

# Subjective outcome evaluation of the Project P.A.T.H.S.: findings based on different datasets

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## Abstract

A total of 216 schools participated in the Project P.A.T.H.S. in the 2008/2009 school year. After completion of the Tier 1 Program, subjective outcome evaluation data were collected from 3274 program implementers. Based on the consolidated data with schools as units, results showed that participants had positive perceptions of the program, implementers and benefits of the program. More than four-fifths of the implementers regarded the program as helpful to the program participants. Multiple regression analysis revealed that perceived qualities of the program and the program implementers predicted perceived effectiveness of the program. Grade differences were not significant, except in the perception of the program for the Secondary 1 and Secondary 3 programs. The present study provides additional support for the effectiveness of the Tier 1 Program of the Project P.A.T.H.S. in Hong Kong.

**Keywords:** Chinese adolescents; positive youth development; program implementers; subjective outcome evaluation.

## Introduction

Recent evidence from prevention research has indicated that school-based intervention programs are effective in reducing adolescents' risks for problem behavior and promoting positive

youth development (1–6). However, findings in well-controlled settings might not be replicated successfully in natural conditions owing to the complex nature of the program implementation process (7). In other words, the question of generalizability of findings across populations, settings and time should be examined when researchers attempt to “translate” effective programs shown by research findings to the real world.

Glasgow et al. (8) argue that “the reason for the slow and uneven translation of research findings into practice...is lack of attention to issues of generalization and external validity” (p. 1266). The difficulties in translating effective research findings into the real world are documented in the literature (7, 9–11). Researchers highlight the necessity to identify factors that facilitate, or hinder, the program implementation in school-based prevention research (12, 13). This information is of paramount importance to tailor an appropriate program to achieve its maximum impact in the community. For example, one might ask whether an effective program developed for Grade 7 American students would be equally effective for Grade 7 Chinese students.

To date, the majority of work focuses on factors associated with program effectiveness, very few studies have examined the relative influence of these factors on effectiveness, particularly with regard to individual and contextual characteristics. Previous research showed that the predictors' effects on program implementation process and outcomes would vary across contexts (14, 15). Underestimation of the multiple ecological factors might limit the generalization of positive intervention findings in real world practice (16). Durlak and DuPre (9) highlight the necessity “to relate implementation data to gains achieved by different subgroups of participants” (p. 343). This information would help us understand how programs can be conducted into multiple contexts. Essentially, the question of whether program effectiveness and implementation quality would vary across populations, time, and contexts should be addressed.

The Project “P.A.T.H.S. to Adulthood: A Jockey Club Youth Enhancement Scheme” is a large-scale positive youth development program designed for junior secondary school students (Secondary 1–3, i.e., Grade 7–9) in Hong Kong (17). The word “P.A.T.H.S.” denotes **P**ositive **A**dolescent **T**raining through **H**olistic **S**ocial Programs. It consists of two tiers of programs. The Tier 1 Program targets all students joining the program in a particular form (i.e., universal prevention initiative). Through the use of structured curriculum, students learn competencies with reference to the 15 positive youth development constructs (17). The Tier 2 Program is specially designed for students with greater psychosocial needs in different psychosocial domains (i.e., selective prevention). After completion of the Tier 1

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Program, program implementers were required to complete the subjective outcome evaluation form (Form B). Based on the subjective outcome evaluation data collected from each school, the responsible implementer was required to complete an evaluation report (Form B).

Previous studies have documented the positive program effects of the Tier 1 Program of the Project P.A.T.H.S. (18–23). Generally, participants (students and program implementers) perceived the program positively. Furthermore, studies based on the conclusions drawn by the program implementers also showed that the program, instructors, and benefits were evaluated in a favorable light by various stakeholders. However, as previous studies (18–23) examined the impact based on the participants from the same grade level, little is known whether the impact of the program will vary depending on the students' grade level. In addition, we know little about how perceived quality, program implementers, and effectiveness of the program are related to each other.

Given the lack of subjective outcome evaluation data collected from program implementers, the present study examined subjective outcome evaluation among program implementers. The research goal of the present study is to examine factors associated with program effectiveness and how these relationship(s) would differ by the students' characteristics (i.e., grade level). In view of the paucity of research findings in this area, it is clear that the present study will generate data with both academic and practical significance.

## Methods

### Participants and procedures

There were a total of 216 schools that joined the Project P.A.T.H.S. in the third year of the Full Implementation Phase in the school year 2008/2009 (197, 198, and 167 schools in Secondary 1, Secondary 2, and Secondary 3 levels, respectively). In these three forms, the mean number of students per school was 165.52 (ranged from 5 to 263 students), with an average of 4.62 classes per school (ranged from 1 to 8 classes). Among them, 43.40% of the respondent schools adopted the full program (i.e., 20-h program involving 40 units), whereas 56.60% of the respondent schools adopted the core program (i.e., 10-h program involving 20 units). The mean number of sessions used to implement the program was 23.14 (ranged from 4 to 66 sessions). Whereas 52.70% of the respondent schools incorporated the program into the formal curriculum (e.g., Liberal Studies, Life Education), 47.30% used other modes (e.g., using form teacher's periods and other combinations) to implement the program. The mean numbers of social workers and teachers implementing the program per school per form were 1.73 (ranged from 0 to 10) and 5.56 (ranged from 0 to 28), respectively.

After the Tier 1 Program was completed, the implementers were invited to respond to a Subjective Outcome Evaluation Form (Form B) developed by the first author (24). In the school year 2008/2009, a total of 3264 questionnaires were completed. The data collection was conducted after the completion of the program. To facilitate the program evaluation, the Research Team developed an evaluation manual with standardized instructions for collecting the subjective outcome evaluation data (24). In addition, adequate training was provided to the implementers during the 20-h training workshops on how to collect and analyze the data collected by Form B.

## Instruments

The Subjective Outcome Evaluation Form (Form B) was used. Broadly speaking, there are several parts in this evaluation form as follows:

- Program implementers' perceptions of the program, such as program objectives, design, classroom atmosphere, interaction among the students, and the respondents' participation during class (10 items).
- Program implementers' perceptions of their own practice, including their understanding of the course, teaching skills, professional attitude, involvement, and interaction with the students (10 items).
- Implementers' perceptions of the effectiveness of the program on students, such as promotion of different psychosocial competencies, resilience, and overall personal development (16 items).
- The extent to which the implementers would recommend the program to other students with similar needs (1 item).
- The extent to which the implementers would teach similar programs in future (1 item).
- The extent to which the program implementation has helped the implementers' professional growth (1 item).
- Things that the implementers obtained from the program (open-ended question).
- Things that the implementers appreciated most (open-ended question).
- Difficulties encountered (open-ended question).
- Areas that require improvement (open-ended question).

For the quantitative data, the implementers collecting the data were requested to input the data in an EXCEL file developed by the Research Team which would automatically compute the frequencies and percentages associated with the different ratings for an item. When the schools submitted the reports, they were also requested to submit the soft copy of the consolidated data sheets. After receiving the consolidated data by the funding body, the data were aggregated to "re-construct" the overall profile based on the subjective outcome evaluation data by the Research Team.

## Data analysis

Percentage findings were examined using descriptive statistics. A composite measure of each factor (i.e., perceived qualities of program content, perceived qualities of program implementers, and perceived program effectiveness) was created based on the total scores of each factor divided by the number of items. Pearson correlation analysis was used to examine if the program content and program implementers were related to the program effectiveness. A one-way analysis of variance (ANOVA) was used to assess the differences in the mean of each factor across grade levels. Hierarchical linear regression analysis was performed to compare which factor would predict the program effectiveness. All analyses were performed by using the Statistical Package for Social Sciences Version 17.0 (Chicago, IL, USA).

## Results

The quantitative findings based on the closed-ended questions are presented in this paper. Several observations can be highlighted from the findings. First, the participants generally had positive perceptions of the program (Table 1), including clear objectives of the curriculum (94.73%), well-planned teaching

**Table 1** Summary of the program implementers' perception towards the program.

	Respondents with positive responses (options 4–6)							
	S1		S2		S3		Overall	
	n	%	n	%	n	%	n	%
1. The objectives of the curriculum are very clear	1122	95.33	1088	94.61	886	94.26	3096	94.73
2. The design of the curriculum is very good	1036	88.02	962	83.72	795	84.57	2793	85.44
3. The activities were carefully planned	1085	92.11	1021	88.78	825	88.05	2931	89.65
4. The classroom atmosphere was very pleasant	1061	90.61	976	85.17	778	83.39	2815	86.39
5. There was much peer interaction among the students	1036	88.40	972	85.11	774	83.41	2782	85.64
6. Students participated actively during lessons (including discussions, sharing, games, etc.)	1034	88.23	941	82.11	755	80.58	2730	83.64
7. The program has a strong and sound theoretical support	1021	86.82	981	85.53	819	87.41	2821	86.59
8. The teaching experience I encountered enhanced my interest in the course	957	81.45	903	78.80	736	78.72	2596	79.66
9. Overall speaking, I have very positive evaluation of the program	980	83.26	905	78.70	739	78.95	2624	80.30
10. On the whole, students like this curriculum very much	975	83.33	865	75.94	721	76.95	2561	78.74

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. S1, Secondary 1 level; S2, Secondary 2 level; S3, Secondary 3 level.

activities (89.65%), and a strong and sound theoretical support (86.59%). Second, a high proportion of the implementers had positive evaluation of their performance (Table 2). For example, 98.62% of the implementers perceived that they were ready to help their students; 98.43% of the implementers expressed that they cared for the students; 96.17% believed that they had good professional attitudes. Third, as shown in Table 3, many implementers perceived that the program promoted the development of students, including their social competence (92.77%), self-understanding (92.40%), moral competence (91.23%), and overall development (93.16%). Fourth, 88.52% of the implementers would recommend the program to students with similar needs. Fifth, 80.70% of the

implementers expressed that they would teach similar courses again in the future. Finally, 82.12% respondents indicated that the program had helped their professional development (Table 4).

Reliability analysis with the schools as the unit of analyses showed that Form B was internally consistent (Table 5): 10 items related to the program ( $\alpha=0.95$ ), 10 items related to the implementer ( $\alpha=0.94$ ), 16 items related to the benefits ( $\alpha=0.97$ ), and the overall 36 items measuring program effectiveness ( $\alpha=0.98$ ). Results of correlation analyses showed that both program content ( $r=0.76$ ,  $p<0.01$ ) and program implementers ( $r=0.64$ ,  $p<0.01$ ) were strongly associated with program effectiveness (Table 6).

**Table 2** Summary of the program implementers' perception towards their own performance.

	Respondents with positive responses (options 4–6)							
	S1		S2		S3		Overall	
	n	%	n	%	n	%	n	%
1. I have a good mastery of the curriculum	1038	88.64	977	85.85	781	85.08	2796	86.52
2. I prepared well for the lessons	1042	89.14	1001	88.35	794	86.59	2837	88.03
3. My teaching skills were good	1039	89.11	981	87.12	794	87.16	2814	87.80
4. I have good professional attitudes	1125	96.24	1085	95.85	885	96.41	3095	96.17
5. I was very involved	1096	93.92	1054	92.95	846	92.16	2996	93.01
6. I gained a lot during the course of instruction	1007	86.51	956	84.53	768	84.03	2731	85.02
7. I cared for the students	1151	98.63	1114	98.41	905	98.26	3170	98.43
8. I was ready to offer help to students when needed	1154	98.89	1119	98.59	907	98.37	3180	98.62
9. I had much interaction with the students	1102	94.43	1044	92.39	845	91.95	2991	92.92
10. Overall speaking, I have very positive evaluation of myself as an instructor	1118	95.72	1059	93.55	871	94.88	3048	94.72

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. S1, Secondary 1 level; S2, Secondary 2 level; S3, Secondary 3 level.

**Table 3** Summary of the program implementers' perception towards the program effectiveness.

The extent to which the Tier 1 Program (i.e., the program in which all students have joined) has helped your students:	Respondents with positive responses (options 3–5)							
	S1		S2		S3		Overall	
	n	%	n	%	n	%	n	%
1. It has strengthened students' bonding with teachers, classmates and their families	1078	92.06	999	87.33	821	87.62	2898	89.00
2. It has strengthened students' resilience in adverse conditions	1038	88.42	981	85.60	811	86.55	2830	86.86
3. It has enhanced students' social competence	1108	94.46	1050	91.70	857	92.15	3015	92.77
4. It has improved students' ability in handling	1070	91.45	1013	88.47	824	87.85	2907	89.26
5. It has enhanced students' cognitive competence	1023	87.29	971	84.80	794	84.83	2788	85.64
6. Students' ability to resist harmful influences has been improved	1022	87.20	957	83.51	777	83.10	2756	84.60
7. It has strengthened students' ability to distinguish between the good and the bad	1084	92.49	1029	89.95	854	91.24	2967	91.23
8. It has increased students' competence in making sensible and wise choices	1051	89.68	983	85.93	822	87.73	2856	87.78
9. It has helped students to have life reflections	994	84.96	968	84.47	812	86.75	2774	85.39
10. It has reinforced students' self-confidence	970	82.76	903	78.80	736	78.63	2609	80.06
11. It has increased students' self-awareness	1108	94.54	1038	90.66	862	92.00	3008	92.40
12. It has helped students to face the future with a positive attitude	1010	86.18	953	83.30	798	85.35	2761	84.94
13. It has helped students to cultivate compassion and care about others	1029	87.87	970	84.64	790	84.31	2789	85.61
14. It has encouraged students to care about the community	925	78.92	900	78.53	733	78.31	2558	78.59
15. It has promoted students' sense of responsibility in serving society	931	79.44	902	78.98	730	77.91	2563	78.78
16. It has enriched the overall development of the students	1107	94.53	1057	92.31	868	92.64	3032	93.16

All items are on a 5-point Likert scale with 1=unhelpful, 2=not very helpful, 3=slightly helpful, 4=helpful, 5=very helpful. Only respondents with positive responses (options 3–5) are shown in the table. S1, Secondary 1 level; S2, Secondary 2 level; S3, Secondary 3 level.

To examine differences in the perceived variables (i.e., program content, program implementers, and program effectiveness) across grade levels, a one-way ANOVA was performed with the perceived variables as dependent variables and grade level (i.e., Secondary 1–3) as independent variable. Significant results were only found in program content,  $F_{(2, 559)}=3.76$ ,  $p=0.02$  (Table 5). Post-hoc analysis using Bonferroni adjustment revealed that a significant difference was found between Secondary 1 ( $M=4.48$ ) and Secondary 3 ( $M=4.35$ ) classes ( $p=0.03$ ), with the Secondary 1 Program perceived to be relatively more favorable than the Secondary 3 Program.

Table 7 presents multiple regression analysis results. Higher positive views towards the program and program implementers were associated with higher program effectiveness ( $p<0.01$ ). Further analyses showed that perceived program ( $\beta=0.61$ ) was a significantly stronger predictor than program implementers ( $\beta=0.21$ ). This model explained 59% of the variance towards the prediction of program effectiveness. Interestingly, the above relationships and the amount of variance were consistent across grade levels.

## Discussion

The present study examined the perceptions of the Tier 1 Program among the program implementers in several grades

of the junior secondary school years. In addition, the study examined two neglected issues in the literature. First, the study examined whether there were differences across grade levels as far as subjective outcome evaluation findings were concerned. Second, the relationships among subjective evaluation of program, program implementers, and perceived effectiveness were examined.

Findings in the present study showed that program implementers generally perceived the program positively, in terms of the program design, their role during the implementation process and program effectiveness. The present findings were consistent with the subjective outcome evaluation findings based on Form A (i.e., evaluation based on the students) which also showed that a high proportion of the program participants had favorable perceptions of the program, the program implementers and helpfulness of the program (20, 25). Furthermore, the findings are also in line with those evaluation findings based on objective outcome evaluation, process evaluation, and interim evaluation (19, 26–30). Taken as a whole, different stakeholders had positive perceptions of the program, program implementers, and perceived effectiveness of the program.

Consistent with previous research (31), both program factors were significantly related to the perceived program effectiveness. These findings supported the notion that effective implementation is multidimensional (9). Interestingly, compared with program implementers, program quality was



**Table 4** Other aspects of subjective outcome evaluation based on the program implementers' perception.

If you have a student/client whose needs and conditions are similar to those of your students who have joined the program, will you suggest him/her to participate in this program?

Respondents with positive responses (options 3–4)							
S1		S2		S3		Overall	
n	%	n	%	n	%	n	%
1057	90.89	991	87.31	808	87.35	2856	88.52

The item is on a 4-point Likert scale with 1=definitely will not suggest, 2=will not suggest, 3=will suggest, 4=definitely will suggest. Only respondents with positive responses (options 3–4) are shown in the table. S1, Secondary 1 level; S2, Secondary 2 level; S3, Secondary 3 level.

If there is a chance, will you teach similar programs again in the future?

Respondents with positive responses (options 3–4)							
S1		S2		S3		Overall	
n	%	n	%	n	%	n	%
965	83.12	889	79.38	722	79.60	2576	80.70

The item is on a 4-point Likert scale with 1=definitely will not teach, 2=will not teach, 3=will teach, 4=definitely will teach. Only respondents with positive responses (options 3–4) are shown in the table. S1, Secondary 1 level; S2, Secondary 2 level; S3, Secondary 3 level.

Do you think the implementation of the program has helped you in your professional growth (e.g., enhancement of your skills)?

Respondents with positive responses (options 3–5)							
S1		S2		S3		Overall	
n	%	n	%	n	%	n	%
974	83.89	916	80.92	751	81.54	2641	82.12

All items are on a 5-point Likert scale with 1=unhelpful, 2=not very helpful, 3=slightly helpful, 4=helpful, 5=very helpful. Only respondents with positive responses (options 3–5) are shown in the table. S1, Secondary 1 level; S2, Secondary 2 level; S3, Secondary 3 level.

a stronger predictor of perceived effectiveness. Furthermore, the findings showed that the aforementioned relationships were not varied by the students' grade level. In other words, program content and program implementers are two crucial

**Table 6** Correlation coefficients among the variables.

Variables	1	2	3
Program content (10 items)	–		
Program implementers (10 items)	0.72 <sup>a</sup>	–	
Program effectiveness (16 items)	0.76 <sup>a</sup>	0.64 <sup>a</sup>	–

<sup>a</sup>p<0.01.

**Table 7** Multiple regression analyses predicting program effectiveness.

	Predictors		Model	R	R <sup>2</sup>
	Program content	Program implementers			
S1	β <sup>a</sup>	β <sup>a</sup>			
S2	0.55 <sup>c</sup>	0.27 <sup>c</sup>	0.76	0.58	
S3	0.67 <sup>c</sup>	0.16 <sup>b</sup>	0.78	0.61	
Overall	0.61 <sup>c</sup>	0.20 <sup>b</sup>	0.77	0.59	
	0.61 <sup>c</sup>	0.21 <sup>c</sup>	0.77	0.59	

<sup>a</sup>standardized coefficients. <sup>b</sup>p<0.01, <sup>c</sup>p<0.05.

factors in determining the program effectiveness on positive youth development outcomes, regardless of students' grade level.

Interestingly, compared with program content, the variance of program implementers in explaining the perceived program effectiveness was small. This tentatively suggests that program content appeared to be more influential in affecting program effectiveness compared with the perceived qualities of program implementers. Durlak and DuPre (9) argued that most of the intervention studies failed to examine the relative influence of different factors associated with program effectiveness. The results of the present study are a positive response and attempt to fill this research gap. As there are only few studies on the predictors of perceived effectiveness of positive youth development programs, the present study can be regarded as pioneer in nature.

Another interesting observation is that although there was not much difference among different grades on the subjective outcome evaluation measures, perceptions of the Secondary 1 and Secondary 3 curricula were different, with the perceptions of the Secondary 3 program to be relatively less favorable than the Secondary 1 program. There are two possible factors contributing to this difference. First, as Secondary 1 students were new to the project, they might have more interest and the

**Table 5** Mean, standard deviations, Cronbach's α values, and mean of inter-item correlations among the variables by grade.

	S1		S2		S3		Overall	
	M (SD)	α (Mean <sup>a</sup> )	M (SD)	α (Mean <sup>a</sup> )	M (SD)	α (Mean <sup>a</sup> )	M (SD)	α (Mean <sup>a</sup> )
Program content (10 items)	4.48 <sup>b</sup> (0.41)	0.94 (0.62)	4.39 (0.46)	0.95 (0.66)	4.35 <sup>b</sup> (0.48)	0.95 (0.67)	4.41 (0.45)	0.95 (0.65)
Program implementer (10 items)	4.68 (0.33)	0.93 (0.58)	4.65 (0.37)	0.94 (0.62)	4.64 (0.39)	0.94 (0.63)	4.66 (0.36)	0.94 (0.61)
Program effectiveness (16 items)	3.39 (0.38)	0.97 (0.66)	3.35 (0.39)	0.97 (0.70)	3.36 (0.42)	0.97 (0.69)	3.37 (0.39)	0.97 (0.68)
Total effectiveness (36 items)	4.05 (0.33)	0.97 (0.51)	4.00 (0.36)	0.98 (0.54)	3.99 (0.39)	0.98 (0.56)	4.02 (0.36)	0.98 (0.54)

<sup>a</sup>Mean inter-item correlations. <sup>b</sup>p<0.05; Bonferroni adjustment (p=0.02).

classroom behavior might be more positive. For Secondary 3 students, there is a higher tendency that they acted in a rebellious manner. Second, as the Secondary 3 curriculum focuses more on exploration of the inner experiences among the students, program implementers might have greater difficulty in implementing the program compared with the Secondary 1 curriculum. However, as the differences observed were not large, further studies to examine the related phenomena are needed.

Researchers (32–35) advocated the examination of successful implementation by using a multilevel ecological approach to see how all levels of factors interact with each other and lead to effective implementation. For example, Payne and Eckert (36) examined the effects of program, school, and organization factors on program implementation quality. The strength of the relationship between the program provider characteristics and program implementation quality was weakened when other factors (i.e., program structure, school climate, and school structure) were included. Future research should examine the operation of different ecological factors in different populations at different times.

Obviously, one of the limitations of the present study is the use of only two predictors (i.e., program content and program implementers). Prior literature revealed that other factors, such as school and organization characteristics, would also affect program effectiveness and implementation quality (11, 37, 38). Future research should explore other factors related to program effectiveness. Another potential limitation of the study is the self-report nature of the data. Future research should examine the inter-relationships among program, implementers, and perceived effectiveness using different approaches (e.g., focus group interviews, diaries, and process evaluation) and different sources of data (e.g., students, social workers, parents). Lastly, as the present findings were “reconstructed” from the evaluation reports submitted by the agencies, the unit of analyses was schools instead of individuals. Therefore, the power of statistical analyses would become low and individual variations were lost in the process.

Despite the above limitations, this study extends the positive youth development literature. It reveals that the association of positive perception on the program and program effectiveness. To date, very few studies have examined what factors are attributed to the program effectiveness, especially in the Chinese context. Shek (39) argued that more research work is needed on subjective outcome evaluation, especially in social work education. The findings of study can be viewed as a constructive response to the existing social work practice literature. The present findings provide insights to practitioners when designing appropriate youth programs for Chinese adolescents.

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