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Empowering high-school students from low-income families in career decision self-efficacy: a quasi-experimental study

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ABSTRACT

Adolescents from low-income families generally have limited resources, which may negatively impact their career development. This study reports findings from the Youth Work-Explorer (Y-WE) career development program for 519 high-school students from low-income families in Hong Kong. One hundred forty-six participants received a three-day career training workshop plus work-attachment Y-WE intervention (group A); 190 received only Y-WE intervention (group B); 183 students were recruited as the control group received no intervention during the study. All participants completed a questionnaire containing three scales measuring extroversion, career knowledge, and career decision self-efficacy (CDSE) twice before and after the intervention. Relative *T*-tests and repeated measures analysis of variance (ANOVA) were used to determine the intervention's effectiveness. Results indicated that compared with the control group, participants in group A significantly improved in extroversion and career knowledge, while participants in group B significantly increased their career knowledge and CDSE.

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Career decision self-efficacy; adolescents; low-income; career knowledge; career training

Introduction

Adolescents from low-income families often have limited access to career development resources. This restricts their capacity to obtain higher education and perform well academically and negatively impacts their career decisions (Cooter et al., 2004; Holland & Deluca, 2016). Hong Kong is commonly known as a high-income society with an unacceptably high poverty level (Peng et al., 2019). It has a Gini coefficient of 0.539 (HKSARG, 2017), which is a measure of the actual income distribution amongst households compared to an even distribution amongst households, indicating vast income inequalities and, thus, relative poverty. A capitalistic economy with minimum

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government intervention, low taxes, residual welfare regimes, and so on, all contribute to a widening poverty gap in Hong Kong (Chan et al., 2014). According to the Hong Kong Poverty Situation Report 2020 (HKSARG, 2021), due to the increasing unemployment rate and rising living expenses since the outbreak of COVID, grassroots families have been affected severely: There were 274,900 adolescents aged 18 years and younger (27.0% of this age group) living below the poverty line in Hong Kong. These people from disadvantaged backgrounds may lack social and school networks and have limited family education resources. This may restrict not only their chances of admission to tertiary but also their career opportunities (Garriott et al., 2013; Hooker & Brand, 2010).

Low self-esteem and limited exposure to career discussions and resources may mean that these young people experience difficulties communicating with their teachers, and they may not actively seek the educational and career supports they require to progress through the educational system (Parks-Yancy, 2012). Besides limiting educational achievement, poverty can also reduce young people's self-esteem and extroversion. This can constrain or derail young people's career goals and opportunities by constraining their awareness of career options and knowledge about career development resources. This can adversely affect their career choices and lead to a mismatch between their qualifications and occupations because of underestimated self-perceptions (Holland & Deluca, 2016; King & Madsen, 2007; Shumba & Naong, 2016). Thus, in order to support young people in Hong Kong to optimise their academic opportunities and hence their future employment, it is crucial that high-school students from low-income families receive targeted career development advice to mitigate the effects of poverty. Therefore, this study examined the effectiveness of a career training and work-attachment program for high-school students living in poverty in Hong Kong, based on the Self-Efficacy Theory (Bandura, 1977) and the Social Cognitive Career Theory (Lent et al., 1994). The research question is whether a tailored career development intervention can improve the career capacities of high-school students from low-income families.

Theoretical basis

According to Bandura's Self-Efficacy Theory (Bandura, 1977), self-efficacy expectations determine an individual's efforts and persistence in activities such as study and work. The stronger the self-efficacy for goal attainment, the greater the intensity of subsequent efforts (Bandura & Cervone, 1983). Consistent with Bandura's theories, many studies have confirmed that personal self-efficacy in career decision-making can predict job performance and career success (Cherian & Jacob, 2013; Komarraju et al., 2014).

Subsequently, Lent et al. (1994) developed the Social Cognitive Career Theory (SCCT), which suggested that occupational self-efficacy, influenced by personal inputs and personality traits, influences occupational goals and performance attainments. These are mediated through occupational learning exposures and experiences, which provide essential pathways to connect personality, career choices, and performance (Conklin et al., 2013; Rogers & Creed, 2011; Schaub & Tokar, 2005; Thompson & Dahling, 2012). Thus, young people's career-related self-efficacy can be enhanced by engaging

in activities or career development interventions that improve their extroversion and career knowledge (Glessner et al., 2017).

Literature review

According to the meta-analysis by Whiston and her colleagues (2017), most of the existing career interventions involved college students or adults (66.1%), were conducted in American and European countries (87.5%), and adopted strategies of counselling or psychoeducation which lasted around 10hr. Very little career development intervention has been provided for high-school adolescents in Asia areas, and no intervention has been explicitly given to adolescents from low-income families, although the significance of career planning among high-school adolescents has been addressed (Radcliffe & Bos, 2013).

Several career development interventions for adolescents have been described, including online career self-assessment (Nota et al., 2016), structured career training lectures (Koen et al., 2012), workshops on campus (Koivisto et al., 2011), and career counselling groups (Santilli et al., 2019; Turner & Conkel, 2010). However, there are relatively few work-attachment career orientation programs. As learning in the workplace is vital for career development (Bok et al., 2013), it is reasonable to develop work-attachment orientation programs for high-school students whose access to education and career choices is limited by poverty.

In the famous Trait and Factor Theory, matching an individual's traits (such as personality and interests) and factors required in his/her occupational success is essential when providing vocational guidance (as cited in Patton & McMahon, 2006). Stead and Watson (2006) also stated that the Trait and factor theory assumes that knowledge of one's self and the world of work and the integration of these two sets of knowledge will enable people to make more primed career decisions. However, few previous career interventions have targeted increasing participants' knowledge of their interested careers.

Career decision self-efficacy (CDSE) refers to the self-appraisal of aspirations and capabilities when planning and developing career paths (Restubog et al., 2010). CDSE addresses self-determination and motivation for pursuing a career. Thus, its improvement can increase personal persistence when faced with higher education challenges (Wright et al., 2013). This can improve expectations for career success which, in turn, increases the range of available careers (Komarraju et al., 2014). CDSE in young people is positively correlated with career optimism and academic performance (Garcia et al., 2015; Wright et al., 2014). High school is the appropriate setting for adolescents to begin to explore careers and improve career self-efficacy (Mittendorff et al., 2010). Developing CDSE for high-school students can promote their interest in pursuing tertiary education and successfully obtaining employment in a career of their choice (Benner, 2011; Langenkamp, 2010; Radcliffe & Bos, 2013). Therefore, increasing CDSE in high-school students is essential to optimise their academic performance at high school, ensure their progression to tertiary education, and enable them to pursue their desired careers in the longer term (Benner, 2011; Radcliffe & Bos, 2013).

In accordance with the SCCT, which indicates that occupational learning exposures are connected with occupational self-efficacy (Lent et al., 1994), previous studies have

found that career knowledge can positively influence career self-efficacy (Bilal et al., 2015; Komarraju et al., 2014; Pan et al., 2011). Participation in career development interventions can improve one's career knowledge, increasing their CDSE and leading to positive job performance (Turban et al., 2017). Besides, personality traits can also influence on occupational self-efficacy (Lent et al., 1994), and a recent study has indicated that extroversion can foster adolescents' career knowledge, thereby increasing their CDSE (Yin et al., 2022). However, little research has aimed to improve adolescents' extroversion and career capacities.

Therefore, based on the Trait and Factor Theory and the Social Cognitive Career Theory, this study examined the effectiveness of a Youth Work Explorer (Y-WE) program on the career capacities of high-school students from low-income families in Hong Kong, allowing them to learn about the industry in which they were interested. The hypotheses of this study include:

1. Participation in Y-WE could significantly increase adolescents' extroversion;
2. Participation in Y-WE could significantly increase adolescents' career knowledge;
3. Participation in Y-WE could significantly increase adolescents' CDSE.

Method

Study design

This is a quasi-experimental pre-post preliminary study undertaken to establish differences in extroversion, career knowledge, and career decision self-efficacy in participants in a career training plus work explorer intervention (Group A), the work explorer program (Group B), and a no intervention (control) group.

Participants

Adolescents from low-income families living below the poverty line (HKSARG, 2021), aged 15–19, and studying in Hong Kong high schools, were recruited by 13 social service NGOs and 6 schools that identified young people from low-income families who were receiving educational subsidies, or whose family income was below the poverty line (HKSARG, 2021). Another group of high-school students was recruited by the same six schools without receiving any intervention as a control group. All participants were of Cantonese ethnicity.

Interventions

Group A received a 3-day face-to-face career training workshop including five modules: career trait identification, curriculum vitae writing, job interview skills, workplace communication skills, and personal sharing from career mentors. The workshop outline and lectures were designed and given by two registered career counsellors who have been working in a university for over 10 years. After the workshop, group A joined

the 1-week Youth Work Explorer program. Group B only joined the Y-WE part, and the control group received no intervention.

Y-WE was launched by the Hong Kong Child Development Initiative Alliance (CDIA) with collaborations from the Hong Kong government, Non-Government Organisations (NGOs), and schools in 2014 to build the career planning capacity of adolescents from low-income families in Hong Kong. Given the existing solid evidence regarding the congruence between career guidance and student's career interests (Hirschi, 2010; Wille et al., 2014), the CDIA was able to mobilise agreement from 192 organisations to offer a 1-week work-attachment exposure to participants in the Y-WE program, promoting youth development through alliances with the Hong Kong business and NGO sectors. Participants can choose their interested industry to have a 1-week 'learning-through-doing' work-attachment experience. A handbook was given to participants for guidance. It contained an introduction to the Y-WE program, career development goals, communication skills with mentors, expectations of learning, emergency arrangements, and a log sheet for recording reflections on their daily experiences. After the 1-week experience, a debriefing session was held by CDIA staff plus social workers of NGOs and schools. In separate focus group discussions of 6–12 members, participants shared their experiences and reflections on their learning. Each focus group lasted for 2 to 3 hr. Y-WE participants who failed to complete the 1-week training were invited to join the group debriefing. The facilitators, with their rich industry experience and knowledge, guided the adolescents in a deeper appreciation of their experiences.

Procedures

This study was conducted from June 2019 to October 2022. Eligible participants were invited to join a meeting with their parents, which introduced the whole program and required cooperation from their parents. The written consent form was obtained, and a pre-intervention questionnaire was administered at the meeting. Participants were allocated into Group A or B based on different recruitment times. In the debriefing session at the end of the work explorer program, Group A and Group B participants filled in the same questionnaire for post-intervention assessment. The control group also completed two administrations of these questionnaires at similar times to the intervention participants.

Measurements

Previous studies have indicated that extroversion can be shaped during adolescence through educational practices, and it can foster adolescents' career knowledge, thereby increasing their CDSE (Dahmann & Anger, 2014; Schofield et al., 2012; Yin et al., 2022). Therefore, the evaluation questionnaire contained composite measures of adolescents' extroversion, career-related knowledge, and career decision self-efficacy.

1. Extroversion was measured by a ten-point scale containing five items adopted from the Big Five Inventory (BFI) (John & Srivastava, 1999), including outgoing, talkative, sociable, energetic, and assertive facets, e.g. 'I start conversations'.

The Chinese version of BFI has shown good reliability and validity among Chinese adolescents (Wang et al., 2015). The total score was 50, with higher scores indicating stronger extroversion;

2. Aspects of career knowledge were measured by four items extracted from the career information subscale of the Career Development Questionnaire (Langley et al., 1996), i.e. 'I know what to do to obtain more information on possible occupations I have in mind' (direction), 'I know what a typical workday will be like in the occupation I am considering' (career environment), 'I am aware of related occupations in the occupational field I am interested in' (interested career), and 'I know what the demand is for people in the occupational I have in mind' (requirement). To better present participants' level of career knowledge, a ten-point scale was adopted, ranging from not very clear (1) to very clear (10), with total scores of 40, with higher scores indicating more excellent knowledge; and
3. Career decision self-efficacy was measured by a six-point scale for seven items adopted from the Career Development Self-Efficacy Inventory (CDSEI) (Yuen et al., 2005). CDSEI measures an individual's self-efficacy in exploration and preparation for a career. For example, what is the level of self-efficacy in 'selecting the most suitable college and subject to prepare for future career'? The six-point scales in the modified CDSEI range from 1 (very unconfident) to 6 (very confident). Higher scores indicate greater CDSE in career decisions. Yin et al. (2022) examined the structure of the seven items and found two dimensions: three relating to career plan self-efficacy; four relating to career training self-efficacy, with good reliability and validity among high school students in Hong Kong.

Data analysis

Descriptive and comparative analysis was conducted using SPSS 24.0. Validity and reliability testing of the measurements in the study population was conducted using exploratory factor analysis and Cronbach's alpha. Independent *T*-tests and chi-square tests established differences in baseline scores between intervention and control groups. Paired-sample *T*-tests examined within-group differences by comparing pre-test and post-test results for each group. Repeated measures analysis of variance (ANOVA) was used to determine the between-group effect. Effect sizes were calculated using Cohen's *d* for mean differences of groups within a pre-post-control design for each intervention group, and partial η^2 considering Time \times Group interactions (Cohen, 1988). Pearson's correlation tests and regressions were further conducted to present the relationships between the intervention outcomes. Differences at $p < .05$ were determined as statistically significant.

Results

Participants

As shown in Figure 1 and Table 1, 336 adolescents undertook the interventions (groups A and B) with a mean age of 16.70 years ($SD = 0.81$). Of these, 173 (51.5%) were female

students. There were 183 control participants with a mean age of 16.75 years ($SD = 0.77$); 85 (46.4%) were females. Participants in Group A completed the whole intervention, while 13 in Group B failed to join the debriefing session, and thus 6.8% of group B participants did not fill in the post-test. As the work attachment was mainly conducted after the summer break, some participants might have found paid work or travelled back to the mainland, thus skipping the debriefing session. One hundred sixty-six adolescents in the comparison group completed the post-test, with a dropout rate of 9.3%.

Reliability and validity

Reliability tests of the three measurements of career knowledge, extroversion, and CDSE presented a Cronbach's α of 0.803, 0.881, and 0.926, respectively, indicating

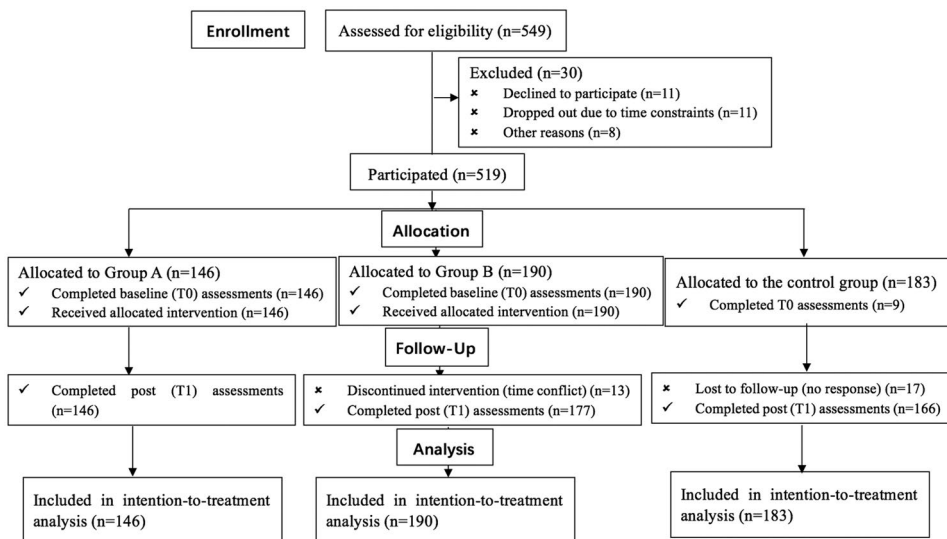


Figure 1. CONSORT diagram of the participants flow.

Table 1. Participants' characteristics of the three groups.

Variables	Group A (n = 146)	Group B (n = 190)	Control Group (n = 183)	F	χ^2	p
Age: Mean (SD)	16.74 \pm 0.73	16.67 \pm 0.87	16.75 \pm 0.77	0.48	—	.618
Female	69 (47.3%)	104 (54.7%)	85 (46.4%)	—	3.05	.218
Academic performance				—	3.47	.483
Below average	18 (12.3%)	28 (14.7%)	35 (19.1%)			
Average	96 (65.8%)	116 (61.1%)	109 (59.6%)			
Above average	32 (21.9%)	46 (24.2%)	39 (21.3%)			
Family monthly income				—	14.91	.061
Below \$5,000	4 (2.7%)	12 (6.3%)	2 (1.1%)			
\$5,000–\$9,999	9 (6.2%)	11 (5.8%)	9 (4.9%)			
\$10,000–\$14,999	18 (12.3%)	35 (18.4%)	30 (16.4%)			
\$15,000–\$19,999	15 (10.3%)	26 (13.7%)	15 (8.2%)			
\$20,000 or above	21 (14.4%)	13 (6.8%)	20 (10.9%)			
Unknown	79 (54.1%)	93 (48.9%)	107 (58.5%)			

Note. SD: standard deviation.

high internal consistency. For the validity test, principle factor analysis of the four items measuring career knowledge showed a one-factor structure with the Kaiser–Meyer–Olkin (KMO) value of 0.822, $\chi^2 = 1179.53$ ($df = 6$, $p < .001$), and factor loadings ranging from 0.812 to 0.911; the five items measuring extroversion showed a one-factor structure with the KMO value of 0.802, $\chi^2 = 796.95$ ($df = 10$, $p < .001$), and factor loadings ranging from 0.704 to 0.837; CDSE presented two factors, the career plan factor has a KMO value of 0.723, $\chi^2 = 836.20$ ($df = 3$, $p < .001$), and factor loadings ranging from 0.747 to 0.848, while the career training factor has a KMO value of 0.840, $\chi^2 = 1175.00$ ($df = 6$, $p < .001$), and factor loadings ranging from 0.831 to 0.892. Thus, the measurement of the three outcomes had good reliability and validity.

Effectiveness of the interventions

Within-group pre- and post-test results for intervention and control groups are reported in Table 2. After receiving the interventions, participants in group A reported significant improvement in extroversion ($d = 0.10$, $p < .05$), total career knowledge ($d = 0.45$, $p < .001$), and its four aspects of career direction ($d = 0.14$, $p < .001$), environment ($d = 0.65$, $p < .001$), interested career ($d = 0.38$, $p < .001$), and requirement ($d = 0.42$, $p < .001$); participants in group B reported a significant increase in total career knowledge ($d = 0.40$, $p < .001$) and its four aspects of career direction ($d = 0.11$, $p < .001$), environment ($d = 0.60$, $p < .001$), interested career ($d = 0.31$, $p < .001$), and requirement ($d = 0.39$, $p < .001$), total CDSE ($d = 0.21$, $p < .001$) and its two dimensions of career plan ($d = 0.16$, $p < .01$) and career training ($d = 0.23$, $p < .001$). The effect sizes were small to medium. There was no significant change in the control group in any of these measures (all $p > .1$).

Table 2 also reports the time \times group interaction showing the between-group differences. The intervention groups had consistently significantly greater improvements than the control group for career knowledge and CDSE: participants' total career knowledge ($\eta^2 = 0.08$, $p < .001$) and knowledge of career environment ($\eta^2 = 0.10$, $p < .001$), interested career ($\eta^2 = 0.05$, $p < .001$), requirement ($\eta^2 = 0.06$, $p < .001$); total CDSE ($\eta^2 = 0.02$, $p < .05$) and career training-related CDSE ($\eta^2 = 0.02$, $p < .01$). The effect sizes were small to medium effect sizes.

Relationships between the outcomes

Two-tailed Pearson's correlation tests were conducted to examine the relationships between extroversion, career knowledge, career plan self-efficacy, and career training self-efficacy using the pre-test data, post-test data, and change values. For the pre-test results, the four variables were all significantly correlated with each other ($p < .001$), with coefficient r values ranging from 0.41 to 0.80; for the post-test results, the four outcomes were all significantly correlated with each other ($p < .001$), with r values ranging from 0.39 to 0.83; for the change values, the four aspects were all significantly correlated with each other ($p < .001$), with r values ranging from 0.16 to 0.61.

Three regression models were then generated to determine the relationship between extraversion change and career knowledge change and their influences on

Table 2. Pre-test and post-test results comparison of the three groups.

Outcomes (mean \pm SD)	Group A (n = 146)			Group B (n = 190)			Control group (n = 183)			Time \times Group interaction	
	T0	T1	Effect size d^a	T0	T1	Effect size d^a	T0	T1	Effect size d^a	p	Effect size η^2
Extroversion	29.93 \pm 6.33	30.66 \pm 7.57*	0.10	30.03 \pm 6.29	30.25 \pm 6.41	0.03	29.54 \pm 8.68	29.52 \pm 9.01	0.03	.313	0.00
Career knowledge	24.53 \pm 6.41	27.67 \pm 5.75***	0.45	22.46 \pm 6.37	25.20 \pm 6.04***	0.40	23.35 \pm 7.20	23.38 \pm 7.10	0.40	.000***	0.08
Direction	6.49 \pm 1.82	6.94 \pm 1.70***	0.14	5.96 \pm 1.98	6.34 \pm 1.77***	0.11	5.88 \pm 2.34	6.03 \pm 2.23	0.11	.121	0.01
Career environment	5.90 \pm 2.00	7.06 \pm 1.49***	0.65	5.20 \pm 1.85	6.23 \pm 1.66***	0.60	5.80 \pm 1.95	5.68 \pm 2.01	0.60	.000***	0.10
Interested career Requirement	6.25 \pm 1.70	6.95 \pm 1.53***	0.38	5.87 \pm 1.77	6.44 \pm 1.67***	0.31	6.00 \pm 2.01	5.98 \pm 1.97	0.31	.000***	0.05
Requirement	5.89 \pm 1.94	6.73 \pm 1.66***	0.42	5.43 \pm 1.89	6.20 \pm 1.76***	0.39	5.67 \pm 2.00	5.69 \pm 1.89	0.39	.000***	0.06
CDSE	29.84 \pm 5.02	30.16 \pm 5.01	0.06	28.76 \pm 5.92	29.94 \pm 5.56***	0.21	28.38 \pm 5.37	28.38 \pm 5.65	0.21	.010*	0.02
Career plan	13.01 \pm 2.35	13.10 \pm 2.10	0.05	12.64 \pm 2.67	13.01 \pm 2.45**	0.16	12.46 \pm 2.36	12.43 \pm 2.47	0.16	.106	0.01
Career training	16.83 \pm 3.02	17.06 \pm 3.09	0.06	16.12 \pm 3.55	16.94 \pm 3.39***	0.23	15.92 \pm 3.29	15.95 \pm 3.42	0.23	.006**	0.02

^aCompared with the control group; SD: standard deviation; CDSE: career decision self-efficacy. *p<0.05; **p<0.01; ***p<0.001.

the levels of the two domains of CDSE change. As shown in Table 3, after controlling for the impact of sociodemographic factors, including gender, age, academic performance, and family income, the change of extraversion significantly influenced the change of career knowledge (stan. $\beta=0.32$, $p<.001$); the changes of extraversion and career knowledge significantly influenced the change of career plan self-efficacy (stan. $\beta_1=0.19$, $p<.01$; stan. $\beta_2=0.34$, $p<.001$) and career training self-efficacy (stan. $\beta_1=0.18$, $p<.01$; stan. $\beta_2=0.38$, $p<.001$).

Discussion

This paper reports new knowledge regarding the impact of the 'learning-through-doing' work-attachment program on the career decision self-efficacy of high school students from low-income families in Hong Kong. This study adds to the increasing body of evidence that supports the uptake of career development programs in education institutes worldwide (Khan et al., 2011; Yuen et al., 2010). Research Hypothesis 1 was not supported. Participants in group A who received career training plus Y-WE have increased extroversion significantly but slightly; participants who only joined the Y-WE intervention did not report a significant change in extroversion. The evaluation findings have supported Hypotheses 2 and 3, suggesting that participation in the Y-WE program significantly improved career knowledge and CDSE compared to a control group. The intervention results presented a small to medium effect size, which was in accordance with the meta-analysis on the effectiveness of 57 previous career interventions carried out by Whiston et al. (2017). Besides, the career knowledge effect sizes of group A participants were higher than those of group B participants, showing the effectiveness of the career training workshop on career knowledge improvement. However, participants who received career training plus Y-WE experienced no significant improvement in CDSE compared to those who only received Y-WE intervention. This might be because the career training workshop created somewhat high standards that were hard to achieve during the work explorer period while the career knowledge increased.

Further correlation tests and regression results indicated significant associations between extraversion, career knowledge, and the two domains of CDSE. The findings align with Bandura's Self-Efficacy Theory (Bandura, 1977) and Lent's Social Cognitive

Table 3. Relationships between the outcomes change controlling for sociodemographic factors.

	Model 1 Career knowledge		Model 2 Career plan		Model 3 Career training	
	Stan. B	<i>p</i>	Stan. β	<i>p</i>	Stan. β	<i>p</i>
Age	0.00	.952	0.02	.730	0.05	.418
Gender	0.08	.202	0.13	.024*	0.10	.104
Academic performance	0.13	.042*	-0.03	.647	-0.02	.698
Family income	0.00	.942	0.07	.216	0.03	.575
Extraversion	0.32	.000***	0.19	.002**	0.18	.004**
Career knowledge	/	/	0.34	.000***	0.38	.000***

Note: Model 1 examined the influence of sociodemographic factors and extraversion change on career knowledge change (adjusted $R^2 = 0.10$, $F=6.38$, $p<.001$); Model 2 examined the influence of sociodemographic factors, the changes of extraversion and career knowledge on the change of career plan related self-efficacy (adjusted $R^2 = 0.20$, $F=10.75$, $p<.001$); Model 3 examined the influence of sociodemographic factors, the changes of extraversion and career knowledge on the change of career training related self-efficacy (adjusted $R^2 = 0.21$, $F=11.81$, $p<.001$). * $p<0.05$; ** $p<0.01$; *** $p<0.001$.

Career Theory (Lent et al., 1994), which suggest the correlation between personality traits and occupational self-efficacy, and that through increased career-related knowledge, adolescents' CDSE will significantly improve (Bandura & Cervone, 1983; Pan et al., 2011). The intervention framework based on the Trait and Factor theory, which combined adolescents' interests with career knowledge, also clarified the significance of integrating an individual's self-knowledge and career knowledge in making informed career decisions (Stead & Watson, 2006). Moreover, our findings concur with the international literature, which reports an increasing body of evidence that career planning and career development programs for adolescents prepare them better to develop their career aspirations and promote school success (Choi et al., 2015; Hirschi & Läge, 2008; Mittendorff et al., 2010). It also improves their extroversion, career knowledge, and career decision self-efficacy (Glessner et al., 2017; Komarraju et al., 2014; McComb-Beverage, 2012; Turban et al., 2017).

Previous research consistently reported that adolescents from low-income families (living in poverty) could be restricted in their educational development and career resources (Diemer, 2007; Holland & Deluca, 2016). Y-WE is one of the first interventions targeted at adolescents from low-income families in highly competitive Asian cities like Hong Kong. The Y-WE project started in 2014, and until this evaluation study was undertaken in the 2019–2022 wave, more than 1,000 high school students from low-income families in Hong Kong participated in it. This article provides the first systematically collected evidence of the impact of this program, which might now assist a wider program roll-out that might break the impact of the 'poverty circle' in Hong Kong that limits the career aspirations of young people from low-income families (Rasheed Ali & Saunders, 2009).

Limitations

This study has several limitations. Firstly, the choice of a quasi-experimental study design may incur biases in the non-random allocation of students into intervention and control arms which were not observed through baseline evaluations. Secondly, participant recruitment was purposive, which potentially biased the samples in their capacity to respond to the intervention, and limited the generalisability of findings, although a control group was recruited from schools with similar socioeconomic profiles. Thirdly, intervention participants were selected from various businesses and industries for their work-related experience, which would have given them different exposures to workplaces and mentors. Thus participants might have grown at different rates and in different ways. Last but not least, further follow-up measures were not used to evaluate the mid-term to long-term effects of the program. Therefore, future studies should aim to conduct randomised controlled trials, with randomly selected subjects allocated to treatment arms, which would systematically control for the effects of confounders, and design follow-up measures to assess long-term intervention effects.

Conclusion

This article reports preliminary findings that a one-week career development program, combining the efforts of social workers, business organisations, work mentors, and

parents, can increase high-school students' career knowledge, thereby improving their CDSE and future career opportunities.

Some implications

Career skills training and work-attachment interventions are suggested to be provided by educational organisations, especially for high school students from low-income families.

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This program was possible because the many business partners welcomed these high school students into their organizations and provided them with individual mentoring—great appreciation to those business partners and volunteer mentors.

Ethics approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee, the APA ethical standards and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. The study has obtained the approval of the Ethics Committee of Hong Kong University (No. EA200007).

Consent to participate

Informed consent was obtained from all participants and their parents in the study.

Authors contributions

All authors contributed to the study conception and design. Material preparation, data collection and analysis were performed by MXCY, AKWC and CLWC. The first draft of the manuscript was written by MXCY and all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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Data availability statement

The datasets used or analysed during the current study are available from the corresponding author on reasonable request.

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