstract: The present study adopted subjective outcome evaluation to examine program effectiveness from the views of implementers (N = 375) who implemented the community-based Tier 2 Program of the Project P.A.T.H.S. in Hong Kong. The results revealed that most of the program implementers were satisfied with the program content, their own performance, and program benefits. In agreement with previous studies, the satisfaction ratings of both program content and implementer performance positively predicted perceived program benefits. Regarding the influences of different program delivery approaches, programs with the "interest-enhancement" (INT) element received a more positive evaluation from implementers than did the programs without that element. For programs with the "work-related" (WORK) element, parental involvement significantly raised implementers' satisfaction ratings on their own performance. The current findings provided evidence for the effectiveness of the P.A.T.H.S. Tier 2 Program from the perspective of the implementers.

Keywords: at-risk adolescents; Chinese adolescents; positive youth development; Project P.A.T.H.S.; subjective outcome evaluation.

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Introduction

Adolescence has been widely considered as a risky developmental period marked by the emergence and escalation of problematic behaviors, such as substance abuse, self-harm and suicide, and unhealthy lifestyles [1, 2]. In Hong Kong, adolescent developmental issues such as mental health problems deserve public concern [3, 4]. Shek [5] pointed out that for adolescents in Hong Kong nowadays, substance abuse, shoplifting, mental health problems, underage sex, and youth unemployment are all growing problems. Besides, family and parenting problems are common issues in families with adolescent members [5]. The prevalence of adolescent developmental issues is an alarm for the current and future society development of Hong Kong. Hence, there is an urgent need to prevent and reduce adolescent risk behavior.

Traditional problem-based adolescent prevention interventions were designed according to specific developmental problems. For example, the "Alcohol treatment targeting adolescents in need (ATTAIN)" Project was established to cognitively and behaviorally reduce alcohol and marijuana use among minority juvenile offenders in the US [6]. However, there are many criticisms of such a "problem-based" approach. First, most of the problem-based interventions had unsatisfactory long-term effects [7, 8]. Secondly, it is redundant and not practical to develop prevention programs for each specific adolescent developmental issue because of the correlated nature of problematic behaviors [5]. Lastly, over-emphasis on adolescent "problems" and "weaknesses" may stigmatize adolescents.

In the past several decades, the strength-based approach has emerged to overcome the shortcomings of the traditional paradigm [9]. Martin Seligman stated that "Psychology is not just the study of weakness and damage; it is also the study of strength and virtue. Treatment is not just fixing what is broken; it is nurturing what is best within ourselves" [10, p. 4]. The strength-based approach emphasizes integrated youth development from an ecological perspective. It is argued that young people would be less likely to engage in risk behaviors if they

acquire psychosocial competencies [11]. With specific reference to the Hong Kong context, the Project "P.A.T.H.S. (Positive Adolescent Training through Holistic Social Programs)" that has been launched since the 2005/2006 school year is a good example of the positive youth development approach.

Funded by the Hong Kong Jockey Club Charities Trust (HKJCCT), the P.A.T.H.S. Project was initiated with the collaboration of the Education Bureau, Social Welfare Department, and a research team comprising academics from five universities in Hong Kong. The P.A.T.H.S. Project has received overwhelmingly positive feedback during its first-stage of implementation [12, 13]. Different stakeholders held positive views on the effectiveness of the program. Hence, the project was extended for another cycle for the participating schools to consolidate the implementation experience. Therefore, till the 2011/2012 school year, the project had been implemented on the basis of school contexts for 7 years. To draw an all-around picture of the P.A.T.H.S. Project, process evaluation and outcome evaluation are the two basic forms used to evaluate the effectiveness of the programs. Given that the implementation process refers to program adherence, program receiver's engagement, goal attainment, and process-outcome linkage [14, 15], process evaluation methods including interim evaluation [16] and systematic management information collection based on a co-walker scheme [17] were adopted in evaluating the P.A.T.H.S. Project. On the other hand, objective and subjective outcome evaluation methods were employed to focus on answering questions like whether or not the intended program goals and objectives have been met, as well as whether or not the program is effective and efficient [18]. The existing evaluation studies have verified the success of the school-based programs by revealing high implementation quality, less problematic behaviors and enhanced positive psychosocial constructs in student participants, and high satisfaction ratings from different stakeholders [19–21].

However, researchers have found that clinical and community-based programs are more effective in changing specific behaviors than school-based programs [22]. For example, Franklin and Corcoran reviewed the programs and practices for preventing adolescent pregnancy [23]. They found that community-based programs (such as family planning clinics and girls clubs) were more efficient in reducing the pregnancy rates than school-based programs. Therefore, to further promote the P.A.T.H.S. Project in the community context, the third phase of the project implementation was formally started in 2013. During the third phase of implementation, community-based youth enhancement programs were developed and implemented by social workers in non-governmental organizations (NGOs), who also collaborated with school teachers [24]. In the first 2 years of community-based program implementation, existing studies showed that the community-based P.A.T.H.S. Projects were as effective as the school-based ones [25–28]. Therefore, the present study attempted to replicate these findings in the third year implementation of community-based P.A.T.H.S. Project and to find out the factors influencing the effectiveness of the programs.

Two tiers of programs are included in the P.A.T.H.S. Project targeting different types of adolescents. The Tier 1 Program is a curricula-based program attempting to promote the development of all junior secondary school students in Hong Kong. On the other hand, Tier 2 Program targets students with greater psychosocial needs in behavioral, emotional, or social domains that take up nearly one-fifth of the population [19]. Adopting the subjective outcome evaluation method, the present study focused on the effectiveness of the Tier 2 Program implemented in the year 2015.

One of the important features of outcome evaluation is that it could assess the perceptions and satisfaction levels of various important stakeholders [29]. There is a consensus in the evaluation literature about the importance of involving views of multiple stakeholders, such as program receivers, program implementers, evaluators, and parents if the receivers are children [30–32]. However, there is a research gap that most empirical studies have been devoted to understanding the program participants' views and neglected the views of other stakeholders [33]. There are several justifications for including the views of implementers in the Tier 2 Program. First, data based on different stakeholders tend to be more objective because it could achieve triangulation and avoid single-rater bias [34]. Secondly, amongst all stakeholders, program implementers have the most first-hand information about how the program had been delivered, how the receivers reacted, and how the implementers themselves performed [35]. Thirdly, evaluating program quality based on the implementers' perspective shows respect to the frontline professionals and provides them with opportunities to have self-reflection [33]. Therefore, implementers' perceptions of the Tier 2 Program would be evaluated in the current study.

To find out the factors influencing the effectiveness of the Tier 2 Program, two important aspects would be considered in the present study. First, while different approaches can be used in implementing the Tier 2 Program, four types of approaches are most commonly employed. These included: (a) adventure-based counseling approach

(ABC), (b) volunteer training and service (VTS) such as volunteerism, (c) work-related (WORK) approach such as visiting workplaces and skills development, and (d) interest-enhancement (INT) approach such as flower arrangement learning course. A combination of two or more types of approaches is also common in implementing the Tier 2 Programs.

The ABC and VTS approaches were both developed on the basis of experiential learning theory. "ABC" is an experiential counseling technique that focuses on adolescents' group cooperation and interpersonal skills [36, 37]. Activities adopting the ABC element help increase student participants' self-esteem and strengthen their social maturity in a group-counseling environment [38–40]. "VTS" activities also have positive influences on adolescents' social development [41]. Stressing on a "non-obligated" helping [42], volunteerism is conducive to promoting prosocial attitudes and reducing problematic behaviors in adolescents [43]. Previous studies have consistently revealed the benefits of these two approaches [20, 21]. Shek, Yu, and Ho [20] compared participants' ratings of the programs with different delivery modes and found that programs incorporating both ABC and VTS elements were more effective than programs incorporating solely ABC, solely VTS, or other delivery approaches [25]. However, "WORK" and "INT" activities also benefit adolescents' development practically. As for the importance of "WORK" element, Whiston and Quinby [44] reviewed several school counseling programs and concluded that career-related programs effectively promoted students' vocational identity, self-understanding, and the skills of connecting abilities with career choices. Regarding the "INT" element, empirical studies showed that engaging in constructive extracurricular activities such as basketball or marching band promoted adolescents' school achievement and decreased their risky behaviors in the long run [45]. Hence, interest enhancement activities are able to trigger the intrinsic motivation of the adolescents as a motivational strategy [46]. Very few studies were concerned about the importance and effectiveness of the "WORK" and "INT" delivery approaches in the past. Accordingly, in the present study, WORK and INT in addition to VTS and ABC were taken into consideration to explore the effectiveness of different delivery approaches.

Apart from diverse approaches, the community-based Tier 2 Programs were also different amongst themselves with respect to parental involvement. For some programs, only students with greater psychosocial needs participated in the activities. However, in some other programs, parent(s) were also involved. Some past studies have examined the effect of parental involvement and home-school relationship on adolescents' academic performance (e.g. 47, 48). Effective parental involvement in students' education not only strengthens children and adolescents' academic achievement and self-regulatory skills [49] but also promotes teachers' teaching efficacy and parents' own personal efficacy [50]. However, possible barriers to the cooperation between parents and teachers also exist. For parents, they may have inadequate skills without proper instructions. For teachers, they have to face the uncertainty when dealing with diverse families [48]. Although the importance of parental involvement in adolescents' education has been well acknowledged, the effectiveness of parental involvement in positive youth development programs has seldom been considered in previous studies. Hence, the current study would try to fill this research gap.

Based on the aforementioned background, the present study evaluated the effectiveness of the Tier 2 Program of P.A.T.H.S. Project in Hong Kong in the year 2015 based on the program implementers' views. Several research questions to be addressed and hypotheses to be examined in the present study are listed as follows:

1. How satisfied were the program implementers regarding the program content, their performance, and program benefits? As the previous studies steadily demonstrated positive feedback from the program implementers [21, 28], we hypothesized that program implementers would have a positive evaluation of the program content (Hypothesis 1a), implementer performance (Hypothesis 1b), and program benefits (Hypothesis 1c).

2. What are the inter-relationships amongst the ratings of program content, implementer quality, and program benefits? Based on previous findings, it was hypothesized that satisfaction ratings of the three aspects would be significantly associated with each other (Hypotheses 2a, 2b, and 2c). Furthermore, we hypothesized that satisfaction ratings of program content (Hypothesis 2d) and implementer quality (Hypothesis 2e) would both significantly predict that of program effectiveness.

3. Do grade differences exist when the program implementers appraise the program content, implementer quality, and program benefits? Grade differences were found in the Tier 1 Program from the perspective of implementers (e.g. 24), with lower-grade teachers perceived higher program effectiveness and their own performance than did higher-grade teachers. However, grade differences among implementers in the Tier 2 Program were seldom found [27, 28]. Hence, using the findings based on the Tier 1 Program, we

expected there would be grade differences (Hypothesis 3).

4. How would different delivery modes affect implementers' satisfaction ratings of the programs? Based on the findings of previous studies [28], we hypothesized that the ABC/VTS/WORK/INT elements would have positive influences on the effectiveness of the programs (Hypothesis 4).

5. How would parental involvement influence implementers' perceived program effectiveness? A few previous studies have implied the positive impacts of involving teachers or parents [47, 48]. Based on these findings, we hypothesized that programs involving parent(s) would receive a more positive evaluation from the implementers than did programs not involving parent(s) (Hypothesis 5).

Methods

To understand the perceptions of implementers toward the program, researchers from the Project P.A.T.H.S. invited the implementers to complete a Subjective Outcome Evaluation Form for Instructors (Form D). It is a self-administrated questionnaire with clear guidelines and instructions. In the third year of implementation, we received 375 completed questionnaires, with nine questionnaires with unclear information on the grade of the students.

Instruments

The Subjective Outcome Evaluation Form for Implementers (Form D) was employed at the end of the program. This measure covers three parts, which include (a) instructors' views on the program, (b) instructors' views on themselves, and (c) instructors' perceived benefits of the program on the participants. Moreover, to collect additional comments from implementers, another four open-ended questions were also used to understand "(a) important thing(s) the instructors have learned in the program, (b) thing(s) that the instructors appreciate the most in the program, (c) difficulties the instructors encountered, and (d) areas of the program that need to be improved". In the present study, only the structured items were analyzed and reported. All structured items were assessed with items on a 6-point scale (from "strongly disagree" to "strongly agree").

Besides, additional information about the program was collected from the program implementers. Research assistants assisted to categorize the program delivery approaches according to the activities the NGOs conducted. On the other hand, types and number of participants for every program were also collected.

Data analyses

The basic units of analysis were individual data of the implementers in the current study. SPSS for Windows, version 23.0 (IBM-SPSS Inc, Chicago, IL, USA) was used to generate all statistical analyses. First, the characteristics of the Tier 2 Program (delivery approach and types of participants) were categorized. Then, percentages of responses of the implementers regarding their views on the program (i.e. program qualities, program implementer qualities, and program benefits) were analyzed by descriptive statistics to test Hypotheses 1a–1c. Moreover, the relationships among the above three areas were examined by Pearson correlation and multiple regression analyses to test Hypotheses 2a–2e. To explore grade differences of implementers' subjective outcome evaluation (Hypothesis 3), a multivariate analysis of variance (MANOVA) was conducted using the evaluation of three aspects (i.e. program content, implementer performance, and program benefits) as dependent variables.

To investigate the influences of different delivery approaches and parental involvement on perceived program effectiveness, we first recoded the program approaches into four dichotomous variables for data analysis. For each of the four program approach variables (i.e. ABC, VTS, WORK, and INT), if the corresponding element was adopted in the program, the variable was coded as "1", otherwise, it was coded as "0". Almost all programs adopted a combination of two or more elements. Likewise, the "parental involvement" variable was also coded according to the types of participants. Specifically, programs that included parent(s) in the activities were coded as "1" for the "parental involvement" variable, while those without parental involvement coded as "0". To test Hypotheses 4 and 5, a series of ANOVA analyses were also performed with the three subjective outcome evaluation aspects (i.e. program content, implementers, and benefits) as dependent variables, and the four program approaches (ABC, VTS, WORK, and INT) as well as parental involvement as independent variables.

Results

In the year 2015, a total of 21 NGOs conducted 41 projects of the P.A.T.H.S. Tier 2 Programs. Most of the projects adopted more than one delivery approach. For example, 22 projects (N = 189) adopted the "ABC", "VTS", and "INT" elements at the same time, while eight projects (N = 59) combined the four elements simultaneously. As demonstrated in Table 1, among all, the "ABC" element was the most frequently used (n = 40), followed by the "VTS" (n = 39), and "INT" (n = 32) elements. The "WORK" element was also adopted by several projects (n = 11). Besides the commonly adopted four approaches, parent(s) were actively involved in 12 projects.

As shown in Table 2, all of the three rating scales showed good internal consistency ($\alpha = 0.89 - 0.91$). Cronbach's α coefficient of the overall scale was 0.94, suggesting that the scales are reliable.

The results of the descriptive data analysis showed that the program implementers were highly satisfied with the program content (Table 3). Almost all implementers agreed that "the quality of the service was high" (99.2%) and "on the whole, I am satisfied with the service

Table 1: Summary of the characteristics and effectiveness of the Tier 2 Programs.

Program approach[a]	Parental involvement	Average number of student participants	Average number of parent participants	Average number of teacher participants	Average program attendance (%)	Mean of overall effectiveness (M, SD)
ABC	Yes (n = 12, N = 95)	129.8	31.2	11.9	87.75	(5.07, 0.35)
	No (n = 30, N = 260)	88.0	N/A	8.3	84.62	(4.99, 0.40)
	Total (n = 40, N = 355)	99.3	8.4	9.3	85.46	(5.01, 0.39)
VTS	Yes (n = 11, N = 92)	131.7	31.8	12.1	87.81	(5.07, 0.35)
	No (n = 29, N = 250)	86.1	0.0	7.8	84.48	(4.98, 0.42)
	Total (n = 39, N = 342)	98.6	8.7	9.0	85.39	(5.01, 0.40)
WORK	Yes (n = 3, N = 21)	98.3	15.6	14.3	85.90	(5.33, 0.33)
	No (n = 8, N = 58)	90.4	0.0	6.7	88.06	(4.95, 0.44)
	Total (n = 11, N = 79)	92.5	4.2	8.7	87.48	(5.05, 0.45)
INT	Yes (n = 8, N = 54)	125.5	24.9	11.8	87.53	(5.17, 0.34)
	No (n = 26, N = 222)	87.4	0.0	7.5	84.16	(5.00, 0.41)
	Total (n = 32, N = 276)	94.9	4.9	8.3	84.82	(5.03, 0.40)
Total	Yes (n = 12, N = 95)	128.9	31.0	11.8	87.72	(5.07, 0.35)
	No (n = 31, N = 280)	84.3	0.0	8.0	84.89	(4.99, 0.42)
	Total (n = 41, N = 375)	95.6	7.9	9.0	85.61	(5.01, 0.40)

ABC, adventure-based counseling; VTS, volunteer training and service; WORK, work related; INT, interest-enhancement. n, Number of projects; N, Number of implementers; N/A, not applicable. [a]For each of the four program approach variables (i.e. ABC, VTS, WORK, and INT), if the corresponding element was adopted in the program, the variable was coded as "1"; otherwise, it was coded as "0". Almost all programs adopted a combination of two or more elements.

Table 2: Mean, standard deviations, Cronbach's α's, and mean of inter-item correlations among the variables by grade.

	Grade 7		Grade 8		Grade 9		Overall	
	M(SD)	α(Mean[a])	M(SD)	α(Mean[a])	M(SD)	α(Mean[a])	M(SD)	α(Mean[a])
Program content (eight items)	5.07(0.40)	0.88(0.49)	5.01(0.47)	0.89(0.50)	5.08(0.50)	0.90(0.53)	5.07(0.44)	0.89(0.51)
Program implementers (eight items)	5.04(0.44)	0.89(0.52)	5.12(0.47)	0.92(0.58)	5.10(0.45)	0.89(0.49)	5.09(0.45)	0.90(0.53)
Program benefits (eight items)	4.85(0.51)	0.91(0.55)	4.86(0.52)	0.91(0.55)	4.93(0.58)	0.90(0.54)	4.88(0.53)	0.91(0.55)
Total effectiveness (24 items)	4.98(0.38)	0.94(0.39)	4.99(0.40)	0.94(0.38)	5.01(0.43)	0.94(0.40)	5.01(0.40)	0.94(0.40)

[a]Mean: inter-item correlations.

I conducted" (99.5%). Almost all (99.7%) of the implementers "would recommend others who have similar needs to participate in this program". As demonstrated in Table 4, implementers were also very satisfied with their own performance in the activities. Nearly all implementers indicated that "my working skills were good" (99.7%)

and "my attitudes were good" (99.7%). They were "satisfied with my performance on the whole" (99.7%). Furthermore, implementers believed that the Tier 2 Programs had benefits for the participants (Table 5). They indicated that the program "enhanced the participants to grow" (98.4%) and "participants have positive changes after joining the

Table 3: Summary of the views of program implementers on the program.

	Implementers with positive responses (rating 4–6) across different grades							
	Grade 7		Grade 8		Grade 9		Overall	
	N	%	N	%	N	%	N	%
1. The activities were well planned	207	98.1	87	100	68	100	371	98.9
2. The quality of the service was high	208	98.6	87	100	68	100	372	99.2
3. The service provided could meet the participants' needs	209	99.1	85	97.7	67	98.5	370	98.7
4. The service delivered could achieve the planned objectives	208	98.6	85	97.7	66	97.1	368	98.1
5. I could provide the service participants wanted	209	99.1	84	96.6	67	98.5	369	98.4
6. The program provided many chances for participants to interact with each other	210	99.5	86	98.9	66	97.1	371	98.9
7. I would recommend others who have similar needs to participate in this program	210	99.5	87	100	68	100	374	99.7
8. On the whole, I am satisfied with the service I conducted	209	99.1	87	100	68	100	373	99.5

All items are on a 6-point Likert scale with 1 = strongly disagree, 2 = disagree, 3 = slightly disagree, 4 = slightly agree, 5 = agree, 6 = strongly agree. Only respondents with positive responses (Options 4–6) are shown in the table.

Table 4: Summary of the views of program implementers on their own performance.

	Implementers with positive responses (rating 4–6) across different grades							
	Grade 7		Grade 8		Grade 9		Overall	
	N	%	N	%	N	%	N	%
1. I used my professional knowledge	209	99.1	87	100	68	100	373	99.5
2. My working skills were good	210	99.5	87	100	68	100	374	99.7
3. I was well prepared for the program	206	97.6	85	97.7	68	100	368	98.1
4. I understood the needs of the participants	208	98.6	85	97.7	66	97.1	368	98.1
5. I cared about the participants	209	99.1	87	100	68	100	373	99.5
6. My attitudes were good	210	99.5	87	100	68	100	374	99.7
7. I had much interaction with participants	208	98.6	87	100	67	98.5	371	98.9
8. On the whole, I am satisfied with my performance	210	99.5	87	100	68	100	374	99.7

All items are on a 6-point Likert scale with 1 = strongly disagree, 2 = disagree, 3 = slightly disagree, 4 = slightly agree, 5 = agree, 6 = strongly agree. Only respondents with positive responses (Options 4–6) are shown in the table.

program" (98.1%). They also believed that in the future, "the participants would join similar programs if needed" (98.4%). Therefore, the Hypotheses 1a, 1b, and 1c in the present study were well supported.

Regarding the associations among satisfaction ratings on program content, implementer quality, and program benefits, correlation analyses were conducted. As expected, significant positive correlations among program content, implementer quality, and perceived program benefits were found, with correlation coefficients ranging from 0.52 to 0.68 (p < 0.001). The results supported Hypotheses 2a, 2b, and 2c. According to the results of multiple regression analyses, implementers' ratings on program effectiveness were significantly predicted by their satisfaction ratings on program content

($\beta = 0.56$, p < 0.001) and the ratings on their own performance ($\beta = 0.21$, p < 0.001). The positive inter-correlations and predictive relationships were also consistent across grades as indicated in Tables 6 and 7. Therefore, Hypotheses 2d and 2e were also supported.

To explore the differences among implementers across grades when evaluating the program from three aspects, MANOVAs were conducted. According to the findings in Table 8, no significant grade differences were found among implementers when they were rating their satisfaction with program content [$F_{(2356)} = 0.42$, p = 0.66, $\eta_p^2 = 0.002$], their own performance [$F_{(2356)} = 1.00$, p = 0.37, $\eta_p^2 = 0.006$], program benefits [$F_{(2356)} = 0.54$, p = 0.58, $\eta_p^2 = 0.003$], as well as the overall program effectiveness [$F_{(2356)} = 0.14$, p = 0.87, $\eta_p^2 = 0.001$].

Table 5: Summary of the program implementers' perceptions of the benefits of the Tier 2 Program.

	Participants with positive responses (rating 4–6) across different grades							
	Grade 7		Grade 8		Grade 9		Overall	
	N	%	N	%	N	%	N	%
1. The program helped the participants a lot	208	98.6	84	96.6	64	94.1	365	97.3
2. The program enhanced the participants to grow	209	99.1	87	100	64	94.1	369	98.4
3. In the future, the participants would join similar program(s) if needed	209	99.1	87	100	64	94.1	369	98.4
4. Participants have learned how to help themselves through participating in the program	208	98.6	85	97.7	63	92.6	365	97.3
5. Participants have positive change(s) after joining the program	209	99.1	86	98.9	64	94.1	368	98.1
6. Participants have learned how to solve their own problems through participating in the program	209	99.1	85	97.7	64	94.1	367	97.9
7. Compared with before joining this program, participants' behavior has become better	205	97.2	84	96.6	61	89.7	359	95.7
8. Those who know the participants agree that this program has induced positive changes in them	205	97.2	84	96.6	64	94.1	362	96.5

All items are on a 6-point Likert scale with 1 = strongly disagree, 2 = disagree, 3 = slightly disagree, 4 = slightly agree, 5 = agree, 6 = strongly agree. Only respondents with positive responses (Options 4–6) are shown in the table.

Table 6: Correlation coefficients on the relationship between program components and program benefits by grade.

Variables	Grade 7		Grade 8		Grade 9		Total	
	2	3	2	3	2	3	2	3
1. Program content	0.58[a]	0.64[a]	0.43[a]	0.70[a]	0.59[a]	0.70[a]	0.56[a]	0.68[a]
2. Program implementers	–	0.51[a]	–	0.45[a]	–	0.56[a]	–	0.52[a]
3. Program benefits	–	–	–	–	–	–	–	–

[a]$p < 0.001$.

Table 7: Multiple regression analyses predicting program benefits by grade.

	Predictors		Model	
	Program content	Program implementers		
	β[a]	β[a]	R	R²
Grade 7	0.52[d]	0.20[c]	0.66	0.43
Grade 8	0.62[d]	0.19[b]	0.72	0.52
Grade 9	0.57[d]	0.24[b]	0.73	0.54
Overall	0.56[d]	0.21[d]	0.70	0.49

[a]Standardized coefficients; [b]$p < 0.05$; [c]$p < 0.01$; [d]$p < 0.001$.

Hence, Hypothesis 3 that there would be grade differences among program implementers' satisfaction ratings was not supported in the present study.

To examine the impact of parental involvement and the delivery approaches, a series of ANOVAs were conducted with the three subjective outcome evaluation aspects (i.e. program content, implementer performance, and program benefits) as dependent variables, and the four program approaches (ABC, VTS, WORK, and INT) as well as parental involvement as independent variables. As demonstrated in Table 9, results revealed that programs adopting the "INT" element received higher satisfaction ratings than did the programs without the "INT" element in terms of program content [F (1359) = 5.88, p = 0.016, $\eta_p^2 = 0.016$], implementer performance [F (1359) = 7.71, p = 0.006, $\eta_p^2 = 0.021$], and program benefits [F (1359) = 13.02, p < 0.001, $\eta_p^2 = 0.034$]. No main effects of the other three elements ("ABC", "VTS", and "WORK") were found. Hence, Hypothesis 4 was partially supported. Regarding the influence of parental involvement, no main effect was found (Wilk's $\Lambda = 0.99$, F (1359) = 0.86–1.53, p = 0.112–0.354, $\eta_p^2 = 0.002$–0.007).

The findings suggested that there is a need to look at the related interaction effects. It was found that parental involvement and the "WORK" element had a significant two-way interaction effect on program implementers (Wilk's $\Lambda = 0.99$, F (1359) = 7.67, p = 0.006, $\eta_p^2 = 0.021$). A

Table 8: Comparisons of the program evaluations by implementers in different grade levels.

			M (SD)	df1	df2		MANOVA
	Grade 7 (N=207)	Grade 8 (N=87)	Grade 9 (N=65)			F	η_p^2
Program content	5.06(0.40)	5.01(0.47)	5.05(0.50)	2	356	0.42	0.002
Program implementers	5.04(0.44)	5.12(0.47)	5.10(0.45)	2	356	1.00	0.006
Program benefits	4.85(0.51)	4.86(0.52)	4.93(0.58)	2	356	0.54	0.003
Total effectiveness	4.98(0.38)	4.99(0.40)	5.01(0.43)	2	356	0.14	0.001

further simple effect analysis (Table 10 and Figure 1) revealed that for programs with "WORK" element, parental involvement significantly raised implementers' satisfaction ratings on their own performance (M=4.98, SD=0.47; M=5.42, SD=0.35; F (1359)=14.66, p<0.001, η_p^2=0.167). Therefore, hypothesis 5 was partially supported.

Discussion

Adolescents' problematic behaviors may result in academic failure, physical or psychological harms, and even social issues [1, 2]. The Project P.A.T.H.S. is a strength-based youth development program that is tailored to help adolescents in Hong Kong from an ecological perspective [5]. This article examined the effectiveness of the community-based Tier 2 Program of the Project P.A.T.H.S. implemented in the year 2015 from the views of 375 implementers.

According to the present findings based on subjective outcome evaluation, the program was successfully implemented as expected. It has received quite a positive evaluation from the implementers in the aspects of perceived program content, self-perceived performance, and perceived program benefits. The overall perceived program effectiveness ranged from 3.46 to 6.00 on a 6-point Likert scale. One of the big concerns when designing the community-based Tier 2 Program was whether it could be as effective as the school-based programs. The findings in the present study solidly supported the effectiveness of the community-based programs. It is delightful to observe the successful outcomes due to a valuable collaboration between social workers in NGOs and teachers in schools. Meanwhile, no grade differences were found in the subjective outcome evaluation results. The findings were in agreement with Shek, Ng, and Law's study [27]. One possible explanation could be that Tier 2 Programs conducted in three grades were equally effective and that implementers of all grades were equally satisfied with their own performance.

In line with the findings of previous studies [21, 27], the satisfaction ratings of both program content and implementer performance positively predicted perceived program benefits. The prediction effects were consistent across grades. These findings imply that in order to promote the holistic development of adolescents in different areas (such as emotional competence, prosocial norms, bonding, and self-efficacy), the program content should be well-designed and the implementers should be well-trained and wholehearted. Shek and colleagues [51] proposed that factors influencing the program quality could be concluded as 5 "P"s (policy, program, people, place, and process). The findings being presented echo the 5P model by identifying the importance of "program" and "people". In future studies, the other three factors could also be considered.

Different types of delivery approaches were used in the community-based Tier 2 Programs. Previous studies indicated that students had the highest preference for the ABC and VTS approaches [25, 43]. Owing to the successful implementation experience, almost every project incorporated the ABC and/or VTS element(s) during 2015. However, also due to the over-widened gap of the number of participants (355 implementers were in programs with the "ABC" element while only 20 were not; 342 implementers were in programs with the "VTS" element while only 33 were not), the positive influence of adopting ABC and VTS approach on the program effectiveness was not successfully found in the present study. On the other hand, adopting "INT" approach was found to have positive influences on implementers' satisfaction ratings in program content, implementer quality, and program benefits, which are new findings in evaluation studies for the P.A.T.H.S. Project. INT activities motivate adolescents to learn and practice with enthusiasm [46]. In that way, implementers would also be activated and encouraged to make the activities more interesting and interactive. In the future, further investigation of the impacts of the combination of different approaches should be considered.

Although no main effect was found to demonstrate the positive influence of parental involvement, the interaction effect between parental involvement and "WORK"

Table 9: The impacts of parental involvement and delivery approaches on program effectiveness evaluated by implementers.

Dependent variables	Independent variables	Yes		No		F	η_p^2
		N	(M, SD)	N	(M, SD)		
Program content	Main effects						
	Parental involvement	94	5.12(0.36)	274	5.04(0.46)	1.53	0.004
	ABC	348	5.08(0.44)	20	4.96(0.54)	1.36	0.004
	VTS	336	5.07(0.45)	32	5.05(0.40)	0.11	0.000
	WORK	75	5.11(0.48)	293	5.06(0.43)	0.20	0.001
	INT	269	5.10(0.47)	99	4.99(0.43)	5.88[a]	0.016
	Interaction effects[d]						
	Parental involvement[a] VTS					0.07	0.000
	Parental involvement[a] WORK					1.69	0.005
	Parental involvement[a] INT					0.98	0.003
Program implementers	Main effects						
	Parental involvement	94	5.14(0.37)	274	5.06(0.47)	2.54	0.007
	ABC	348	5.09(0.44)	20	5.06(0.64)	0.79	0.002
	VTS	336	5.08(0.45)	32	5.13(0.47)	0.68	0.002
	WORK	75	5.13(0.49)	293	5.07(0.44)	0.32	0.001
	INT	269	5.11(0.46)	99	5.00(0.43)	7.71[b]	0.021
	Interaction effects[1]						
	Parental involvement[a] VTS					0.01	0.000
	Parental involvement[a] WORK					7.67[b]	0.021
	Parental involvement[a] INT					0.36	0.001
Program benefits	Main effects						
	Parental involvement	94	4.96(0.45)	274	4.85(0.55)	0.86	0.002
	ABC	348	4.88(0.52)	20	4.89(0.70)	0.72	0.002
	VTS	336	4.87(0.53)	32	4.95(0.53)	0.27	0.001
	WORK	75	4.98(0.55)	293	4.86(0.52)	2.35	0.007
	INT	269	5.09(0.53)	99	4.83(0.51)	13.02[c]	0.035
	Interaction effects[d]						
	Parental involvement[a] VTS					0.10	0.000
	Parental involvement[a] WORK					3.50	0.010
	Parental involvement[a] INT					0.50	0.001

ABC, adventure-based counseling; VTS, volunteer training and service; WORK, work related; INT, interest-enhancement.[a]p < 0.05; [b]p < 0.01; [c]p < 0.001; [d]There are no interaction effects between parental involvement and the ABC approach as all programs that involved parent(s) adopted the ABC activities.

Table 10: Simple effect analysis of the interactions between "WORK" element and "parental involvement" on perceived implementer performance.

	Parental involvement				F	η_p^2
	Yes		No			
	N	(M, SD)	N	(M, SD)		
WORK						
Yes	20	(5.42, 0.35)	55	(4.98, 0.47)	14.66[a]	0.167
No	74	(5.06, 0.34)	219	(5.08, 0.47)	0.159	0.001

[a]p < 0.001.

element partially supported the benefits of parental involvement in youth development programs. A previous study found that students preferred the programs involving only students more than the programs also involving parents [52]. It is understandable that implementers valued the potential benefits for students more, while participated students preferred more relaxing experiences without parents' restrictions. Involving parents in "WORK" activities not only inspires parents to help kids' career development but also contributes to the affectional ties within families. From the ecological perspective, supportive parents and teachers could provide protective factors for the adolescents at a community level [12].

Despite the above-mentioned contributions, the present study has several limitations. First, a fundamental concern for subjective outcome evaluation is the social desirability and self-serving bias because most of the responses were quite positive. It is human nature that individuals, including the program implementers, tend to perceive own performance as positive [53]. Therefore, a combination of both subjective and objective outcome evaluations from the perspectives of other stakeholders would be
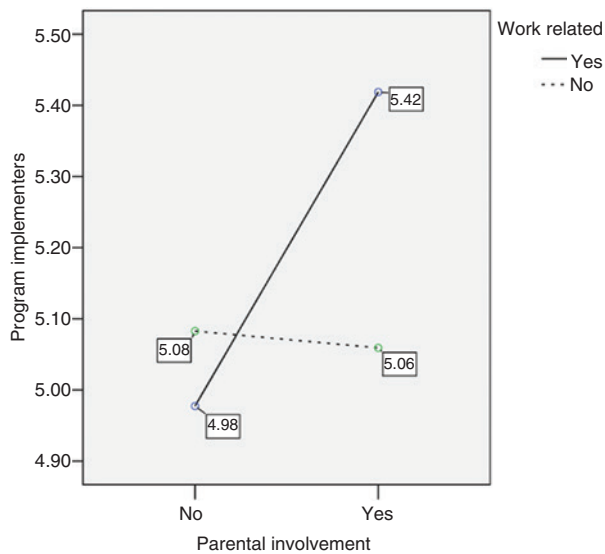
Figure 1: Simple effect analysis of the interactions between "WORK" element and "parental involvement" on perceived implementer performance.

necessary. Second, as the community-based Tier 2 Program was mainly developed and implemented by NGO social workers, it would be difficult for research team members to master the details of the implementation process. Hence, qualitative evaluation measures, such as focus group and individual interviews, would be helpful to better evaluate and improve the programs. Third, a larger sample size would substantially enhance the generalizability of the findings in the current study. For example, the efficiency of parental involvement could not be well examined without sufficient participants. Future evaluating studies could also consider their voices. Notwithstanding these limitations, the current study provided evidence for the success and effectiveness of the community-based Tier 2 Program of the P.A.T.H.S. Project. It also shed light on the future improvement of positive youth development programs.

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