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The Role of Optimism, Self-esteem, Academic Self-efficacy and Gender in High-Ability Students

Introduction

Personal talent is defined as exceptional ability to select and attain difficult life goals that fit one's interests, abilities, values, and social contexts (Moon, 2001). Essentially personal talent is the developed expertise in self-understanding, decision making, and self-regulation. The individual with personal talent understands his or her strengths and weaknesses; makes good decisions; has clear, high level goals for his or her life and is successful in achieving those goals even when faced with setbacks along the way. People with personal talent experience high levels of life satisfaction and well-being, and they are self-actualizing.

In order to maximize their potential, self-actualize and build satisfying lives, gifted and high-ability students need personal talent. These high-ability individuals have multiple talents and so may need sophisticated skills in managing competing priorities and goals, an aspect of personal talent. According to Moon (2003), personal talent knowledge and skills can be learned and facilitate many positive life outcomes. Knowledge derived from psychological research programs which investigated dispositions such as optimism (Buchanan & Seligman, 1995; Peterson, C., 2000; Scheier & Carver, 1992; Seligman, 1995) and self-efficacy (Bandura, 1997) can facilitate the development of personal talents. Such disposition plays an important role in building personal talents skills needed for well-being outcomes which eventually will lead to happiness and life satisfaction.

Not only should cognitive and intellectual development be emphasized for the high-ability students, due consideration should also be given to the social-emotional needs of gifted and highly able students (Silverman, 1990). As intensity, sensitivity and overexcitability are primary characteristics of the highly gifted (Lind, 2000; Piechowski, 1999; Silverman, 1993, 2008), stressors arising from life events may bring about heightened sensitivity and internal responsiveness, leading to intensity in emotions, behaviours and reactions to the ordinary problems of growing up (Silverman, 1983; Whitmore, 1980), making the high-ability students vulnerable to a variety of adjustment difficulties (Roedell, 1984).

There is, however, a paucity of research about the role of psychological dispositions in high-achieving youth and gifted learners on academic stressors, with only a few investigations considering the unique coping responses of these populations of students (Preuss & Dubow, 2004; Suldo, Shaunessy, Michalowski, & Shaffer, 2008). Studying a sub-set of these older intellectually gifted high school students in the Singapore context can provide much-needed information about the role of psychological dispositions on these learners' stress perceptions and the ways they cope with academic stress.

Optimism

Optimism has been well-documented as a construct that represents a robust, trait-like psychological factor (see Lai, 1995; Lipkus, Martz, Panter, Drigotas & Feaganes, 1993; Scheier & Carver, 1985; Scheier, Carver & Bridges, 1994). Optimism reflects an individual's expectation of a positive outcome in most situations (Scheier & Carver, 1985). Scheier and Carver (1992) further defined a personality variable known as dispositional optimism: the global expectation that good things will be plentiful in the future and bad things, scarce. It refers to the extent to which individuals expect a good outcome to occur rather than a bad outcome. Dispositional optimism is a tendency of an individual to hold generalized positive expectancies even "when people confront adversity or difficulty in their lives" (Scheier, Carver & Bridges, 2000, p. 191). These generalized expectancies are applicable to the entire life domain of the individuals. Thus dispositional optimism is the belief that one will tend to experience good outcomes in life.

Optimism can be measured by asking individuals to indicate the extent to which they believe their future outcomes will be good or bad. For the optimist, there is an expectancy that good outcomes will occur even when one is confronted with major obstacles (Scheier & Carver, 1985). Optimists are people who tend to hold positive expectancies for their future, while pessimists are people who tend to hold more negative expectations for the future.

Optimal development in children and adolescents requires shaping and maintaining an optimistic style of interpreting the experiences of success and failure. Emotional health, social competence, and high achievement in students can be promoted through teaching them how to think positively about day-to-day events in their lives (Seligman, 1998). Meanings they give to situations that go well or that do not go well, and how they think about the causes of positive and negative events in their lives, will go far in

determining how optimistic and positive they are of their future. Optimism influences how people perceive events in their lives which in turn affect their subjective experiences when confronting problems. It also influences the actions people employ in dealing with these problems. Both optimists and pessimists differ in how they approach the problems and challenges, and the manner in which they handled adversity in lives (Carver & Scheier, 2002).

Benefits of Optimism in Academic Setting

There is a huge and growing body of evidence which demonstrates that expectancies about the future impact well-being in the present, in physical health, psychological well-being, stressful situations and events in life such as college transition and examinations (Andersson, 1996). In terms of physiological benefits of optimism, research has found that there was less physical symptomology among undergraduates during the stressful final weeks of a semester (Scheier and Carver, 1985). Moreover, optimistic first year law students tended to display better mood and a more robust immune system than their pessimistic counterparts (Seegerstrom, Taylor, Kemeny, and Fahey, 1998).

Optimism has also been identified as a valuable psychological and emotional resource that is associated with enhanced mental health (Seligman, 1998). It has been linked to desirable outcomes such as good morale, achievement orientation and improved health (Chemers, Watson, & May, 2000; Peterson, 2000; Taylor, Kemeny, Bower, Gruenewald, & Reed, 2000). There is also empirical evidence to support the argument that positive emotions associated with optimism actually broaden intellectual, physical and social resources (Frederikson, 1998). This supports the notion that optimism helps individuals to persist in the face of failure (Seligman, 1995).

In addition, optimism brings about constructive behaviours and positive attitudes. Studies have shown that optimistic disposition is a strong predictor of successful adaptation to stressful encounters and is also related to positive adjustment (Ben-Zur, Rappaport, Ammar, & Uretzky, 2000; Herman-Stahl & Peterson, 1996). Optimism is inversely related to dispositional and state anxiety, and positively related to expected performance and self-efficacy, for example, in its positive impact on performance and adjustment in the first year of college, where optimistic students are most likely to hold higher expectations partly because they trusted in their own capabilities and viewed their environment as less threatening, and they tended to perceive their worlds in ways that were more likely to result in successful

adjustment (Chemers, Hu, & Garcia, 2001). In particular, dispositional optimism is found to be positively related to active and effective coping with stress (Scheier, Weintraub, & Carver, 1986). It is also linked to flexible adaptive coping styles that include planning and active, problem-focused coping strategies (Carver, Scheier & Weintraub, 1989; Scheier & Carver, 1992). For example, optimists are able to diminish problems through positive reframing or reinterpretation and by seeking emotional support from peers, parents or teachers (Billingsley, Waehler & Hardin, 1993). In their control-process model of anxiety, Carver and Scheier (1988) suggested that people with favourable expectancies for outcomes persist with task demands, while unfavourable expectancies are associated with the impulse to disengage from the task.

Optimism and Academic Expectation Stress

Across various events and situations, dispositional optimism is found to be associated with better psychological adjustment to stress factors, ranging from normal events like entering college to extremely traumatic events such as working at the site of an airplane crash (Aspinwall & Taylor, 1992; Dougall, Hyman, Hayward, McFeeley, & Baum, 2001). According to Peterson (2000), individuals who are optimistic experienced less distress when dealing with difficulty or crises in their lives than those who are pessimistic. Specifically in school, optimistic students were found to adjust better and cope better with school-related stress than students who were pessimistic (Aspinwall & Taylor, 1992). College students who rated themselves high on optimism reported less stress, depression, and loneliness. Pessimistic college students, on the other hand, were more stressed, depressed and lonely (Scheier & Carver, 1992).

Optimism has been found to be predictive of perceived stress. Two studies examined the role of optimism in African-American students' perception of stress. Baldwin, Chambliss, & Towler (2003) and Ben-Zur (2003) found that students' perception of stress was influenced by their level of optimism. Optimism was found to be negatively correlated to levels of perceived stress. Moreover, optimism buffered the effects of stress. Students who were more optimistic about their future tended to report less perceived stress than did their pessimistic counterparts. Similarly, Huan, Lee, Ang, and Wan (2006) on 430 secondary school students (13 to 16 years of age) in Singapore, dispositional optimism was found to be a significant predictor of overall academic stress, academic stress that arose from self- and other-expectations. Moreover, gender was not a predictor of academic stress, overall, self or other. This

indicated that adolescents who are optimistic tended to report less academic stress while pessimistic adolescents reported greater academic stress. In addition, in their longitudinal study of first-year university students, Chemers, Hu, and Garcia (2001) examined the effects of optimism on students' academic stress and found a strong negative association between optimism and perception of academic stress. In short, there is enough evidence to show that dispositional optimism and pessimism are significant correlates of psychological well-being.

While school issues are generally a concern felt among adolescents around the world, for Asian societies (e.g. Korea, Hong Kong, and Singapore), the pressure to perform in school is even more acute (Friedman, 1991; Isralowitz & Ong, 1990; Stark, Spirito, Williams, & Guevremont, 1989). A number of studies on Singapore students revealed that the adolescents face a highly stressful and competitive educational environment. In a national survey of Singaporean youth, it was found that majority of the 1500 adolescents ranked education to be the most stressful aspect of their lives (Ho & Yip, 2003). Academic stress comes from various sources. It was found that Singapore adolescents experienced stress arising from both their own expectations to excel in school as well as those of their parents and teachers (Ang and Huan, 2006). Schoolwork pressure was reflected in the stress felt by the students (Ho & Yip, 2003; Isralowitz & Ong, 1990). "Being pressured to keep up with schoolwork" was ranked a major concern for some 220 Singapore school students (Isralowitz & Ong, 1990). Furthermore, Singaporean youths also ranked examination grades to be most important, but indicated being the least satisfied with it (Ho & Yip, 2003). This finding suggests that while examination grades are considered to be highly important, these adolescents felt that they could not attain standards that were perceived to be satisfactory. In general, studies on these adolescents indicated a close association between negative consequences such as excessive stress and the emphasis on academic excellence (Shek, 1995).

Optimism and Self-esteem

Optimism and self-esteem are both psychological attributes which have positive impact on well-being of individuals. Rosenberg's (1965) definition, most cited in the literature, described self-esteem as a "favorable or unfavorable attitude toward the self" (p. 15). Self-esteem can be defined as a generalized positive-negative attitude, thinking and feeling, toward himself or herself. Self-esteem reflects a person's overall self-appraisal of his or her own worth (Blascovich & Tomaka, 1991). Self-esteem encompasses

both beliefs (e.g., "I am competent/incompetent") and emotions (e.g., triumph/despair, pride/shame), which in turn reflect self-esteem behaviourally (e.g., in assertiveness/ timorousness, confidence/caution).

Studies have shown that individuals with low self-esteem reported more physical health problems. Leitschuh and Rawlins (1991) found that high self-regard scores and high self-actualizing scores predicted better physical health. Pritchard et al. (2007) found that a relationship between self-esteem and negative moods, with individuals possessing lower levels of self-esteem reporting more negative moods. According to Scheier et al. (1994), self-esteem has an element of the feelings of worth or the self's value which tie intrinsically with positive expectancies and outcomes found in optimism, thus linking self-esteem conceptually to optimism. Hence having a high self-esteem and being optimistic may serve as buffers to health and mental problems, especially in a competitive, challenging, but often stressful learning environment.

Optimism and Academic Self-efficacy

Self-efficacy, a term associated with the work of Bandura, refers to an individual's sense of competence or ability in general or in particular domains. Self-efficacy refers to being able to picture what it is he or she wants to achieve at the level he or she wants to achieve. Bandura (1982, 1986 & 1989) differentiated between expectancies of self-efficacy (one's belief in one's ability to perform a specific behaviour) and expectancies of outcome (one's belief that a specific behaviour will produce a desired outcome). Bandura has characterized expectancies of efficacy, or self-efficacy, as a stronger predictor of behaviour than outcome expectancies.

According to Bandura (1997), self-efficacy refers to people's convictions about their own capabilities for successfully executing a course of action that leads to a desired outcome. In a similar vein, perceived academic self-efficacy refers to a student's beliefs about his or her ability to successfully complete academic tasks such as preparing for exams and writing term papers (Zimmerman, 1995). Strong associations between resiliency and an individual's self-efficacy and self-esteem are well-documented (Baldwin et al., 1993; Brooks, 1994; Rutter, 1987; Werner, 1997; Wright & Masten, 1997; Wolff, 1995). Academic self-efficacy has been found to be a significant predictor of academic resilience, and its development involves restructuring learning to maximize opportunities for success, for example, through individualizing tasks where possible (Schunk & Miller, 2002), addressing and enhancing students'

(negative) beliefs about themselves and their academic capacities (Bandura, 1997), and developing skills in effective goal setting (Locke & Latham, 2002) that are likely to lead to success and which provide a basis for enhancement of one's self-efficacy.

Siddique et al. (2006) reported that optimism was positively associated with self-efficacy, such that the higher the level of general optimism endorsed, the higher the level of self-efficacy for taking examinations among the first year law undergraduates. This finding suggests it may be relevant to investigate similar relationships between dispositional optimism and academic self-efficacy amongst high-ability adolescents, who are striving for peak performance.

Objectives

Positive psychological traits have some grounds in optimism. Studies have shown that dispositional optimism associates positively with self-esteem and self-efficacy (e.g. in El-Anzi, 2005; Scheier et al., 1994; Siddique et al., 2006). Optimism is also associated with stress experienced by individuals. There is a high correlation between optimism and stress tolerance, suggesting that optimism may be a significant factor in the ability to cope with stress (Bar-On, 2000). However, not only is there a dearth of research on the relationship between optimism and academic expectation stress with high school sample, few studies have explored group differences (Ben-Zur, 2003; Chang, 1996; Chang & Sanna, 2003). Although there was ample empirical evidence that showed the role of optimistic disposition in predicting successful adjustment to stressful situations in life (Ben-Zur, Rappaport, Ammar, & Uretzky, 2000; Herman-Stahl & Peterson, 1996), few studies have taken self-esteem and academic self-efficacy as psychological resources into consideration in predicting academic expectations stress among high-ability students. The relationships between dispositional optimism and these psychological traits for high-ability students in Singapore have not been rigorously addressed in previous study. These psychological traits may be related, and the degree in which they are associated in this group of students is of interest to be examined, so as to investigate if any similarities or differences exist between the high-ability and the average regular adolescents. This current study aims to contribute to the existing literature in understanding how these positive traits associate with psychological outcomes like perceived academic stress amongst high-ability adolescents.

The literature also illustrates mixed findings on self-esteem and optimism in relation to gender. Some researchers have identified that self-esteem and optimism are higher in adolescent males (Birndorf et al., 2005; Puskar et al., 1999; Sung et al., 2006), while others reported no difference dependent on the level of development when initially assessed (Heinonen et al., 2005). The literature also revealed that male students perceived the collaborative learning context more positively than the female students, and thus were also more self-efficacious (Opare, 2008). This study strives to better understand the psychological well-being and development of high-ability students through a comparison of gender differences in optimism, self-esteem, academic self-efficacy and academic stress perception amongst these adolescents. It will be of interest to compare these psychological variables between genders for the high-ability adolescents.

Although literature gave mixed reviews on how stress affects the gifted and talented students, and that high-ability learners, as a group, may have lower or no significant difference in anxiety level as compared to the average-ability learners (Neihart, 1991), gifted teens rated pressure to perform as stressful (Metha & McWhirter, 1997). The learning environment of high-ability students is often competitive. Although they tend to endorse competitive learning styles, these students may vary, from one to the other, in how they view competition (Udvari & Schneider, 2000), and the demand to perform both academically and in non-academic activities can in itself be a stressful experience. Furthermore, an increase in academic expectations may increase school-related stress, contribute to difficulty with rejection and failure (Kaplan, Liu, & Kaplan, 2005), and lead to avoidance of academic studies such as the Advanced Placement (AP) courses (Dai, 2000). Specifically, in an Asian context, given the familial and cultural demands for academic excellence, academic stress arising from adolescents' self-expectations and expectations of others (e.g., parents and teachers) are particularly salient. Academic achievement is highly valued by Asians because it is perceived as one of the few avenues for upward mobility and expanded options, thus the significance that individuals and families attribute to academic success is intensified (Gloria & Ho, 2003; Sue & Okazaki, 1990). Not meeting one's own expectations and that of significant others is a serious matter which could potentially result in loss of face which in turn leads to loss of confidence and support from one's family (Yeh & Huang, 1996). Therefore, children are socialized from young to be hypersensitive to the judgment of others, especially significant others such as parents or teachers. Since optimism has a role in academic setting (Chemers, Watson, & May, 2000;

Peterson, 2000; Taylor, Kemeny, Bower, Gruenewald, & Reed, 2000), and stress related to academic expectations is found to be salient in the Asian context, current study attempts to extend the research and understanding of the influence and role of optimism, together with self-esteem and academic self-efficacy, in academic stress as experienced by adolescents from the perspective of high-ability learners.

In view of this, three research foci were mapped out in this study. First, the study aims to examine the associations of optimism, self-esteem, academic self-efficacy, and academic stress perception among high-ability adolescents. Second, the study aims to investigate gender differences in dispositional optimism, self-esteem, academic self-efficacy and academic stress perception. Third, this research explores the contributions of gender and these psychological variables make in predicting academic stress perception.

The purpose of this study can be crystallized into the following three research questions:

1. What are the correlations between dispositional optimism, self-esteem, academic self-efficacy and academic stress perceptions, in high-ability adolescents?
2. Are there any gender differences, in terms of optimism, academic stress, and other positive traits such as self-esteem and academic self-efficacy, amongst the high-ability learners in the senior high school?
3. What is the influence of dispositional optimism, self-esteem, academic self-efficacy and gender, on the perception of academic stress in high-ability students?

Method

Participants

The participants in this study were 298 Grade 12 students from a senior high school which caters to the high-ability students in Singapore. Students are selected for Singapore's premier high schools through the ¹Direct School Admission (DSA) programme on the basis of their performance in selection test, which consists of a general ability test, as well as their performance on a Grade 6 high-stake national examination, the Primary School Leaving Examination (PSLE), which all Grade 6 students complete. The students participating in this study are amongst the nation's top 3% of their cohort based on achievement in PSLE. The sample was made up of mainly students of the Chinese ethnicity (90%), with the remaining 10% of other ethnic origins. The gender distribution of the sample was 48% male (n=143) and 52% female (n=155). The mean age of the participants was 17.8 years.

Procedures

Permission to conduct the paper-pencil survey during curriculum hours was granted by the Principal. Participation in the study was absolutely voluntary through the signing of an assent form. Thirteen tutors were recruited and briefed on the nature of the study and administrative protocol. Participants were given 50 minutes to complete the survey. Data for this study were collected over a period of three weeks. As curriculum time was negotiated to complete the survey, the response rate was approximately 99%.

Measures

The research instrument used in this study is a self-report questionnaire which was constructed by combining existing instruments available in the literature. All of the items on the survey were rated on a 6-point Likert scale, with 1 being strongly disagree and 6 being strongly agree.

Measure of Dispositional Optimism. The Revised Life Orientation Test (LOT-R; Scheier, Carver, & Bridges, 1994) is a revision of the Life Orientation Test (LOT) originally developed by Scheier and Carver (1985). The LOT-R was used to measure the level of dispositional optimism in the

¹ Direct School Admission (DSA) is an admission exercise to allow participating schools to select Grade 6/Primary 6 students for admission to Grade 7/Secondary 1 based on their achievements and talents before the PSLE results are released. Majority of the DSA students admitted to the premiere high school are from the Gifted Education Programme (GEP). They must clear the General Ability Test before being admitted directly to the school.

participants in this study. It was designed to measure generalized outcome expectancies, with higher scores indicating a more optimistic overall outlook on life (Scheier & Carver, 1985). The 10-item LOT-R consists of three items assessing optimism, which are worded positively (e.g., "I'm always optimistic about my future"), and three reverse-scored items that measure pessimism, which are worded negatively (e.g., "If something can go wrong for me, it will."), as well as four filler items that disguise the underlying purpose of the test. Positive expectations are usually combined with (reverse-scored) negative expectations, and the resulting measure is investigated with respect to academic stress perception, resilience, and other variables. The LOT-R used in this study measures optimism unidimensionally. Scheier et al. (1994) reported an internal consistency reliability of .78 and a 28-month test/retest reliability of .79 for the LOT-R. The alpha coefficient of the LOT-R was 0.74.

Measure of Self-esteem. Rosenberg's 5-item Self-esteem scale (Rosenberg, 1965) was used in the study. The scale generally has high reliability; test-retest correlations are typically in the range of .82 to .88, and the Cronbach's alpha for various samples are in the range of .77 to .88 (Blascovich & Tomaka, 1991). The instrument seeks to reflect the person's general experience about his/her abilities and evaluation of his/her personal characteristics. Sample items in the measure include: "*On the whole, I am satisfied with myself*", and "*I feel I am a person of worth, at least on an equal standing with others*". The scale has an alpha coefficient of .89.

Measure of Academic Self-efficacy. The measure was adapted and modified from the 5-item Academic Self-Efficacy scale in the Manual for the Patterns of Adaptive Learning Scales (PALS) (Midgley et al., 2000). The PALS has a basis in goal orientation theory and was developed to examine the relation between the learning environment and students' motivation, affect, and behavior. The Academic Self-Efficacy Scale assessed students' beliefs that they could master the material and skills taught in school if they were given enough time and exerted enough effort. A 7-item scale was used in this study, which included five items in the original scale, with two additional new items: "*I am confident in getting excellent grades for Chemistry assessments or tests*" and "*When I am introduced to a new Chemistry topic, I am usually sure I will be able to learn it well*". As all the samples in this study offer Chemistry as one of the main science subject, it was incorporated into the items in this scale. Some other examples of the items in the scale include: "*I am certain I can learn Chemistry well in class this year*",

and “*Even if the work in Chemistry class is hard, I can learn it*”. The original instrument has a reliability of .78. The alpha coefficient of the adapted measure was .90.

Measure of Academic Stress Perception. Academic Expectations Stress Inventory (AESI) developed by Ang and Huan (2006) was administered to measure the level of academic stress arising from self- and other-expectations (e.g. parents, teachers). The inventory consists of two subscales: Self or Personal (4 items) and Others (5 items). The Self (Personal) subscale assesses adolescents’ academic stress that arises from their self-expectations (e.g., “I feel stressed when I do not live up to my own standards”) while the Others subscale measures the adolescents’ academic stress arising from expectations placed on them by parents and teachers (e.g., “I feel I have disappointed my parents when I do poorly in school”). In this study, the Overall or Total academic stress scale, which is the total scores for both the Others and Self subscales, was also measured. The AESI total scores yielded a value of .86 while the other two subscale scores yielded alpha values of .83 (self) and .84 (others).

Results

Descriptive Statistics and Intercorrelations

Table 1 presents descriptive statistics showing the mean, standard deviations, observed range, reliabilities and intercorrelations of the measures. The means for all the measures ranged from 3.78 to 4.68, with standard deviation ranging from 0.93 to 1.13. Cronbach’s alpha (α) ranging from .74 to .90, indicating good reliability of the scales.

Table 1: *Descriptive Statistics and Intercorrelations between the Measures/Variables*

Measure/Variable	n	Mean	SD	Observed range	Cronbach’s Alpha (α)	Measure/Variable					
						1	2	3	4a	4b	4c
1 Optimism	298	3.78	.98	1-5	.743	1					
2 Self-esteem	298	4.26	.93	1-5	.888	.48**	1				
3 Academic Self-efficacy	298	4.06	1.05	1-5	.901	.27**	.52**	1			
4a Academic Expectations Stress (Others)	298	4.18	1.13	1-5	.844	-.083	-.17**	.051	1		
4b Academic Expectations Stress (Self)	298	4.68	1.03	1-5	.828	-.20**	-.14**	.031	.53**	1	
4c Academic Expectations Stress (Total)	298	4.39	.96	1-5	.860	-.15**	-.18**	.049	.92**	.82**	1

* $p < 0.05$; ** $p < 0.01$

Consistent with the literature, the associations among optimism, self-esteem and academic self-efficacy were positive. Optimism and self-esteem had negative associations with academic expectations stress. The correlation between dispositional optimism and academic expectations stress (self) was $r = -.20$, $p < .001$; the correlation between self-esteem and academic expectations stress (self) and academic expectations stress (others) were $r = -.17$, $p < .001$ and $r = -.14$, $p < .001$ respectively. Although academic self-efficacy had positive associations with academic expectations stress, the coefficients were not significant.

Gender Differences

Table 2 shows gender differences in dispositional optimism, self-esteem, efficacy, and academic expectations stress by using T-tests. The sample in this study showed that there is no gender difference in optimism. However, males were found to be significantly higher than the females in self-esteem, $t(296) = 3.34$, $p < 0.01$, and academic self-efficacy, $t(296) = 3.88$, $p < 0.001$. The mean scores in the measures of self-esteem and academic self-efficacy among male students were higher than that of female students. Females, however, experienced significantly higher academic expectation stress than males, from expectations by self, $t(296) = -2.85$, $p < 0.01$, by others, $t(296) = -2.51$, $p < 0.05$, as well as in overall total, $t(296) = -3.02$, $p < 0.01$. The results revealed that there were gender differences in perceived academic stress, and that the female students experienced greater stress arising from expectations from self, others and in total as compared to the male students.

Table 2: Means (M), Standard Deviation (SD) and t Ratio between High-ability Male and Female Students

	Measure/ Variable	Male		Female		t	df	95% Confidence interval of the difference		Cohen's d
		M	SD	M	SD			Lower	Upper	
1	Optimism	3.76	0.99	3.80	0.96	.35	296	-0.262	0.184	-0.040
2	Self-esteem	4.44	0.90	4.09	0.92	3.34**	296	0.145	0.561	0.388
3	Academic Self-Efficacy	4.30	1.05	3.84	1.00	3.88***	296	0.227	0.695	0.451
4a	AESI (Others)	4.01	1.19	4.33	1.04	-2.51*	296	-0.581	-0.0692	-0.292
4b	AESI (Self)	4.50	1.05	4.84	0.99	-2.85**	296	-0.571	-0.104	-0.331
4c	AESI (Total)	4.22	0.98	4.55	0.91	-3.02**	296	-0.545	-0.115	-0.351

Note. AESI is the abbreviated form of Academic Expectation Stress Inventory; the scores of Academic expectation stress (total) is the sum of the scores of Academic expectation stress (others) and Academic expectation stress (self).

* $p < .05$; ** $p < .01$; *** $p < .001$

Predictors of Academic Expectation Stress: Dispositional Optimism, Academic Self-efficacy, Self-esteem and Gender

This section aims to examine the relative importance of academic self-efficacy, self-esteem, dispositional optimism, as well as gender, on the overall prediction model, self- and others-academic stress experienced as shown in Table 3.

Table 3: *Multiple Regression Prediction of Academic Expectation Stress Perceived by High-Ability Students*

Predictor	B	SE B	β	<i>t</i>	R^2
AESI (Others)					.073
<i>Optimism</i>	-.037	.075	-.032	-.497	
<i>Self-esteem</i>	-.283	.089	-.233	-3.19**	
<i>Academic self-efficacy</i>	.229	.072	.213	3.20**	
<i>Gender</i>	.332	.131	-.148	2.35**	
AESI (Self)					.092
<i>Optimism</i>	-.217	.068	-.205	-3.19**	
<i>Self-esteem</i>	-.114	.081	-.102	-1.41	
<i>Academic self-efficacy</i>	.178	.065	.181	2.75**	
<i>Gender</i>	.388	.119	.188	3.25***	
AESI (Total)					.097
<i>Optimism</i>	-.114	.063	-.117	-1.82	
<i>Self-esteem</i>	-.211	.074	-.204	-2.83**	
<i>Academic self-efficacy</i>	.207	.060	.228	3.46***	
<i>Gender</i>	.356	.110	.187	3.24***	

Note. AESI is the abbreviated form of Academic Expectation Stress Inventory; the scores of Academic expectation stress (total) is the sum of the scores of Academic expectation stress (others) and Academic expectation stress (self).

** $p < .01$; *** $p < .001$

The results of the simultaneous regression analysis revealed that the independent variables of gender, academic self-efficacy, self-esteem and dispositional optimism accounted for 7.3% of the variance for academic stress (others), $F(4,293) = 5.809, p < .000$. The variables found to be significant predictors of academic stress that arose from other-expectations include gender, $t(293) = -2.53, p < .012, \beta = .148$; academic self-efficacy, $t(293) = 3.203, p < .002, \beta = .213$; and self-esteem, $t(293) = -3.19, p < .002, \beta = -.233$. Dispositional optimism was not predictive of academic stress that arises from other-expectations, $t(293) = -.497, p = .62, \beta = -.032$.

As for academic expectations stress (self), except for self-esteem, gender, academic self-efficacy and optimism were significant in their predictive values on the academic stress that arose from self-

expectations, $F(4,293) = 7.42, p < .000$ and accounted for 9.2% of the variance. The variables found to be significant predictors of academic stress that arose from self-expectations include gender, $t(293) = 3.251, p < .001, \beta = .188$; academic self-efficacy, $t(293) = 2.746, p < .006, \beta = .181$; and optimism, $t(293) = -3.192, p < .002, \beta = -.205$. Self-esteem was not predictive of academic stress that arises from self-expectations, $t(293) = -1.414, p = .158, \beta = -.102$. Optimism, rather than self-esteem, was found to be predictor, along with gender, academic self-efficacy in academic stress arises from self-expectations. This finding suggested that perhaps dispositional optimism in high-ability students is an intrinsic attribute, and exerts greater influence on self-expectations of academic stress than academic stress that arises from the expectations of others. Although self-esteem and optimism were moderately correlated, it is noteworthy that the variables behaved differently in the predictive model for academic expectations stress (self).

When taking academic expectations stress in total, gender of participants, dispositional optimism, academic self-efficacy and self-esteem accounted for 9.7% of the variance. The independent variables significantly predicted the dependent variable academic expectations stress (total), $F(4, 293) = 7.863, p < .000$. The variables found to be significant predictors of academic stress that arose from both self-expectations and others-expectations include gender, $\beta = .187, t(293) = 3.235, p < .001$; academic self-efficacy, $t(293) = 3.46, p < .001, \beta = .228$; and, self-esteem $\beta = -.204, t(293) = -2.832, p < .005$. Optimism was not predictive of academic stress that arises from a total of others- and self-expectations, $t(293) = -1.822, p = .069, \beta = -.117$. The overall regression model did not support the predictive relation between dispositional optimism and academic expectation stress (total).

Discussions

The Associations between Dispositional Optimism, Self-esteem, Academic Self-efficacy and Academic Expectations Stress

The correlation analyses revealed that dispositional optimism and self-esteem had negative associations with academic expectations stress which indicate the higher the level of dispositional optimism and self-esteem, the lower the level of perceived academic stress among high-ability adolescents. The findings supported the role of optimism as a buffer for different life stressors, including academic matters, and this is consistent with past studies (Baldwin et al., 2003; Carver et al., 1993; Chang,

1996; Lin & Peterson, 1990). Optimistic students experience lower levels of psychological stress and loneliness. This may bring about a subsequent higher level of psychological well-being. Indeed, individuals with optimistic outlook manage stress effectively when encounter difficult situations (Scheier & Carver, 1985; Scheier et al., 1986; Scheier et al., 1989). Optimism increases a person's ability to endure situations and to solve problems, and this can have a positive impact on stress perceptions. The optimistic students are inclined to have a hopeful outlook on the future, so the trait of optimism may act positively to decrease the level of academic expectation stress. They are confident in their ability to handle academic challenges and overcome adversities. Similar phenomenon from other studies have shown that individuals who viewed their future in a positive light tended to report less perceived academic stress than their pessimistic counterparts (e.g. in Aspinwall & Talor, 1992; Ben-Zur, 2003; Chemers et al., 2001; Huan et al., 2006; Scheier & Carver, 1992).

There were negative associations between self-esteem and academic expectations stress found in this study. Lower level of self-esteem is associated with high levels of academic expectations stress. Since self-esteem is an overall self-appraisal of self-worth (Blascovich & Tomaka, 1991) and negative moods (Pritchard et al., 2007), the negative association between self-esteem and academic expectations stress in this study is inevitable.

Unlike optimism and self-esteem, academic self-efficacy demonstrated weak positive associations with academic expectations stress. Although the correlations were not statically significant, subsequent regression analyses revealed that academic self-efficacy predicts perceived academic expectations stress aroused from self and others consistently. The association between optimism and academic self-efficacy is consistent with extant literature. In addition, academic self-efficacy is also found to be a predictor of academic expectations stress in the current study.

Gender Differences

High-ability male showed higher level of self-esteem and academic self-efficacy than female whilst female has higher level of academic expectations stress aroused from both self and others. This finding points to the appreciably higher stress level experienced by the girls than the boys. This is in agreement with earlier findings of Jones' (1993) and Kwan's (1993) studies, with girls tending to

experience more stress than boys. Current findings may suggest a possible similar trend in that the older high-ability adolescent girls experienced higher academic stress perception than the boys. One possible reason for the higher academic stress level experienced by high-ability girls may be due to the fact that they believe being successful means having to excel in studies and be extraordinary in other areas of their lives: social, extracurricular, and even appearance. Having internalized the gender stereotypical view, that academic excellence was less important to them than to the boys, the gifted girls might even inadvertently put ceilings on their own achievements (Kwan, 1993). Indeed, adjusting to pre-university competitive academic setting amongst high-ability students can be a challenging experience. In a large community of high-ability learners, the competitive environment increases the stress level as experienced by the girls.

Predictors of Academic Expectations Stress

Although there was ample empirical evidence that showed the role of optimistic disposition in predicting successful adjustment to stressful situations in life (Ben-Zur, Rappaport, Ammar, & Uretzky, 2000; Herman-Stahl & Peterson, 1996), few studies have considered self-esteem and academic self-efficacy as psychological resources in the same predicting model. When taking into account optimism, self-esteem and academic self-efficacy on academic expectations stress in generating the prediction equations, optimism was accounted for perceived academic stress aroused from self rather than from others. Higher level of dispositional optimism accounted for lower level of academic stress while low level of self-esteem was accounted for higher perceived academic stress aroused from others. Moreover, self-esteem did not account for academic stress aroused from self.

Gender was found to be one of the significant predictors on academic expectations stress consistently across self, others and total in this study. However, testings on interactions in multiple regressions between gender and dispositional optimism; gender and academic self-efficacy; gender and self-esteem, did not yield significant R square change between high-ability adolescent male and female (the results of which are not reported in this article). This is consistent with Huan et al.'s (2006) study that adolescent boys and girls did not differ significantly in their academic stress level and also did not show significant interaction between gender and optimism on academic expectations stress among average adolescents. Taking all these findings together, it is clear that gender plays a pivotal role in perceiving academic expectations stress among high-ability adolescents.

Limitations of the Study and Future Directions

There are a number of limitations to the current study. Self-report study usually faces the risk of participants not being totally truthful and accurate in their responses, due to fatigue and the tendency to provide socially desirable responses. Although the sample size was large enough to provide both very conservative $N:k$ ratios and considerable power for all analyses, the respondents was limited to science students. Further research could replicate these results with larger sample and comparison group to examine the role of optimism in academic performances.

As an individual's characteristic explanatory style – how one explains the causes of bad events (Buchanan & Seligman, 1995), further investigation may explore the explanatory style, optimism and its relationship with academic achievement and perception of academic stress. While many studies revealed the positive influences of optimism, there are still some questions which remain unanswered. For example, what is the precise mechanism by which optimism influences perceived stress? What are the potential pathways by which optimism may influence optimal performance of high-ability students? The role of coping strategies (approach versus avoidance) used by optimistic and pessimistic students may be examined to help explain the differences in their perception of academic stress.

High-ability students face keen competition in schools and society where meritocracy is emphasised. The adolescents have high expectations both of themselves and from others to perform and succeed. Inevitably, they encounter many stressful situations in school. A continuous effort in focusing on stressful real-life situations which confront the high-ability learners (such as passing the preliminary examination at the final year, taking part in Olympiad competitions, or sitting in high stake interviews) are possible future directions for further research. Findings from such studies may shed some light to the role of optimism in stressful events or situations, so that possible intervention programmes specific to the situations can be implemented and guidance given to help them manage and perform to their potential.

Conclusion

Dispositional optimism is related to psychological variables such as self-esteem, academic self-efficacy. The present study revealed the predictive role of dispositional optimism, self-esteem, academic self-efficacy and gender in academic expectation stress. Based on the literature in adolescent coping, optimistic student is likely to focus less on the distress emotions or physical symptoms arising from the stressor and employ greater effort to remove the stress. Subsequently, such steps could help reduce the level of perceived academic stress in the optimistic student. In contrast, the pessimistic student is more likely to emphasize the negative aspects of the academic stress experienced and be disengaged from the task associated with the stress. Focus is placed directly on the stressful feelings, which could possibly explain the greater level of academic stress perceived by the pessimist.

Hence, any intervention programmes in school aimed at raising the students' optimism may improve the overall academic experience of these high-ability learners. A cognitive-behavioural programme focused on decreasing negative thoughts and increasing positive cognitions during the two years in senior high school could lead to increased self-efficacy, resilience, optimism and lower academic stress arises from self-expectations, which may in turn increase academic performance. Perhaps what is important is to remain positive about the future of research in this area and to be optimistic that research will continue to reveal the paths by which positive thinking work to people's benefits.

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