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Relationships Among Hong Kong Secondary School Students' Self-efficacy, Autonomous Motivation, Psychological Needs Satisfaction, and Psychological Well-being in the Participation of Non-academic Activities

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Self-determination theory posits that people with autonomous motivation orientation have better psychological well-being. Using well-validated questionnaires, in the present study we aimed at identifying factors in 814 Hong Kong grade 10–11 secondary school students' non-academic activities participation associated with their psychological needs, personal-social development self-efficacy, and negative emotional symptoms like depression, anxiety, and stress. Findings showed that students who had higher involvement in non-academic activities (e.g., playing larger roles and more engagement) showed higher self-efficacy, psychological well-being, psychological needs satisfaction, and autonomous motivation but reported to have fewer negative emotional symptoms. However, the study also found that participating in too many non-academic activities could undermine self-efficacy and psychological well-being and provoke negative emotional symptoms. Structural equation modeling analyses demonstrated that students who were more satisfied with psychological needs and who perceived more autonomy support from instructors showed higher self-efficacy and psychological well-being, as well as

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lower depression, anxiety, and stress, which was further mediated by autonomous motivation. While students with higher socioeconomic status tended to spend more but engage less and use less time on non-academic activities than those with lower socioeconomic status, no significant difference was found in the self-efficacy, psychological well-being, and negative emotional symptoms between the two socioeconomic status groups. Thus, it is more important in the ways that students participated in non-academic activities, but not how much they had spent on them. The role and effective practices of different stakeholders in non-academic activities are discussed.

Keywords: non-academic activities; psychological well-being; personal-social development self-efficacy

Introduction

Nowadays, "winning on the starting line" (贏在起跑線上) has become a popular topic in Hong Kong. Parents tend to push forward their children in both academic and non-academic areas as early as possible so that they can increase their competitiveness when compared to others with the same age. Despite the parents' good will, their endless demand may have negative effects on their children's psychological well-being. Some children may even hate to go to school due to the overwhelming academic and non-academic activities. Nonetheless, researchers have revealed the positive effect of non-academic activities on students' academic achievements, career aspirations, and success in non-academic pursuits after graduation (Holland & Andre, 1987), as well as students' personality and peer acceptance (Shi, 1996). Participating in non-academic activities could enhance self-esteem and reduce depression symptoms (Mahoney, Schweder, et al., 2002). However, it is important to investigate whether over-participation of those activities might reduce their benefit on students' psychological outcomes. Besides, it has not been clear how autonomous motivation and self-efficacy play role in the relationships among psychological needs satisfaction, psychological well-being, and negative emotional symptoms (e.g., depression) in the participation of non-academic activities. Hence, we aimed at addressing two questions in the current study. First, what are the factors that moderate the benefit of non-academic activities participation? For instance, could the benefit still occur when they participate in a larger number of activities or more hours per week for the activities? Could the benefit be larger for those with higher socioeconomic status (SES) and for those who invest more money in the activities? Second, what are the potential roles of variables like autonomous

motivation in the relationships among psychological needs satisfaction, psychological well-being, and negative emotional symptoms in the participation of non-academic activities? Before elaborating on the design and results of our study, we first review the literature to motivate our hypotheses.

Factors Associated With the Effects of Non-academic Activities Participation

In the education reform in Hong Kong, other learning experiences (OLE) is included as one of the major components of the senior form curriculum, which should comprise not less than 15% of the senior secondary curriculum time (Curriculum Development Council, 2009). Through gaining learning experiences that are different from academic subjects, OLE aims at promoting whole-person development in moral and civic education, aesthetic development, physical development, community service, and career-related experience. OLE can be implemented in regular lessons, after-school activities or outside-school activities, in contrast to traditional extracurricular activities that are carried out after school time. Leisure activities could be classified as structured or unstructured. According to Morrissey and Werner-Wilson (2005), in contrast to "relax leisure" that has no structure and is not demanding (e.g., watching television), structured leisure activities are organized and supervised by adults, such as learning musical instruments (e.g., piano and violin), learning foreign language, dancing, and community-based voluntary service (see also Linver et al., 2009). In the current study, we regarded OLE, extracurricular activities, and structured leisure activities as non-academic activities. Few research has been reported on the benefit of non-academic activities in Hong Kong. Extracurricular activities were found to be positively related to academic performance, personality, and peer acceptance in Hong Kong secondary school students (Fung & Wong, 1991). Participating in extracurricular activities could develop students' potential to a greater extent (Shi, 1996). After the OLE component is implemented in local curriculum, it is important to re-examine this issue nowadays.

Apart from participation in non-academic activities per se, it is important to consider the factors that might moderate its benefit, such as how students should involve in the activities to maximize their positive outcomes on psychological well-being. Farb and Matjasko (2012) found that level of non-academic activities participation (i.e., breadth, intensity, and duration) were important predictors for student outcomes (e.g., psychological well-being). Breadth refers to the number of activities that students participated in the last year, intensity refers to the number of hours per week that students participated in all

non-academic activities, and duration refers to the number of years that they participated in non-academic activities. Besides, studies showed that students with different SES are differentially benefited from non-academic activities. The participation in 8th grade school sports teams was associated with a decrease in depression for children with higher SES but not for those with lower SES (Fredricks & Eccles, 2008). However, Marsh and Kleitman (2002) suggested that youth with lower SES benefited more from extracurricular participation than those with higher SES. Given that no study in Hong Kong has taken the above variables (e.g., SES) into account, in the current study we took them into account and examined how involvement factors (i.e., the role that students play, the extent to which they are engaged, and participation cost) are associated with the benefit of non-academic activities participation on psychological outcomes (e.g., self-efficacy) of secondary school students in Hong Kong.

Relationship Between Psychological Needs Satisfaction and Psychological Well-being in the Non-academic Activities Participation

According to self-determination theory (SDT) (Deci & Ryan, 2000; Ryan & Deci, 2000), fulfilling three psychological needs (autonomy, competence, and relatedness), accompanied with intrinsic motivation orientation may lead to autonomous-regulated behaviors, such that individuals will eventually achieve fully functioning personality, psychological health, and psychological well-being. In the current study, we tested whether autonomous motivation may mediate the relationship between psychological needs satisfaction and psychological well-being. According to SDT, motivation varies from intrinsic, self-determined/autonomous orientation to extrinsic, controlled orientation. One may feel more self-directed when being driven by autonomous motivation, but feel more pressurized to behave in a certain way and experience little to no autonomy when being driven by controlled motivation (Ryan & Deci, 2008). Research showed a benefit of non-academic activities participation on psychological needs satisfaction (e.g., Grolnick, Farkas, et al., 2007; Jang et al., 2010; Levesque-Bristol & Stanek, 2009), but few studies have touched base on the subsequent effect on psychological well-being. One of the exceptions, Standage et al. (2005), examined if self-determined/autonomous motivation mediated between psychological needs satisfaction and psychological well-being of students in Physical Education. They collected questionnaires from 950 secondary school students aged 11 to 14 in Britain, such as Learning Climate Questionnaire, Basic Psychological

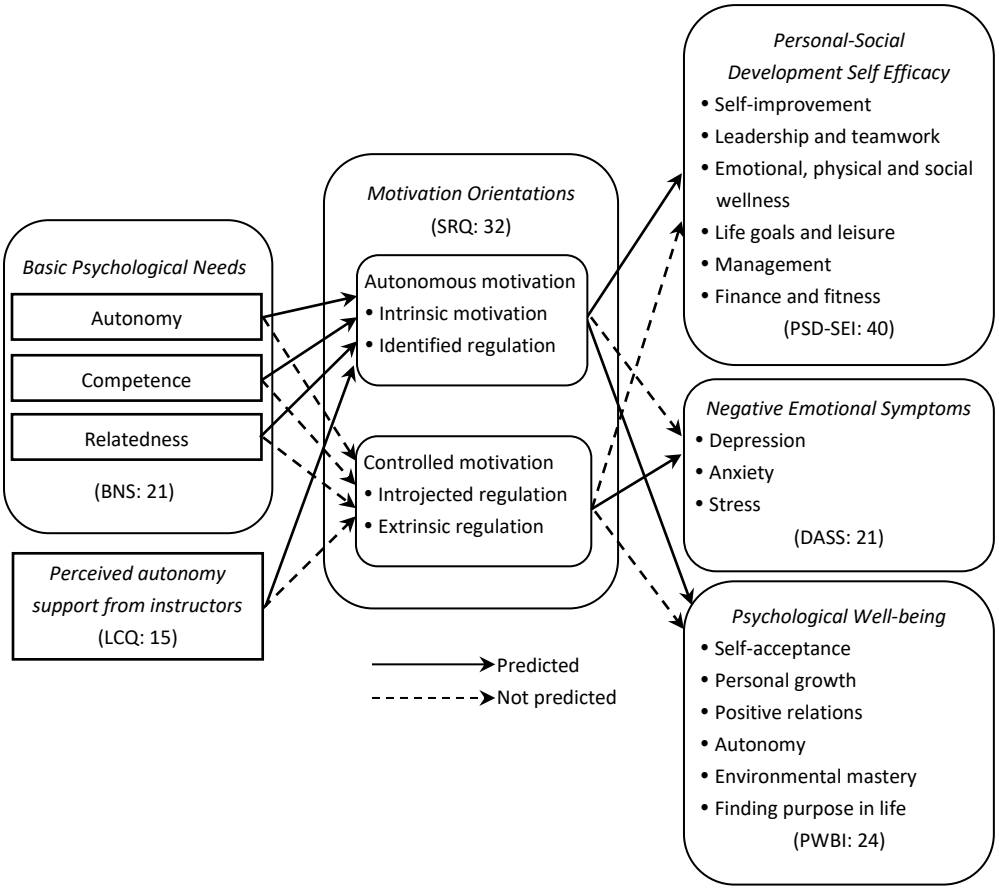
Needs Satisfaction Questionnaire, Perceived Locus of Causality scale, concentration level in physical education, positive and negative affect, and preference for challenging task. They showed that self-determined motivation mediated psychological needs satisfaction and psychological well-being of students. On the other hand, Reeve (2009) showed that perceived autonomy support from instructors also plays a crucial role in nurturing students' intrinsic motivation because it is the interpersonal sentiment and behavior that instructors provide to identify, nurture, and develop students' inner motivational resources through allowing choices and supporting active problem solving (see also Reeve et al., 2004). Thus, in the present study, we examined whether autonomous motivation could play a mediating role in the positive relationship between psychological needs satisfaction and/or perceived autonomy support from instructors in non-academic activities participation and psychological outcomes such as self-efficacy and psychological well-being.

Figure 1 presents a hypothesized model for the current study. There are seven constructs: psychological needs (autonomy, competence, and relatedness), perceived autonomy support from instructors, autonomous and controlled motivation orientations, personal-social development (PSD) self-efficacy, psychological well-being, and negative emotional symptoms (depression, anxiety, and stress). Based on Deci and Ryan's (2000) SDT, we proposed that autonomous motivation (intrinsic and identified regulation), rather than controlled motivation (extrinsic and introjected regulation), could mediate the benefit of psychological needs satisfaction on psychological outcomes of participating in non-academic activities (e.g., psychological well-being) (see also Standage et al., 2005).

Hypotheses

1. There would be positive effects of non-academic activities participation on the PSD self-efficacy, psychological needs satisfaction, and psychological well-being but negative effects on negative emotional symptoms.
2. There would be a threshold for the benefit of non-academic activities participation. Over-participation might diminish the positive effect on PSD self-efficacy and psychological well-being and boost the adverse effect on negative emotional symptoms.
3. There would be positive effects on PSD self-efficacy, psychological well-being, psychological needs satisfaction, and autonomous motivation but fewer negative emotional symptoms for students who had higher involvement in non-academic activities (e.g., playing larger roles and more engagement).

Figure 1: The Conceptual Framework of the Present Study



Note: See the Materials section for the full names of the scales used in the current study.

4. Following prior studies (e.g., Farb & Matjasko, 2012), psychological needs satisfaction, perceived autonomy support from instructors, autonomous motivation would predict PSD self-efficacy, psychological well-being, and negative emotional symptoms through non-academic activities participation.
5. Following Standage et al. (2005), autonomous motivation would mediate the relationships among psychological needs satisfaction, perceived autonomy support from instructors on PSD self-efficacy, psychological well-being, and negative emotional symptoms of students through non-academic activities participation.
6. While low SES students would likely be inferior to high SES students in resources for non-academic activities participation, there would be no difference in the benefit between low SES and high SES students. Rather, boosting autonomous motivation

would be the key for the benefit of non-academic activities participation on psychological well-being.

Methods

Participants

We invited students from six secondary schools across different districts serving lower- to upper-middle class families by convenience sampling. In total, 1,146 students completed the full set of questionnaires on May to June 2016. The informed consent was obtained from school principals, as well as all student participants. The study was approved by the Survey and Behavioral Research Ethics Committee of The Chinese University of Hong Kong. Analyses of outliers found that some students showed abnormality in some measures, such as level of participation (breadth, intensity, and duration) and cost of the participation. The values were largely deviated from sample mean (e.g., more than 3 *SD*), which might be due to students' misunderstanding of the questions (e.g., spending 300 hours on non-academic activities per week or participating in 360 non-academic activities per year). After excluding these outliners, we performed analyses on the valid data of the remaining 814 students.

Materials

The questionnaire was presented in Chinese and composed of eight sections. It was initially translated by the researcher from the original English version, proofread by an English teacher, and then verified in the pilot study. Non-academic activities are defined as OLE organized by schools, extracurricular activities, and structured leisure activities (such as learning musical instruments and community-based voluntary service), in contrast to academic activities like tutorials. The following are the details of the eight sections:

1. *Students' demographic information* — name, class, school, age, gender, level of study, and SES. Students' name, class, and school were collected for the ease of administration, but they were not listed in the dataset to avoid the data security issue. Due to the Personal Data (Privacy) Ordinance, we could not directly ask for students' SES in participating schools, such as education level and annual income of their parents, as typically done in previous studies. Rather, we could only infer students' SES by asking whether they have received any form of subsidies or allowance from the government.

2. *Level of participation in non-academic activities* — breadth (how many different types of activities did you participate during the last year?), intensity (how many hours per week did you participate in non-academic activities?), duration (how many years did you participate in non-academic activities, including primary school?), cost (how much do you spent on non-academic activities per month?), engagement (during the last year, did you engage in planning and organizing non-academic activities?), and role of participation (did you have a post in your participating non-academic activities?).
3. *Basic Psychological Needs Scale (BNS)* — We adopted 21-item Basic Psychological Needs Scale (La Guardia et al., 2000) to measure autonomy, competence, and relatedness, as defined by SDT. One part of the scale addresses needs satisfaction in general in one's life and the other addresses needs satisfaction in specific domains, which was referred to non-academic activities.
4. *Learning Climate Questionnaire (LCQ)* — We slightly modified Williams et al.'s (1994) version with wording being pertinent to the non-academic activities in order to measure students' perception toward autonomy support from instructors.
5. *Personal-Social Development Self-Efficacy Inventory (PSD-SEI)* — We adopted a simplified version of Yuen et al. (2004), with items related to Avoiding Drugs, Drinking and Smoking, Marriage and Family Responsibilities, Health and Physical Training, Sexual Knowledge and Relationship, and Financial Management being omitted due to their irrelevancy to our purpose. A 40-item 10-factor version was used. The summed score was computed to reflect students' PSD self-efficacy.
6. *Psychological well-being Inventory (PWBI)* — We adopted the 24-item scale (Ryff & Singer, 1996) to measure students' autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance. The summed score was computed to reflect students' psychological well-being.
7. *Self-regulation Questionnaire (SRQ)* — We adopted 32 items from Ryan and Connell's (1989) scale to examine why students participated and engaged in non-academic activities in their school and measure their relative autonomous motivation orientation such as external regulation, introjected regulation, identified regulation, and intrinsic regulation. This scale represents overall autonomous motivation in a single value, as computed by assigning weights to intrinsic motivation (+2), identified regulation (+1), introjected regulation (–1), and external regulation (–2), and summing these weighed scores (Vansteenkiste et al., 2005; see also Kusurkar et al., 2013).

8. *Depression, Anxiety and Stress Scales (DASS)* — We adopted the Chinese version of this scale (Moussa et al., 2001) in which students rated the frequency and severity of experiencing negative emotions over the last week. This scale was found to be reliable and easy to administer in adolescent population (e.g., Norton, 2007). The frequency was converted to scores, which were summed up to reflect students' depression, anxiety, and stress.

Procedure

Questionnaires were sent to schools, where students completed the questionnaire in 25 minutes. Teachers assisted in delivering the questionnaires to students and collecting the filled ones at the end.

Results

There were in total 814 valid questionnaires filled out by students, with 40.9% of them being boys and 59.1% of them being girls. About 0.2%, 52.4%, and 47.0% of students were at grade 9, 10, and 11 respectively. The mean age of students was 16.34 (*SD* = 0.99, range = 12–21). To identify students' SES, we asked them to report whether they have received any kind of subsidies from the government, with those reporting "yes" being categorized as low SES students (45.8%), whereas those reporting "no" being categorized as high SES students (54.2%). About 10% of students did not answer this question.

SPSS 19.0 was used for our basic analyses. Structural equation modeling (SEM) analyses were carried out using AMOS 24.0. Comparison was done between the proposed and tested model in order to test the invariance of the model. The indices used for estimating goodness of fit of the model were Chi-square goodness of fit value, Normed Fit Index (NFI), Comparative Fit Index (CFI), Root Mean Square residual (RMR) and Root Mean Square Error of Approximation (RMSEA). Only significant effects are reported.

Student's Participation and Involvement in Non-academic Activities

Level of participation (breadth, intensity, and duration)

The mean breadth was 6.725 (*SD* = 6.948, range = 0–40), showing that in the last year, students participated in 6.725 activities on average, including school activities and structured

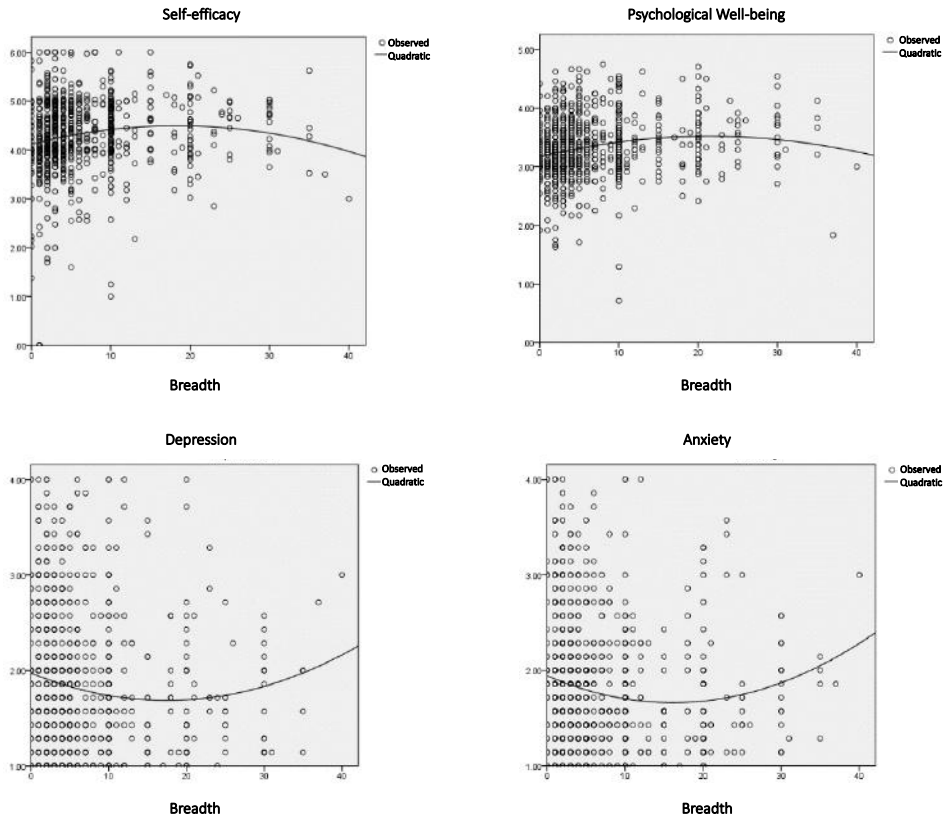
leisure activities. The mean intensity was 4.678 (*SD* = 5.212, range = 0–36), suggesting that students spent about 4.678 hours on non-academic activities per week. The mean duration was 7.731 (*SD* = 3.589, range = 0–18), indicating that students had had about 7.731 years of experience in non-academic activities.

When comparing with the previous finding of Fung and Wong (1991) in Hong Kong, the mean number of hours spent on non-academic activities was increased from 4.14 hours to 4.678 hours per week. However, the mean number of non-academic activities taken up each year was largely increased from 1.54 to 6.725. Although the definition of non-academic activities was different in Fung and Wong (only including extracurricular activities) and in the current study (including extracurricular activities, OLE, and structured leisure activities), the increase has still been very large. With a similar definition, the number of non-academic activities of our Hong Kong sample was slightly higher than that of their peers in the U.S. (about 5 in Mahoney, Harris, et al., 2006). When the intensity is divided by breadth, we found that the mean number of hours spent on each non-academic activity decreased from 2.69 hours in Fung and Wong to 0.70 hours in the current study. This suggests that students might have a wider participation on different non-academic activities but a shallower involvement on each of their non-academic activities nowadays, assuming that students spent equal portion of time on every non-academic activity they have participated last year, which should be further verified by other means, such as focus-group interview, in the future studies.

Quadratic regression analyses were used to test the trend of the following participation data and identify the optimal, peak values in the mathematical functions. The optimal number of hours was calculated in quadratic regression analyses, with the maximum and minimum being calculated by $\frac{-b_1}{2b_2}$ where b_1 and b_2 were the regression coefficients of the quadratic regression line $y = b_2 x^2 + b_1 x + c$:

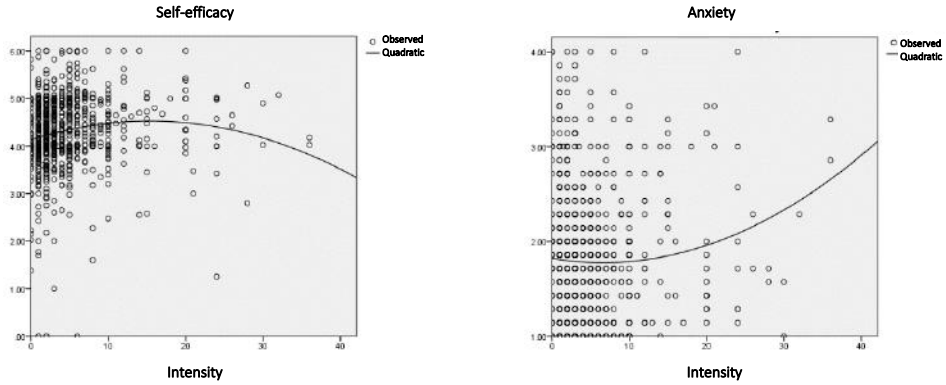
1. *Breadth* — There was a significant quadratic trend against breadth in PSD self-efficacy, $F(2,811) = 9.047$, $p < .001$; psychological well-being, $F(2,791) = 15.264$, $p < .001$; depression, $F(2,799) = 5.642$, $p < .01$; and anxiety, $F(2,802) = 6.797$, $p < .01$. As indicated in Figure 2, PSD self-efficacy and psychological well-being reached their maximum when breadth was about 18.3 and 21.5 respectively, while depression and anxiety reached their minimum when breadth was about 17.4 and 16.1 respectively. This suggests that there was a peak where an optimal number of non-academic activities (about 16.1–21.5) could yield highest PSD self-efficacy and psychological well-being and lowest depression and anxiety.

Figure 2: PSD Self-efficacy, Psychological Well-being, Depression, and Anxiety Against Breadth



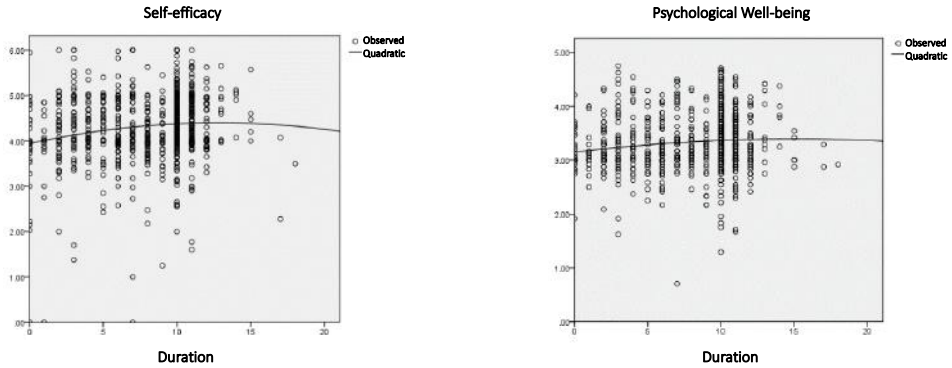
2. *Intensity* — There was a significant quadratic trend against intensity in PSD self-efficacy, $F(2,811) = 9.165$, $p < .001$, and anxiety, $F(2,802) = 4.725$, $p < .01$. As indicated in Figure 3, PSD self-efficacy reached its maximum at 15.4 hours per week while anxiety reached its minimum at 6.6 hours per week. This showed that the optimal number of hours spent on non-academic activities could be quite different for the highest PSD self-efficacy and lowest anxiety. There might be a tradeoff in the optimal number of hours spent on non-academic activities for boosting PSE self-efficacy versus lowering anxiety.

Figure 3: PSD Self-efficacy and Anxiety Against Intensity



3. *Duration* — There was a significant quadratic trend against duration in PSD self-efficacy, $F(2,883) = 11.806$, $p < .001$, and psychological well-being, $F(2,791) = 6.305$, $p < .01$. As shown in Figure 4, PSD self-efficacy and psychological well-being reached its maximum at 12.8 and 15.0 years of participation respectively. However, there was a linear relationship of anxiety against duration, $F(1,803) = 7.333$, $p < .01$: students reported to have higher anxiety when they had more years of experience in non-academic activities.

Figure 4: PSD Self-efficacy and Psychological Well-being Against Duration



4. *Cost* — The average amount that students spent per month on non-academic activities was \$414.016 (SD = \$848.666, range = 0–7000). However, the range was quite large, with 266 students (32.7%) reporting that they did not spend on non-academic activities. The free-of-charge extracurricular activities offered by the school might account for this finding.

5. *Engagement and Role* — About 67.5% of students reported to involve in the planning and organizing of non-academic activities, whereas 64.2% of students reported to play a role in non-academic activities (e.g., chairman, secretary, and committee members). The proportions of engagement and role were very similar, suggesting that students got involved in an activity through taking up role from the team or group. In fact, this was a common practice of the students joining non-academic activities in schools in Hong Kong.

Effects of Level of Participation in Non-academic Activities

To examine the effects of level of participation in non-academic activities on students' psychological outcomes, we first classified students into non-participated group (those who reported zero in breadth, intensity, and duration) and participated group (those reported non-zero in at least one of the following three items: breadth, intensity, and duration). Given that breadth, intensity and duration were highly correlated, intensity that refers to the number of hours of participation per week was the most suitable variable because: (a) it could reflect more on the current situation of students' participation in non-academic activities than duration, which was more like the history of participation; and (b) it is possible that some of students with non-zero breadth might not always show up in their non-academic activities. Independent *t*-tests showed that compared with students reporting zero intensity, those reporting non-zero intensity showed higher PSD self-efficacy, 4.315 versus 4.019, $t(812) = 3.107$, $p < .01$; autonomy, 3.956 versus 3.669, $t(804) = 3.887$, $p < .001$; competence, 4.095 versus 3.737, $t(800) = 4.565$, $p < .001$; relatedness, 4.162 versus 3.888, $t(807) = 4.135$, $p < .001$; and autonomous motivation, 2.121 versus 1.038, $t(797) = 3.178$, $p < .01$.

Effect of Involvement (Role and Engagement) in Non-academic Activities

To test the effects of involvement in non-academic activities on students' psychological outcomes, we first labeled students, who reported to have participated in non-academic activities as engaged versus non-engaged (those responding yes vs. no in the engagement question), and as with role versus without role (those responding yes vs. no in the role question) (see Tables 1 and 2). Compared with students who did not take role in non-academic activities, those who took role showed higher PSD self-efficacy and

Table 1. Students With Role and Without Role in Non-academic Activities

	Role	*n*	Mean	*SD*	*t*
PSD self-efficacy	Yes	502	4.416	0.657	5.334***
	No	243	4.111	0.871	
Well-being	Yes	493	3.389	0.526	4.415***
	No	235	3.209	0.483	
Depression	Yes	497	1.783	0.694	−2.294*
	No	237	1.911	0.734	
Anxiety	Yes	498	1.765	0.648	−1.970*
	No	239	1.868	0.694	
Stress	Yes	497	1.977	0.670	−0.952
	No	239	2.029	0.742	
Autonomy	Yes	497	4.051	0.552	6.466***
	No	241	3.764	0.593	
Competent	Yes	498	4.203	0.600	6.941***
	No	236	3.874	0.599	
Relatedness	Yes	500	4.246	0.508	6.324***
	No	241	3.996	0.494	
Perceived autonomy support from instructors	Yes	500	4.383	0.670	4.360***
	No	240	4.149	0.712	
Relative Autonomous Motivation	Yes	493	2.487	2.677	5.383***
	No	241	1.387	2.434	

* $p < .05$ (2-tailed), ** $p < .01$ (2-tailed), *** $p < .001$ (2-tailed)

psychological well-being, more psychological needs satisfaction (autonomy, competence, and relatedness) and relative autonomous motivation, and less depression and anxiety. On the other hand, compared with students who did not engage in planning or organizing non-academic activities, those who reported to do those showed higher PSD self-efficacy and psychological well-being, better psychological needs satisfaction (autonomy, competence, and relatedness), autonomous motivation, as well as less depression.

SES

Relative to students with lower SES, those with higher SES reported spending more on non-academic activities. Independent *t*-test showed that high SES students spent more than low SES students ($503.954 vs. $308.858, $t(753) = 3.143$, $p < .001$), but they also reported less time spent on non-academic activities than low SES students (4.337 vs. 5.106 hours per week, $t(753) = 2.023$, $p < .05$). Chi-square test showed a significant relationship between SES and engagement of non-academic activities, $\chi^2(1, N = 754) = 5.093$, $p = .0024$. Low

Table 2: Students With Engagement and Without Engagement in Non-academic Activities

	Engaging	*n*	Mean	*SD*	*t*
PSD self-efficacy	Yes	528	4.393	.686	4.379***
	No	217	4.132	.851	
Well-being	Yes	518	3.378	.520	3.855***
	No	210	3.216	.501	
Depression	Yes	523	1.788	.705	−2.154*
	No	211	1.913	.715	
Anxiety	Yes	523	1.783	.669	−0.976
	No	214	1.836	.654	
Stress	Yes	524	1.990	.689	−0.262
	No	212	2.005	.707	
Autonomy	Yes	523	4.037	.555	5.969***
	No	215	3.763	.598	
Competent	Yes	526	4.184	.591	6.217***
	No	208	3.877	.634	
Relatedness	Yes	525	4.238	.501	6.215***
	No	216	3.985	.511	
Perceived autonomy support from instructors	Yes	527	4.371	.672	3.983***
	No	213	4.149	.718	
Relative Autonomous Motivation	Yes	519	2.456	2.679	5.336***
	No	215	1.330	2.402	

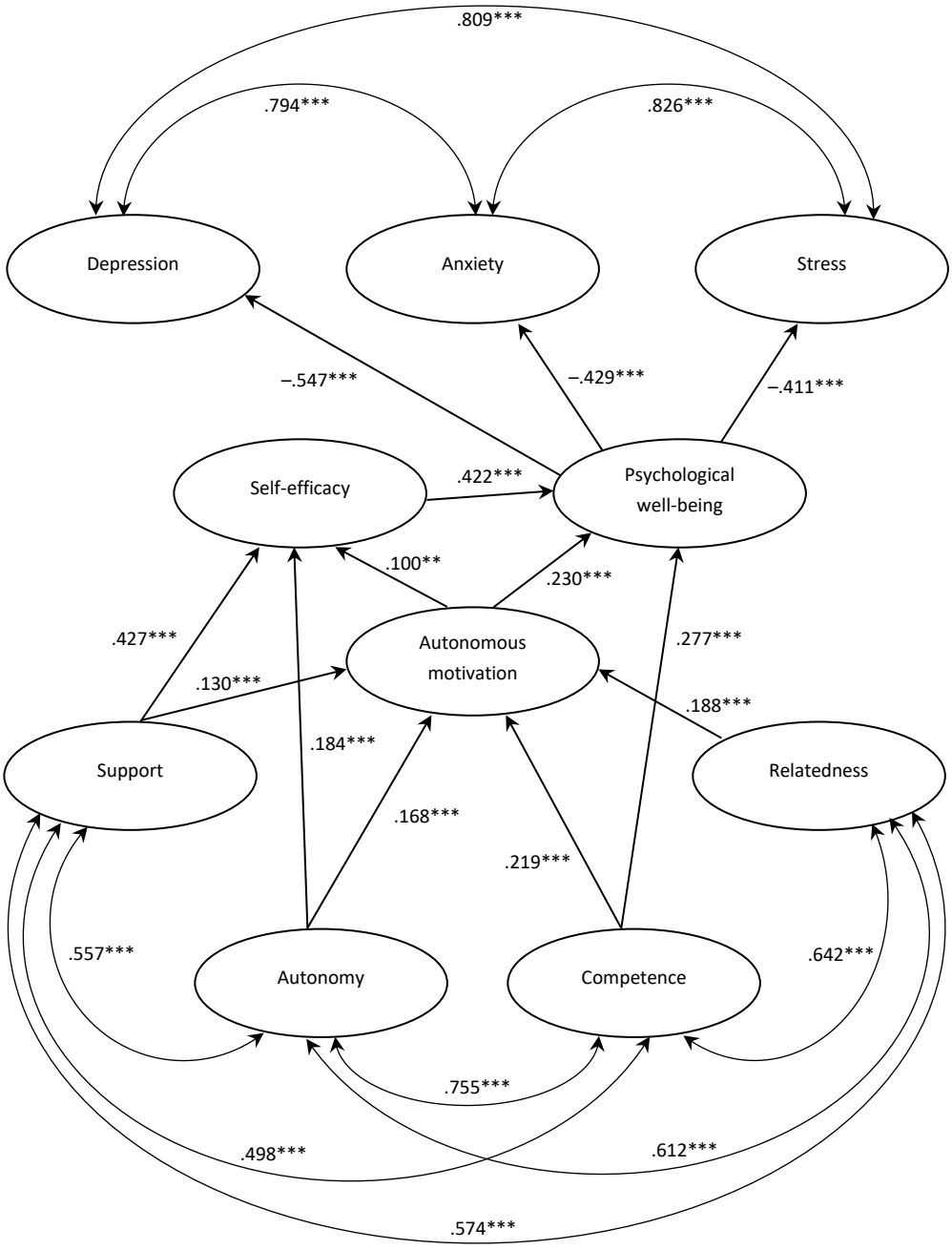
* $p < .05$ (2-tailed), ** $p < .01$ (2-tailed), *** $p < .001$ (2-tailed)

SES students involved more than high SES students in planning and organizing non-academic activities.

SEM Analysis

Data were analyzed using robust maximum likelihood analysis that yields more accurate standard errors when the data are not normally distributed (Byrne, 1994). Scaled chi-squared (Satorra & Bentler, 1988), Bentler-Bonett NFI (Bentler & Bonett, 1980), CFI (Bentler, 1990), RMR, and RMSEA were computed. To evaluate the adequacy of the fit of the proposed model (Figure 5) to the data, we followed Hu and Bentler (1999) that a good fitting model is indicated by values of >.95 in CFI and NFI, and <.08 and <.06 in RMR and RMSEA respectively. The fit indices showed a good fit to the data, Satorra-Bentler $\chi^2(23) = 59.336$, $p < .001$; CFI = .993; NFI = .989; RMR = .011; RMSEA = .044 (90% CI: .030–.058). Perceived autonomy support from instructors and psychological needs satisfaction (autonomy, competence, and relatedness) were positively associated with

Figure 5: Overall Structural Model of the Constructs of the Present Study



** $p < .01$ (2-tailed), *** $p < .001$ (2-tailed)

Note: Support = Perceived autonomy support from instructors.

autonomous motivation, which was also positively associated with PSD self-efficacy and psychological well-being. Perceived autonomy support from instructors and autonomy were also positively associated with PSD self-efficacy. Competence was positively associated with psychological well-being. PSD self-efficacy is positively associated with psychological well-being. Psychological well-being was negatively associated with depression, anxiety, and stress.

Tests for Hypothesized Mediation

We followed Baron and Kenny's (1986) procedures to test for mediation with cross-sectional research designs. The overall pattern remained unchanged when using PROCESS method (Hayes, 2013) to find the mediation effects. We conducted analyses to determine the total effects and the indirect effects on the five dependent measures in the model, namely PSD self-efficacy, psychological well-being, and depression, anxiety, and stress:

1. *PSD self-efficacy* — The total effects of competence ($\beta = .022$, $p < .05$) and relatedness ($\beta = .019$, $p < .05$) were significant, with all effects being indirect. Thus, autonomous motivation fully mediated the direct effects of competence and relatedness on PSD self-efficacy. Moreover, the total effects of autonomy ($\beta = .201$, $p < .001$) and perceived autonomy support from instructors ($\beta = .440$, $p < .001$) were significant, with most of the effects being direct. It suggested that autonomous motivation partially mediated the direct effects of autonomy and perceived autonomy support from instructors on PSD self-efficacy.
2. *Psychological well-being* — The total effect of autonomy ($\beta = .123$, $p < .01$), relatedness ($\beta = .051$, $p < .05$), and perceived autonomy support from instructors ($\beta = .216$, $p < .001$) on psychological well-being were significant, with all effects being indirect. Thus, autonomous motivation fully mediated the direct effects of perceived autonomy support from instructors, autonomy, and relatedness on psychological well-being. The total effect of competence ($\beta = .337$, $p < .001$) was also significant, with most of the effects being direct, so autonomous motivation partially mediated the direct effects of competence on psychological well-being.
3. *Depression, anxiety, and stress* — There were significant total effects of autonomous motivation on depression ($\beta = –.149$, $p < .01$), anxiety ($\beta = –.117$, $p < .01$) and stress ($\beta = –.112$, $p < .01$), with all effects being indirect. There were significant total effects

of PSD self-efficacy on depression (β = –.231, $p < .01$), anxiety (β = –.181, $p < .01$) and stress (β = –.174, $p < .01$), with all effects being indirect, so psychological well-being mediated the direct effects of autonomous motivation and PSD self-efficacy on depression, anxiety, and stress.

In summary, we found that: (a) autonomous motivation fully mediated the direct effects of competence and relatedness on PSD self-efficacy, and partially mediated the direct effect of autonomy and perceived autonomy support from instructors on PSD self-efficacy; (b) autonomous motivation fully mediated the direct effects of autonomy, relatedness, and perceived autonomy support from instructors on psychological well-being, and partially mediated the direct effect of competence on psychological well-being; and (c) psychological well-being fully mediated the direct effects of autonomous motivation and PSD self-efficacy on depression, anxiety, and stress.

Discussion

The purpose of the study was to investigate the relationships among secondary school students' self-efficacy, autonomous motivation, psychological needs satisfaction, and psychological well-being in the participation of non-academic activities in Hong Kong. We expected that basic needs satisfaction, self-efficacy, and autonomy support from instructors could predict students' psychological outcomes in non-academic activities participation. Moreover, autonomous motivation could mediate these relationships. In addition, we examined the factors (e.g., students' SES and level of involvement) that might affect the non-academic activities participation and their benefit on psychological outcomes.

Participant Against Non-participant

Echoing Mahoney, Harris, et al.'s (2006) suggestion on further research of the non-participants, the present study aimed at finding the difference in effect of participation against non-participation in non-academic activities on psychological outcomes. Consistent with our hypothesis 1, students with participation (intensity > 0) in non-academic activities were significantly higher in PSD self-efficacy than those without participation (intensity = 0). This showed that participating in non-academic activities was associated with better PSD self-efficacy. Students reported more satisfied with all three psychological needs (autonomy, competence, and relatedness) through participating in non-academic activities. Those with

participation showed higher in autonomous motivation than those without participation. This could be attributed to that students could have more opportunities to choose what they want in non-academic activities than their academic learning, such as they more likely experience autonomy, feel competent, and build relationship with friends, which could benefit their personal growth and psychological health (e.g., Youniss et al., 1999).

Threshold Effect and the Over-participation

In response to our hypothesis 2, there was a quadratic relationship between participation measurements (breadth, intensity, and duration) and PSD self-efficacy. This echoed with some researchers about the threshold effect of non-academic activities participation (Luthar et al., 2006). First, the effect of non-academic activities on PSD self-efficacy and psychological well-being attained a maximum as the number of non-academic activities (breadth) increased to about 18.3 and 21.5 respectively, and then there was diminishing effect on PSD self-efficacy and psychological well-being when the number of non-academic activities exceeded these thresholds. On the other hand, depression and anxiety attained a minimum at a threshold (about 17.4 and 16.1 respectively) of the number of non-academic activities. Second, there was a threshold effect in PSD self-efficacy associated with the number of hours of participation per week (intensity). When students participated more than 15.4 hours per week in non-academic activities, the effect of non-academic activities participation then became negative. These were consistent with Mahoney, Harris, et al.'s (2006) findings that adolescents reported lower self-esteem and more alcohol use when participating more than 20 hours of non-academic activities. On the other hand, students had minimal anxiety symptoms when number of hours of non-academic activities participation (intensity) reached 6.6 hours per week, although they reported to have more anxiety symptoms when they participated in even more hours of non-academic activities. Third, there was a diminishing return of PSD self-efficacy and psychological well-being right after 12.8 years and 15.0 years of participation. The effect of duration on PSD self-efficacy and psychological well-being were observed to attain a maximum from around 12.8 to 15.0 years of participation. It aligned with Farb and Matjasko's (2012) view that children might participate in too many non-academic activities at too early ages. Therefore, it not only had no positive effects on child, but also posed many negative emotional symptoms on child when they grow up.

Importance of Involvement (Role and Engagement)

Another important finding of the present study was about the way that students should participate in non-academic activities. Consistent with our hypothesis 3, students with role and engaged more in non-academic activities resulted in more positive effects in psychological outcomes (PSD self-efficacy and psychological well-being) and lower negative emotional symptoms (depression). It was consistent with the finding of Rose-Krasnor et al. (2006) that greater involvement in non-academic activities were associated with less risk behavior and positive psychological well-being. This finding has challenged the traditional arrangement of non-academic activities that all planning and decision-making processes were pre-determined by the teachers and social workers. Student who did not have a role in non-academic activities or were not engaged in non-academic activities (i.e., about one-third of our students) was associated with lower psychological outcomes. Similar findings were reported by Fung and Wong (1991), who suggested that students should be encouraged to take roles such as chairman, secretary, and treasurer in order to increase their participation and engagement and in turn be benefited more by non-academic activities participation.

A Comprehensive Model: Autonomous Motivation as the Mediator

To test our hypotheses 4 and 5, we conducted SEM analyses (Figure 5) and showed that psychological needs satisfaction and perceived autonomy support from instructors could predict PSD self-efficacy and psychological well-being although these relationships were fully mediated by autonomous motivation. This was aligned with SDT that if the fulfillment of psychological needs was accompanied with intrinsic motivation orientation (e.g., autonomous), people could achieve better psychological well-being (e.g., Deci & Ryan, 2000). Therefore, allowing students to have autonomy and letting them to feel ownership of their non-academic activities could enhance their autonomous motivation and in turn benefit their psychological functioning (see Standage et al., 2005, for a similar finding). This was shown in our study that students with a role or engagement in non-academic activities reported to have higher relative autonomous motivation than those without a role or engagement (see Tables 1 and 2). In the model, we also found that autonomous motivation was associated with lower depression, anxiety, and stress but these relationships were fully mediated by psychological well-being. Students with autonomous motivation enjoyed non-academic activities and living with clear goal and objective. They

could master the events and problems around them and build up intimate relationship with peers. Therefore, they are more satisfied with life and able to work toward what they really want. This could again be shown in our study that students with a role or engagement in non-academic activities reported to have higher autonomy, competence, and relatedness than those without a role or engagement (see Tables 1 and 2). According to Deci and Ryan (2000), this paves the way for better psychological well-being, and in turn, better coping with negative emotional symptoms like depression, anxiety, and stress. All these findings were aligned with the premise of SDT that autonomous motivation is an important mediating factor of promoting positive effects on PSD self-efficacy and psychological well-being of students through participating non-academic activities with psychological needs satisfaction and perceived autonomy support from instructors.

Does Resource Matter?

Regarding our hypothesis 6, relative to students with lower SES, those with higher SES reported to have spent more but engaged less on non-academic activities. Although average spending of high SES students ($503.954) was higher than that of low SES students ($308.858), there was no difference in their number of non-academic activities (breadth) and years of participation (duration). Also, high SES students did not demonstrate higher PSD self-efficacy or psychological well-being than low SES students, indicating that resource may not be the key for the positive effect of non-academic activities participation on students' personal growth and psychological well-being.

Conclusion and Suggestions

Since the present study is neither experimental nor longitudinal study, we could not infer the causality of the relationships among variables. However, the present study generally supported that participation in non-academic activities is associated with students' personal growth and well-being. We also found the threshold effect of participation in non-academic activities, which informed parents that appropriate time allocation for non-academic activities is associated the most with students' benefit, while too many non-academic activities may have negative, rather than positive, effects on their psychological outcomes, such as PSD self-efficacy. In SEM analyses, we found that autonomous motivation played a mediating role in the relationship between psychological needs satisfaction/autonomy support from instructors and psychological outcomes (PSD

self-efficacy, psychological well-being, and negative emotional symptoms). Students may internalize their motivation of participating in non-academic activities by setting goals for intrinsic aspirations such as affiliation, personal growth, and community that directly satisfy psychological needs (Ryan & Deci, 2000). They will probably enjoy the process of participating in non-academic activities and taking up the ownership of the activity regardless of gain and loss. In contrast, too much focus on external aspirations such as credit, reward, praise, and completion of project may not benefit their psychological development.

The current findings also suggested that students taking role or post in non-academic activities could be associated with the positive psychological outcomes of the participation. The involvement in non-academic activities increases the responsibilities of students in taking charge of the job assigned to them. Through division of works, students may gain experiences in different posts that equip them better in future tasks. Students are also more engaged in the activities because they feel that they are part of the team with recognition in their role. The participation in non-academic activities is more vivid and realistic once roles or posts are assigned to students, such that their psychological outcome could be benefited.

Finally, the study revealed that low SES students spent less on non-academic activities but engaged more and used more time in non-academic activities than high SES students. It is possible that low SES students may benefit by free-of-charge non-academic activities, suggesting that the government should allocate more resources for these free-of-charge activities, so as to benefit both low SES and high SES students' psychological outcomes.

Limitations and Future Research Directions

There are some limitations of the current study. First, to further test the causality of the relationships among variables in the current study, a longitudinal design should be used in future studies. Second, we did not include students' participation variables (breadth, intensity, and duration) in SEM analyses because they were quite imbalanced in their values. Future researchers could enlarge the sample size to have a more evenly distributed values in these students' participation variables (e.g., breadth, see Figure 2), so as to examine more specifically their roles in the relationships among secondary school students' self-efficacy, psychological needs satisfaction, and psychological well-being.

There are also some directions for future research. First, relative to secondary school students, who are more independent (especially those in senior form) and more able to choose their own non-academic activities, primary school students, whose non-academic

activities are more controlled by their parents and teachers, might show a different pattern of results. Hence, the replicability of the current findings should be verified with primary school students as a sample in future studies. To further verify the above potential parental constraint in the choices of non-academic activities, future research should include questions like: "In all non-academic activities that you have participated, in proportion (i.e., 100% in total) how many of them has been decided by yourself, your teacher, and your parents?"

Second, although we examined the role of students' SES on the positive effect of non-academic activities participation, the sample of our current study was drawn from secondary schools that serve lower- to upper-middle class families. Future research should test the generalizability of our findings in students with a wider range of SES.

Third, we directly applied the SDT framework, which was originally developed based on Western samples (Grolnick, Deci, et al., 1997; Vallerand, 1997). According to Bardi and Schwartz (1996), there is a difference in cultural attitude toward autonomy. There have been relatively few studies in SDT conducted in more authoritarian culture (Chirkov & Ryan, 2001). Hence, it is important to conduct a cross-cultural study (e.g., in Hong Kong and the U.S.) and test whether the same pattern of results (e.g., mediating role of autonomous motivation) could be found across culture.

Finally, the current study could be extended to take into account the types of non-academic activities (e.g., sports and aesthetic activities) and instructor's styles (instructor directed vs. student-directed). Some types of non-academic activities are in group work (e.g., basketball and social service) while others are more individual-based (e.g., solo-play music instruments and art works). Further investigation about different types of non-academic activities will gain insights on the engagement and role-taking of non-academic activities. For instructor's styles, an over-dominating instructor-directed style might undermine students' autonomy and hinder their engagement and involvement in planning and organizing non-academic activities. On the other hand, a student-led approach may enhance student engagement. The potential effect of non-academic activities participation on academic performance (see, Kusurkar et al., 2013, for an example) and how that could associate with students' study path and future career choices should be explored (e.g., in a longitudinal study). How to strike a balance between academic and non-academic activities in order to achieve optimal benefits on students' psychological outcomes is also an interesting direction of future research.

References

Bardi, A., & Schwartz, S. H. (1996). Relations among sociopolitical values in Eastern Europe: Effects of the communist experience? *Political Psychology*, *17*(3), 525–549. https://doi.org/10.2307/3791967

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*(6), 1173–1182.

Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, *107*(2), 238–246.

Bentler, P. M., & Bonett, D. G. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin*, *88*(3), 588–600. https://doi.org/10.1037/0033-2909.88.3.588

Byrne, B. M. (1994). *Structural equation modeling with EQS and EQS/Windows: Basic concepts, applications, and programming*. Sage.

Chirkov, V. I., & Ryan, R. M. (2001). Parent and teacher autonomy-support in Russian and U.S. adolescents: Common effects on well-being and academic motivation. *Journal of Cross-cultural Psychology*, *32*(5), 618–635. https://doi.org/10.1177/0022022101032005006

Curriculum Development Council. (2009). *Senior secondary curriculum guide — The future is now: From vision to realization (Secondary 4–6)*. https://cd1.edb.hkedcity.net/cd/cns/sscg_web/html/english/index.html

Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, *11*(4), 227–268. https://doi.org/10.1207/S15327965PLI1104_01

Farb, A. F., & Matjasko, J. L. (2012). Recent advances in research on school-based extracurricular activities and adolescent development. *Developmental Review*, *32*(1), 1–48. https://doi.org/10.1016/j.dr.2011.10.001

Fredricks, J. A., & Eccles, J. S. (2008). Participation in extracurricular activities in the middle school years: Are there developmental benefits for African American and European American youth? *Journal of Youth and Adolescence*, *37*(9), 1029–1043. https://doi.org/10.1007/s10964-008-9309-4

Fung, Y. W., & Wong, N. Y. (1991). Involvement in extracurricular activities as related to academic performance, personality, and peer acceptance. *Education Journal*, *19*(2), 155–160.

Grolnick, W. S., Deci, E. L., & Ryan, R. M. (1997). Internalization within the family: The self-determination theory perspective. In J. E. Grusec & L. Kuczynski (Ed.), *Parenting and children's internalization values: A handbook of contemporary theory* (pp. 135–161). John Wiley & Sons.

Grolnick, W. S., Farkas, M. S., Sohmer, R., Michaels, S., & Valsiner, J. (2007). Facilitating motivation in young adolescents: Effects of an after-school program. *Journal of Applied Developmental Psychology*, *28*(4), 332–344. https://doi.org/10.1016/j.appdev.2007.04.004

Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. The Guilford Press.

Holland, A., & Andre, T. (1987). Participation in extracurricular activities in secondary school: What is known, what needs to be known? *Review of Educational Research*, *57*(4), 437–466. https://doi.org/10.3102/00346543057004437

Hu, L. T., & Bentler, P. M. (1999). Cut-off criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*(1), 1–55. https://doi.org/10.1080/10705519909540118

Jang, H., Reeve, J., & Deci, E. L. (2010). Engaging students in learning activities: It is not autonomy support or structure but autonomy support and structure. *Journal of Educational Psychology*, *102*(3), 588–600. https://doi.org/10.1037/a0019682

Kusurkar, R. A., Ten Cate, T. J., Vos, C. M. P., Westers, P., & Croiset, G. (2013). How motivation affects academic performance: A structural equation modelling analysis. *Advances in Health Sciences Education*, *18*(1), 57–69. https://doi.org/10.1007/s10459-012-9354-3

La Guardia, J. G., Ryan, R. M., Couchman, C. E., & Deci, E. L. (2000). Within-person variation in security of attachment: A self-determination theory perspective on attachment, need fulfillment, and well-being. *Journal of Personality and Social Psychology*, *79*(3), 367–384. https://doi.org/10.1037/0022-3514.79.3.367

Levesque-Bristol, C., & Stanek, L. R. (2009). Examining self-determination in a service learning course. *Teaching of Psychology*, *36*(4), 262–266. https://doi.org/10.1080/00986280903175707

Linver, M. R., Roth, J. L., & Brooks-Gunn, J. (2009). Patterns of adolescents' participation in organized activities: Are sports best when combined with other activities? *Developmental Psychology*, *45*(2), 354–367. https://doi.org/10.1037/a0014133

Luthar, S. S., Shoum, K. A., & Brown, P. J. (2006). Extracurricular involvement among affluent youth: A scapegoat for "ubiquitous achievement pressures"? *Developmental Psychology*, *42*(3), 583–597. https://doi.org/10.1037/0012-1649.42.3.583

Mahoney, J. L., Harris, A. L., & Eccles, J. S. (2006). Organized activity participation, positive youth development, and the over-scheduling hypothesis. *Social Policy Report*, *20*(4), 1–31. https://doi.org/10.1002/j.2379-3988.2006.tb00049.x

Mahoney, J. L., Schweder, A. E., & Stattin, H. (2002). Structured after-school activities as a moderator of depressed mood for adolescents with detached relations to their parents. *Journal of Community Psychology*, *30*(1), 69–86. https://doi.org/10.1002/jcop.1051

Marsh, H. W., & Kleitman, S. (2002). The effects of participation in sport during the last two years of high school. *Sociology of Sport Journal*, *10*(1), 18–43. https://doi.org/10.1123/ssj.10.1.18

Morrissey, K. M., & Werner-Wilson, R. J. (2005). The relationship between out-of-school activities and positive youth development: An investigation of the influences of communities and family. *Adolescence*, *40*(157), 67–85.

Moussa, M. T., Lovibond, P. F., & Laube, R. (2001). *Psychometric properties of a Chinese version of the 21-item Depression Anxiety Stress Scales (DASS21)*. http://www2.psy.unsw.edu.au/dass/Chinese/Chinese%20DASS21%20Paper.pdf

Norton, P. J. (2007). Depression Anxiety and Stress Scales (DASS-21): Psychometric analysis across four racial groups. *Anxiety, Stress, and Coping*, *20*(3), 253–265. https://doi.org/10.1080/10615800701309279.

Reeve, J. (2009). Why teachers adopt a controlling motivating style toward students and how they can become more autonomy supportive. *Educational Psychologist*, *44*(3), 159–175. https://doi.org/10.1080/00461520903028990

Reeve, J., Jang, H., Carrell, D., Jeon, S., & Barch, J. (2004). Enhancing students' engagement by increasing teachers' autonomy support. *Motivation and Emotion*, *28*(2), 147–169. https://doi.org/10.1023/B:MOEM.0000032312.95499.6f

Rose-Krasnor, L., Busseri, M. A., Willoughby, T., & Chalmers, H. (2006). Breadth and intensity of youth activity involvement as contexts for positive development. *Journal of Youth and Adolescence*, *35*(3), 385–399. https://doi.org/10.1007/s10964-006-9037-6

Ryan, R. M., & Connell, J. P. (1989). Perceived locus of causality and internalization: Examining reasons for acting in two domains. *Journal of Personality and Social Psychology*, *57*(5), 749–761. https://doi.org/10.1037/0022-3514.57.5.749

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, *55*(1), 68–78. https://doi.org/10.1037/0003-066X.55.1.68

Ryan, R. M., & Deci, E. L. (2008). From ego depletion to vitality: Theory and findings concerning the facilitation of energy available to the self. *Social and Personality Psychology Compass*, *2*(2), 702–717. https://doi.org/10.1111/j.1751-9004.2008.00098.x

Ryff, C. D., & Singer, B. (1996). Psychological well-being: Meaning, measurement, and implications for psychotherapy research. *Psychotherapy and Psychosomatics*, *65*(1), 14–23. https://doi.org/10.1159/000289026.

Satorra, A., & Bentler, P. M. (1988). *Scaling corrections for statistics in covariance structure analysis* (UCLA Statistics Series 2). University of California.

Shi, Z. Y. (1996). 課外活動與課堂教學關係的傳統與變革 [The tradition and revolution of the relationship between extra-curriculum activities and the teaching in classroom]. *Education Research*, *2*, 58–62.

Standage, M., Duda, J. L., & Ntoumanis, N. (2005). A test of self-determination theory in school physical education. *British Journal of Educational Psychology*, *75*(3), 411–433. https://doi.org/10.1348/000709904X22359

Vallerand, R. J. (1997). Toward a hierarchical model of intrinsic and extrinsic motivation. *Advances in Experimental Social Psychology*, *29*, 271–360. https://doi.org/10.1016/S0065-2601(08)60019-2

Vansteenkiste, M., Zhou, M., Lens, W., & Soenens, B. (2005). Experiences of autonomy and control among Chinese learners: Vitalizing or immobilizing? *Journal of Educational Psychology*, *97*(3), 468–483. https://doi.org/10.1037/0022-0663.97.3.468

Williams, G. C., Wiener, M. W., Markakis, K. M., Reeve, J., & Deci, E. L. (1994). Medical students' motivation for internal medicine. *Journal of General Internal Medicine*, *9*(6), 327–333. https://doi.org/10.1007/BF02599180

Youniss, J., McLellan, J. A., Su, Y., & Yates, M. (1999). The role of community service in identity development: Normative, unconventional, and deviant orientations. *Journal of Adolescent Research*, *14*(2), 248–261. https://doi.org/10.1177/0743558499142

Yuen, M. T., Gysbers, N. C., Hui, E. K. P., Lau, P. S. Y., Chan, R. M. C., Shea, P. M. K., Leung, T. K. M., & Ke, S. S. Y. (2004). *Personal-Social Development Self-Efficacy Inventory: User manual*. The University of Hong Kong.

香港中學生參與非學術性活動時個人社交發展自我效能感、自主動機、心理需求滿足與心理幸福感的關係

鄭禮林、謝志成

摘 要

根據自我決定理論，有自主動機取向的人擁有更好的心理幸福感。本研究透過充分驗證的問卷，調查了 814 名香港 10–11 年級中學生參與非學術性活動與他們的心理需求、個人社交發展自我效能感和負面情緒症狀（如抑鬱、焦慮、壓力）等相關的因素。結果顯示，在非學術性活動中有較高參與度的學生（如扮演更重要角色和更投入）表現出更高的自我效能感、心理幸福感、心理需求滿足和自主動機，但較少負面情緒症狀。然而，研究亦發現，參加過多的非學術性活動可能會削弱自我效能感和心理幸福感，並引發負面情緒症狀。結構方程模型分析顯示，當學生對心理需求更滿意和從教師那裏獲得更多自主支持時，他們會表現出更高的自我效能感和心理幸福感，以及更低的抑鬱、焦慮和壓力，而這些關係進一步受到自主動機調節。雖然與社會經濟地位較低的學生相比，社會經濟地位較高的學生在非學術性活動上的花費較多，但他們參與的投入度和時間較少。而且，在自我效能感、心理幸福感和負面情緒症狀方面，研究並未發現兩個社會經濟地位群體之間有顯著差異。因此，學生如何參與非學術性活動，比起他們在這些活動當中花費了多少更為重要。本文還會討論不同持份者在非學術性活動中的角色和有效做法。

關鍵詞：非學術性活動；心理幸福感；個人社交發展自我效能感

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