Adolescent Developmental Issues and Phenomena
- Substance abuse
- Mental health problems
- Bullying
- Internet addiction
- Drop in family solidarity

The Need for Positive Youth Development Program
- Lack of systematic and sustainable positive youth development programs in Hong Kong
- Problem free is not fully prepared (Pittman, 1991)
- Young people are not problems to be solved but resources to be developed

Social and Emotional Learning
- **Self-Awareness**
  - Identifying emotions; recognizing strengths
- **Social Awareness**
  - Perspective-taking; appreciating diversity
- **Self-Management**
  - Managing emotions; goal setting
- **Responsible Decision Making**
  - Analyzing situations, assuming personal responsibility, respecting others, problem solving
- **Relationship Skills**
  - Communication, building relationships, negotiation, refusal

Introduction
Funding: A total of HK$750 million from The Hong Kong Jockey Club Charities Trust
Purpose: to promote holistic and positive development of young people
Feature: the first known scientific youth development programme designed for adolescents in different Chinese communities
Strategy: Development of positive youth development programs (particularly curricular-based programs) focus on 15 positive youth development constructs
Design of the Project: 2 Tiers (Tier 1: a universal positive youth development programme for students in Secondary 1 to Secondary 3 receiving 10-20 hours of training in each level of the junior secondary school year; Tier 2: a selective programme for adolescents with greater psychosocial needs)
Research Team: The Hong Kong Polytechnic University, City University of Hong Kong, Hong Kong Baptist University, The Chinese University of Hong Kong, The University of Hong Kong
15 Positive Youth Development Constructs Covered in the Project P.A.T.H.S.
- Bonding
- Resilience
- Competencies: Social, Emotional, Cognitive, Behavioral, and Moral Competencies
- Self-Determination
- Self-Efficacy
- Spirituality
- Beliefs in the Future
- Clear and Positive Identity
- Prosocial Involvement
- Prosocial Norms
- Recognition for Positive Behavior

Multi-Method Evaluation
- Evaluation 7: In-depth interviews with teachers
- Evaluation 8: Case study
- Evaluation 9: Process evaluation
- Evaluation 10: Interim evaluation
- Evaluation 11: Student products (weekly diaries; drawings)
- Evaluation 12: Evaluation based on personal construct psychology (repertory grid technique)

What is a growth curve model?
- To study the pattern of change over time: “Development Increases or decreases over time?”
- Any differences in the pattern of change?
- Everyone has different patterns of change

Methodology

<table>
<thead>
<tr>
<th>Schools</th>
<th>Control (Non-PATHS students)</th>
<th>Experimental (PATHS students)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of students</td>
<td>5,934</td>
<td>3,272</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>Wave 1</th>
<th>Wave 2</th>
<th>Wave 3</th>
<th>Wave 4</th>
<th>Wave 5</th>
<th>Wave 6</th>
<th>Wave 7</th>
<th>Wave 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sept. 2006</td>
<td>5.1</td>
<td>5.2</td>
<td>5.3</td>
<td>5.4</td>
<td>5.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>May 2007</td>
<td>5.1</td>
<td>5.2</td>
<td>5.3</td>
<td>5.4</td>
<td>5.5</td>
<td></td>
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<tr>
<td>Sept. 2007</td>
<td>5.1</td>
<td>5.2</td>
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<td>5.4</td>
<td>5.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>May 2008</td>
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<td>5.2</td>
<td>5.3</td>
<td>5.4</td>
<td>5.5</td>
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<td></td>
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<tr>
<td>Sept. 2009</td>
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<tr>
<td>May 2010</td>
<td>5.1</td>
<td>5.2</td>
<td>5.3</td>
<td>5.4</td>
<td>5.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>May 2011</td>
<td>5.1</td>
<td>5.2</td>
<td>5.3</td>
<td>5.4</td>
<td>5.5</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Grade level</th>
<th>Wave 1</th>
<th>Wave 2</th>
<th>Wave 3</th>
<th>Wave 4</th>
<th>Wave 5</th>
<th>Wave 6</th>
<th>Wave 7</th>
<th>Wave 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>47”</td>
<td>44”</td>
<td>43”</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1 experimental school had withdrawn after Wave 1)</td>
<td>(3 experimental schools had withdrawn after Wave 3)</td>
<td>(1 experimental school had withdrawn after Wave 4)</td>
<td>43</td>
<td>43</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Number of collected questionnaires

<table>
<thead>
<tr>
<th>Wave</th>
<th>Wave 1</th>
<th>Wave 2</th>
<th>Wave 3</th>
<th>Wave 4</th>
<th>Wave 5</th>
<th>Wave 6</th>
<th>Wave 7</th>
<th>Wave 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>N (Schools)</td>
<td>48</td>
<td>47</td>
<td>44</td>
<td>44</td>
<td>43</td>
<td>43</td>
<td>43</td>
<td>43</td>
</tr>
<tr>
<td>N (Participants)</td>
<td>7,846</td>
<td>7,388</td>
<td>6,939</td>
<td>6,616</td>
<td>6,373</td>
<td>6,116</td>
<td>6,534</td>
<td>5,934</td>
</tr>
</tbody>
</table>

Control Group
- Male | 1,936 | 1,888 | 1,888 | 1,888 | 1,888 | 1,888 | 1,936 | 1,936 |
- Female | 1,613 | 1,619 | 1,619 | 1,619 | 1,619 | 1,619 | 1,619 | 1,619 |

Experimental Group
- Male | 2,154 | 1,998 | 1,998 | 1,998 | 1,998 | 1,998 | 2,154 | 2,154 |
- Female | 1,745 | 1,571 | 1,571 | 1,571 | 1,571 | 1,571 | 1,745 | 1,745 |

% of successfully matched - 96% | 97% | 98% | 99% | 97% | 97% | 93% | 91%
Methodology

**Chinese Positive Youth Development Scale**

<table>
<thead>
<tr>
<th>Domain</th>
<th>Sub-Domain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bonding</td>
<td>Resilience</td>
</tr>
<tr>
<td>Spirituality</td>
<td>Self-Efficacy</td>
</tr>
<tr>
<td>Beliefs in the Future</td>
<td>Prosocial Norms</td>
</tr>
<tr>
<td>Positive Identity second-order</td>
<td>Recognition</td>
</tr>
<tr>
<td>Alcohol</td>
<td>Tobacco</td>
</tr>
<tr>
<td>Beliefs in the Future</td>
<td>Ketamine</td>
</tr>
<tr>
<td>Positive Identity second-order</td>
<td>Cough mixture</td>
</tr>
<tr>
<td>Alcohol</td>
<td>Ecstasy</td>
</tr>
<tr>
<td>Beliefs in the Future</td>
<td>Heroin</td>
</tr>
<tr>
<td>Delinegency</td>
<td>Stealing</td>
</tr>
<tr>
<td>Beliefs in the Future</td>
<td>Cheating</td>
</tr>
<tr>
<td>Beliefs in the Future</td>
<td>Playing</td>
</tr>
<tr>
<td>Beliefs in the Future</td>
<td>Runaway</td>
</tr>
<tr>
<td>Beliefs in the Future</td>
<td>Reviling</td>
</tr>
<tr>
<td>Beliefs in the Future</td>
<td>Trespassing</td>
</tr>
<tr>
<td>Beliefs in the Future</td>
<td>Damaging properties</td>
</tr>
<tr>
<td>Beliefs in the Future</td>
<td>Assault</td>
</tr>
<tr>
<td>Beliefs in the Future</td>
<td>Sexual relationship</td>
</tr>
<tr>
<td>Beliefs in the Future</td>
<td>Group assault</td>
</tr>
<tr>
<td>Beliefs in the Future</td>
<td>Staying away from</td>
</tr>
<tr>
<td>Beliefs in the Future</td>
<td>Violence</td>
</tr>
<tr>
<td>Beliefs in the Future</td>
<td>Life satisfaction</td>
</tr>
<tr>
<td>Beliefs in the Future</td>
<td>Intention to</td>
</tr>
<tr>
<td>Beliefs in the Future</td>
<td>Engage in</td>
</tr>
<tr>
<td>Beliefs in the Future</td>
<td>Risk Research</td>
</tr>
<tr>
<td>Beliefs in the Future</td>
<td>Academic and School</td>
</tr>
<tr>
<td>Beliefs in the Future</td>
<td>Performance</td>
</tr>
</tbody>
</table>

**Major Finding (1)**

- Using positive youth development indicators such as moral competence, behavioral competence and positive identity, a) students in the Experimental Group (with P.A.T.H.S) had **better development** than did students in the Control Group (without P.A.T.H.S); b) students in the Experimental Group who perceived the program to be beneficial to their development had **better development** than did students in the Control Group.

**Example 1: Beliefs in the Future**

Differences between Experimental and Control Group participants in their growth curves

* Cases perceived the program positively

**Example 2: Positive Identity second-order factor**

Differences between Experimental and Control Group participants in their growth curves

* Cases perceived the program positively

**Example 3: Prosocial Norm**

Differences between Experimental and Control Group participants in their growth curves

* Cases perceived the program positively

**Example 4: Resilience**

Differences between Experimental and Control Group participants in their growth curves

* Cases perceived the program positively
**Example 5: Life Satisfaction**
Differences between Experimental\textsuperscript{a} and Control Group participants in their growth curves

- Group X Time interaction effect ($p < .01$) after controlling the initial age and gender
- Group X Time\textsuperscript{2} interaction effect ($p < .01$) after controlling the initial age and gender
- Group X Time\textsuperscript{3} interaction effect ($p < .01$) after controlling the initial age and gender

\textsuperscript{a} Cases participated in Tier 1 program only

**Example 6: Academic and School Performance**
Differences between Experimental\textsuperscript{a} and Control Group participants in their growth curves

- Group X Time interaction effect ($p < .05$) after controlling the initial age and gender
- Group X Time\textsuperscript{2} interaction effect ($p > .05$) after controlling the initial age and gender
- Group X Time\textsuperscript{3} interaction effect ($p > .05$) after controlling the initial age and gender

**Table 1: Scale Scores of Positive Youth Development Constructs (1 = Lowest; 6 = Highest)**

<table>
<thead>
<tr>
<th>Positive Youth Development Constructs</th>
<th>P.A.T.H.S. Students (Experimental Group)</th>
<th>Non-P.A.T.H.S. Students (Control Group)</th>
<th>Difference*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beliefs in the Future</td>
<td>4.50</td>
<td>4.31</td>
<td>4%</td>
</tr>
<tr>
<td>Positive Identity</td>
<td>4.46</td>
<td>4.39</td>
<td>2%</td>
</tr>
<tr>
<td>Prosocial Norm</td>
<td>4.45</td>
<td>4.36</td>
<td>2%</td>
</tr>
<tr>
<td>Resilience</td>
<td>4.71</td>
<td>4.61</td>
<td>2%</td>
</tr>
<tr>
<td>Life Satisfaction</td>
<td>3.94</td>
<td>3.80</td>
<td>4%</td>
</tr>
<tr>
<td>Academic &amp; School Performance</td>
<td>3.10</td>
<td>2.98</td>
<td>4%</td>
</tr>
</tbody>
</table>

Note: * Differences were statistically significant. **Baseline differences between Experimental group and Control group were controlled in the analyses.***

--

**Major Finding (2)**

- Using substance abuse indicators such as smoking, drinking and illicit drug use, a) students in the Experimental Group (with P.A.T.H.S) had slower development than did students in the Control Group (without P.A.T.H.S); b) students in the Experimental Group who perceived the program to be beneficial to their development had slower development than did students in the Control Group.
Example 3: Cannabis Use
Differences between Experimental and Control Group participants in their growth curves

• Cases participated in Tier 1 program only
  Group A: Time interaction effect (p < .05) after controlling the initial age and gender
  Group B: Time interaction effect (p < .05) after controlling the initial age and gender

Example 4: Solvent Use
Differences between Experimental and Control Group participants in their growth curves

• Cases participated in Tier 1 program only
  Group A: Time interaction effect (p < .05) after controlling the initial age and gender
  Group B: Time interaction effect (p < .05) after controlling the initial age and gender

Example 5: Ecstasy Use
Differences between Experimental and Control Group participants in their growth curves

• Cases participated in Tier 1 program only
  Group A: Time interaction effect (p < .05) after controlling the initial age and gender
  Group B: Time interaction effect (p < .05) after controlling the initial age and gender

Example 6: Smoking and Alcohol
Differences between Experimental and Control Group participants in their growth curves

• Cases participated in Tier 1 program only
  Group A: Time interaction effect (p < .05) after controlling the initial age and gender
  Group B: Time interaction effect (p < .05) after controlling the initial age and gender

Table 2: Frequency of Substance use, Smoking and Alcohol use
(0 = Never; 6 = Always)

<table>
<thead>
<tr>
<th></th>
<th>Experimental Group</th>
<th>Control Group</th>
<th>Experimental Group</th>
<th>Control Group</th>
<th>Difference* P.A.T.H.S. students</th>
<th>Non-P.A.T.H.S. students</th>
<th>Difference* P.A.T.H.S. students</th>
<th>Non-P.A.T.H.S. students</th>
<th>Difference* Time</th>
<th>Overall Substance Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ketamine Use</td>
<td>0.02</td>
<td>0.06</td>
<td>200%</td>
<td>0.02</td>
<td>0.03</td>
<td>50%</td>
<td>0.02</td>
<td>0.03</td>
<td>0.02</td>
<td>200%</td>
</tr>
<tr>
<td>Cannabis Use</td>
<td>0.01</td>
<td>0.05</td>
<td>400%</td>
<td>0.01</td>
<td>0.02</td>
<td>100%</td>
<td>0.01</td>
<td>0.02</td>
<td>0.01</td>
<td>400%</td>
</tr>
<tr>
<td>Solvent Use</td>
<td>0.03</td>
<td>0.07</td>
<td>133%</td>
<td>0.02</td>
<td>0.03</td>
<td>50%</td>
<td>0.03</td>
<td>0.07</td>
<td>0.03</td>
<td>133%</td>
</tr>
<tr>
<td>Ecstasy Use</td>
<td>0.01</td>
<td>0.05</td>
<td>400%</td>
<td>0.01</td>
<td>0.02</td>
<td>100%</td>
<td>0.01</td>
<td>0.05</td>
<td>0.01</td>
<td>400%</td>
</tr>
<tr>
<td>Smoking and Alcohol Use</td>
<td>0.02</td>
<td>0.06</td>
<td>200%</td>
<td>0.01</td>
<td>0.03</td>
<td>200%</td>
<td>0.02</td>
<td>0.06</td>
<td>0.02</td>
<td>200%</td>
</tr>
</tbody>
</table>

Note: a) all differences were statistically significant; b) baseline differences between Experimental group and Control group were controlled in the analysis; C) effect size for all differences was low to moderate; d) effect size in this study was better than reports of previous studies in adolescent substance abuse and delinquency prevention.

* Difference = (Mean of Control Group - Mean of Experimental group) / Mean of Experimental Group x 100%

Major Finding (3)
• Using delinquency and behavioral intention to engage in risk behavior as indicators, a) students in the Experimental Group (with P.A.T.H.S) had slower development than did students in the Control Group (without P.A.T.H.S); b) students in the Experimental Group who perceived the program to be beneficial to their development had slower development than did students in the Control Group.
Example 1: Global Delinquency

Differences between Experimental and Control Group participants in their growth curves

- Cases participated in Tier 1 program only
- Group X Time interaction effect \((p < 0.05)\) after controlling the initial age and gender
- Group X Time2 interaction effect \((p > 0.05)\) after controlling the initial age and gender
- Group X Time3 interaction effect \((p > 0.05)\) after controlling the initial age and gender

Example 2: Intention to Engage in Risk Behaviour

Differences between Experimental and Control Group participants in their growth curves

- Cases participated in Tier 1 program only
- Group X Time interaction effect \((p > 0.05)\) after controlling the initial age and gender
- Group X Time2 interaction effect \((p < 0.05)\) after controlling the initial age and gender
- Group X Time3 interaction effect \((p < 0.05)\) after controlling the initial age and gender

Example 3: Having Sexual Behaviors with Others

Differences between Experimental and Control Group participants in their growth curves

- Cases participated in Tier 1 program only
- Group X Time interaction effect \((p < 0.05)\) after controlling the initial age and gender

Example 4: Violence

Differences between Experimental and Control Group participants in their growth curves

- Cases participated in Tier 1 program only
- Group X Time interaction effect \((p < 0.05)\) after controlling the initial age and gender
- Group X Time2 interaction effect \((p < 0.05)\) after controlling the initial age and gender

Example 5: Stay Outside Home Overnight

Differences between Experimental and Control Group participants in their growth curves

- Cases participated in Tier 1 program only
- Group X Time interaction effect \((p < 0.05)\) after controlling the initial age and gender
- Group X Time2 interaction effect \((p < 0.05)\) after controlling the initial age and gender

Example 6: Trespasses

Differences between Experimental and Control Group participants in their growth curves

- Cases participated in Tier 1 program only
- Group X Time interaction effect \((p < 0.05)\) after controlling the initial age and gender
- Group X Time2 interaction effect \((p < 0.05)\) after controlling the initial age and gender
### Table 3: Frequency of Delinquent Behaviors

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Delinquency</td>
<td>0.43</td>
<td>0.55</td>
<td>-28%</td>
<td>0.39</td>
<td>0.48</td>
<td>-23%</td>
</tr>
<tr>
<td>Intention to Engage in Risk Behavior</td>
<td>1.42</td>
<td>1.56</td>
<td>-10%</td>
<td>1.55</td>
<td>1.64</td>
<td>-6%</td>
</tr>
<tr>
<td>Having Sexual Behaviors with Others</td>
<td>0.05</td>
<td>0.13</td>
<td>+160%</td>
<td>0.09</td>
<td>0.16</td>
<td>+78%</td>
</tr>
<tr>
<td>Violence</td>
<td>0.06</td>
<td>0.14</td>
<td>+133%</td>
<td>0.04</td>
<td>0.08</td>
<td>+100%</td>
</tr>
<tr>
<td>Stay Outside Home Overnight</td>
<td>0.11</td>
<td>0.25</td>
<td>+127%</td>
<td>0.10</td>
<td>0.17</td>
<td>+70%</td>
</tr>
<tr>
<td>Trespassing</td>
<td>0.05</td>
<td>0.10</td>
<td>+100%</td>
<td>0.03</td>
<td>0.06</td>
<td>+100%</td>
</tr>
</tbody>
</table>

Note: a) all differences were statistically significant; b) baseline differences between Experimental group and Control group were controlled in the analyses; c) effect size for difference was low to moderate; d) effect size in this study was better than reports of previous studies in adolescent substance abuse and delinquency prevention.

* Difference = (Mean of Control Group - Mean of Experimental group) / Mean of Experimental Group × 100%

### Conclusions

- Compared with students in the Control Group, students in the Experimental Group had: a) higher levels and faster development (or slower drop) in terms of different developmental outcomes; b) lower levels and slower development (or faster drop) in substance abuse and delinquency behavior.
- The Project P.A.T.H.S. protected students from risk behavior (i.e., delayed the onset of risk behavior) and it facilitated adolescent development (i.e., protective factor).
- The differences were statistically significant (i.e., not probability that the differences were due to sampling error was low).
- The effect size values were on par with or better than the international findings.

### Impact of the Project

#### Impact on the Education System

- Impact on secondary schools in Hong Kong regarding holistic youth development curriculum
- Provides a useful and practical framework with over 280 schools participating in the project. About 213,000 students have joined the scheme.
- More than half of the participating schools have included the program in the formal curriculum
- Receiving excellent comments from school principals, teachers and allied professionals

#### Impact of the Project

#### Impact on Government Policies

- The project is regarded as an anti-poverty initiative by the Poverty Commission
- The project is regarded as a key youth enhancement initiative by the Government of the Hong Kong SAR
- The project is regarded as a key adolescent prevention program (e.g. Panel on Child Fatality Review; Task Force on Youth Drug Abuse)
- The project is listed as a program that can be used for anti-drug education in schools (Resource Kit for Teachers on Anti-Drug Education)

#### Impact of the Project

#### Impact Outside Hong Kong

- The project has been adapted and implemented in Shanghai for 3 years
- The project has been adapted and implemented in Macau. The Education and Youth Affairs Bureau of Macau has initiated a pilot project to test the programs.
- Trial testing has been carried out in Singapore
- It has attracted the attention of overseas colleagues and institutions (Social Research Development Group, University of Washington). The University of Washington would collaborate with the Project P.A.T.H.S. to organize an international conference in 2012.
Impact of the Project
(Impact Outside Hong Kong)

- International recognition in academic journals and academic databases
- The project has generated many publications including books, book chapters, and journals articles
- Not just for publication sake but to create a sense of success and boost up the morale of the program implementers