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Possible selves, strategies and perceived likelihood among adolescents in Hong Kong: desire and concern

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Possible selves provide a new perspective and a systematic way to learn about adolescents' envisioning of their own future. Literature shows some patterns of possible selves are universal worldwide while some are sensitive to context and culture. This study adapted the open-ended Possible Selves Questionnaire into Chinese and explored the general patterns of possible selves among adolescents in Chinese context. 3078 secondary school students in Hong Kong were surveyed about their possible selves and demographic factors. It is found that adolescents have more career- and school-related hoped-for possible selves and have more drug and risky behaviour feared possible selves. Adolescents have less strategy, especially concrete strategy for their possible selves. Gender and age differences were examined and potential contextual and cultural influences were discussed.

Keywords: hoped-for possible selves; feared possible selves; strategy; perceived likelihood; Hong Kong adolescents

Introduction

As possible selves reflect adolescents' envisioning about their future and serve the motivation and self-regulation function (Hoyle & Sherrill, 2006; Markus & Nurius, 1986), they become an important psychological construct in adolescence studies. The general pattern of possible selves provides rich information about what people envision as their hoped-for future and feared future, and what strategies they have to attain their hoped-for possible selves (HPS) and to avoid feared possible selves (FPS). Because possible selves may be different across age, gender, ethnicity and cultural context (Consedine, Sabag-Cohen, & Krivoshekova, 2007; Cross & Markus, 1991; Kao, 2000; Knox, Funk, Elliott, & Bush, 2000), studying the general pattern of possible selves is a fundamental step of applying possible selves in further research and practice to a new group of people. By far most of these studies were conducted in Western societies. Only a few of them focus on Asian and none was done among Hong Kong adolescents. In Hong Kong, adolescents are facing a lot of challenges, such as higher unemployment rate (Hong Kong Special Administration Region Government, 2012), educational system changes (Curriculum Development Council Hong Kong, 2013; Education and Manpower Bureau Hong Kong, 2005), and more affordable and easily accessible illicit drugs (Narcotics Division Security Bureau H.K.S.A.R., 2010, 2013). Studying the general pattern of possible selves among adolescents in Hong Kong provides a new perspective and a systematic way to understand youths' thoughts so as to provide better education and social work service to young people in modern Hong Kong society.

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Adolescents and possible selves

During adolescence, people explore their possibilities and develop a sense of self (Erikson, 1968). Undergoing fast physical and psychological changes, adolescents start to imagine what they will be. Also gaining increasing self-efficacy, adolescents could consider more possible futures for themselves (Bandura, Barbaranelli, Caprara, & Pastorelli, 2001). When adolescents look forward to and imagine their future, they are establishing their possible selves.

Possible selves consist of three parts: what one hopes to be (hoped-for selves), what one expects to be (expected selves) and what one fears to be (feared selves) (Markus & Nurius, 1986). Possible selves serve as motivational link between self-identity and behaviours (Oyserman, Bybee, & Terry, 2006; Oyserman, Fryberg, & Yoder, 2007). They are not only 'pulling' one toward the positive selves but also 'dragging' one against the negative selves. In addition, this future orientation in self-system acts as a self-regulatory function (Hoyle & Sherrill, 2006). These functions are based on what possible selves people have and the quality of the strategies they devise (Oyserman et al., 2006, 2007). For example, if one has a HPS as a university student and has plans in detail to attain this possible self, he/she would be more likely to work harder at school (Oyserman et al., 2006).

The content of possible selves shows the direction of attempts while the strategy relates the practice effort that attaining possible selves may require. Some studies explored the pattern of possible selves among different groups of middle school students. Knox et al. (2000) found that adolescents in the United States had more career-related and interpersonal possible selves with mainly white or Caucasian sample. Fryberg and Markus (2003) found American Indians had fewer possible selves and fewer categories of possible selves than European Americans. American Indians had more possible selves in achievement and fewer in interpersonal relations. Leondari, Gonida, and Gialamas (2009) found that the most frequently mentioned HPS of Hellenic adolescents were career, family and material goods, while the most referred to feared selves were career and health issues. Briones Tabernero, and Arenas (2011) found in a sample comprising 938 secondary school students (64.4% Spanish, 19.7% South American and 12.8% African) that most future concerns were related to a satisfactory job, family and economic situation. Some other research focused on various groups of adolescents, such as youth with delinquent behaviours (Oyserman & Markus, 1990), young fathers in prison (Meek, 2007), students with disability and without disability (Jenkins, 1999) or new teachers (Hamman, Gosselin, Romano, & Bunuan, 2010). The findings of these studies reflected that the formation of possible selves is closely related to the social context (Oyserman, Ager, & Ager, 1995).

In addition to the content and strategy of possible selves, the gender and age differences provide detailed information of the pattern of possible selves. With regard to gender, Knox et al. (2000) explored differences in 14 categories of possible selves among high school students. They found that girls expressed more FPS related to relational functioning, whereas boys generated more FPS related to occupation, general failure and inferiority. They did not find gender differences in content and likelihood of HPS (Knox et al., 2000). However, Brown and Diekman (2010) found that genders differed in their distant possible selves in terms of family and career domains. Lips (2004) found larger gender differences in possible selves content of high school students than university students and girls having more possible selves in humanities and less in business. These studies reflected that gender differences exist in possible selves in different domains. However, these gender differences were not consistent among different age and different groups of people. Thus, examining gender difference along with exploring the pattern of possible selves can enrich the understanding of possible selves' patterns.

With regard to age differences of possible selves, some of the existing studies focused on the difference across life stages (Cross & Markus, 1991; Hooker, 1992; Ryff, 1991) and demonstrated that possible selves would change according to different developmental tasks during life span. Most of the existing research focused on possible selves within one age stage, such as adolescence (e.g., Leondari et al., 2009; Oyserman & Fryberg, 2006), adulthood (Lee & Oyserman, 2007), and old age (e.g., Bardach, Gayer, Clinkinbeard, Zanjani, & Watkins, 2010; Waid & Frazier, 2003). However, there is little research that explored the changes within one life stage. As young people experience dramatic physical and psychological changes in adolescence, their ability to plan and visualise future may increase steadily from early to late adolescence (Boyd & Bee, 2012; Weinberger, Elvevåg, & Giedd, 2005). We predict that adolescents' possible selves, its strategies and its likelihood significantly increase through early, middle and late adolescences.

To the knowledge of the authors, published empirical study investigating the possible selves among Hong Kong Chinese adolescents is rare. This study has two preliminary aims: to translate Possible Selves Questionnaire into Chinese and adapt it into Hong Kong Chinese adolescent culture; to collect general information about the pattern of possible selves. We have three research questions. First, what are the content and the number of possible selves, strategies and perceived likelihood among Hong Kong adolescents? Second, how does gender affect the content and the number of possible selves, strategies and perceived likelihood? Last, what is the effect of age on the above-mentioned characteristics of possible selves?

Methods

This study has two phases. Phase one was to adapt Possible Selves Questionnaire (Oyserman, Bybee, Terry, & Hart-Johnson, 2004; Oyserman & Markus, 1990) into Chinese (PSQ_C). A rigorous *Back Translation and Target Language Test Method* (Maneesriwongul & Dixon, 2004) was used. The process included six steps: (1) double translated by two translators; (2) collected feedback from translation panel and revised; (3) conducted pilot study with 30 secondary school students; (4) revised questionnaires and collected feedback from translation panel and Youth Advisory Group; (5) revised and completed second pilot study with 10 additional secondary students; and (6) confirmed the final version. The translation panel was made up of two professors, a doctoral student and a research assistant. They provided sufficient support in terms of understanding of the theory on possible selves and checking the accuracy of use of language during the translation process. The Youth Advisory Group included four young people who gave feedback on the questionnaire's clarity and the layout from youth's perspectives.

Phase two study, part of a larger study by the Hong Kong Anti-drug Addiction Community Consortium, was approved by the Human Research Ethics Committee for Non-Clinical Faculties at The University of Hong Kong. Letters were sent to parents describing the study and its voluntary nature. Parents wishing to exclude their child were asked to sign and return a form. On the day of data collection, students whose parents had not excluded them were asked to assent to participate and again told that the study was voluntary and responses were anonymous.

Sampling procedure

Demographically speaking, the selected district is a good representative of the 18 city districts in Hong Kong (Hong Kong Census and Statistics Department, 2006). According to

the Census and Statistics Department Report (Hong Kong Census and Statistics Department, 2006), the demographic figures of this district were around the medium among all districts in terms of gender ratio, age proportion and school attendance rate. Recruitment strategies used randomised, stratified sampling method. The school types, location and participants' gender were taken into consideration. As such, sampling schools in this district could reflect the general school adolescents in Hong Kong. Eleven (73%) of the 15 secondary schools in the district agreed (the others did not differ on available characteristics – school size and the neighbourhood where they are situated). A total of 3078 students in 99 classes across the 11 schools participated (6–10 classrooms per school, about 30 students per class).¹ The number of participants represented around 10% of the youth population in the district in Hong Kong and provided enough power for relevant statistical analysis.

Data collection procedure

All data were collected in 2010 in classrooms of 25–30 students supervised by a research assistant. Data were collected through self-administered pencil-and-paper questionnaire. Students were given booklets, which took 15–20 min to complete and began with questions about substance use (the focus of the larger study), followed by parental support questions, possible self and self-esteem, and demographics questions.

Measures

Possible selves. PSQ_C measures two sets of HPS and two sets of FPS. Instructions and questionnaire matrices were adopted from Oyserman and colleagues (Oyserman, Coon, & Kimmelmeier, 2002; Oyserman & Markus, 1990). Students read: 'Each of us has some images or pictures in mind of what we will be like or what we want to avoid being like in the future. Think about your coming future years – imagine what you hope to be like and write down two HPS below' 'For each hoped-for self, mark yes or no in the column labelled have some plan to attain that HPS and write in what you plan to do.' For each of possible selves students wrote, they were also asked to rate how likely it was that the possible self would be attained, using a 5-point scale (1 = low likelihood, 5 = high likelihood). Same questions and structures were used to measure FPS.

As PSQ_C is an open-ended questionnaire, the following procedure was performed to explore the validity feature of the instrument. First, face validity and content validity were supported by the affirming from the translation panel, youth advisory group and participants of pilot studies. They agreed that the content and design of PSQ_C is designed to gauge respondents' perceived possible selves and on the whole the questionnaire measures the variables it claims to measure (Baumeister, Smart, & Boden, 1996; Kwan, Hui, & McGee, 2010). Second, the convergent validity was examined (Ervin & Stryker, 2001). As previous research showed that the perceived likelihood of possible selves was closely related with global self-esteem (Knox et al., 2000; Markus & Nurius, 1986; Oyserman & Markus, 1990), the convergent validity of PSQ could be examined by comparing the perceived likelihood of possible selves with global self-esteem (personal communication with Daphna Oyserman, December 30, 2009 and November 18, 2013). The applicability of Rosenberg's Self-esteem Scale to Chinese was also examined (Cai, Brown, Deng, & Oakes, 2007). In this study, the convergent validity of PSQ_C was established by finding a moderate correlation between the mean of perceived likelihood and the scores on Rosenberg Self-esteem Scale ($r = .32, p < .001$).

Demographics. Age ($M = 14.8$ years, $SD = 1.8$ years), gender (53% boys, 46% girls, 1% who did not report their gender) and monthly allowance were obtained from their parents. According to the developmental stages (Compas, Davis, Forsythe, & Wagner, 1987), about 50% participants ($n = 1531$) were in early adolescence (12–14 years old), about 41% participants ($n = 1,230$) were in middle adolescence (15–17 years old) and about 9% participants ($n = 279$) were in late adolescence (18–20 years old). Monthly allowance ranged from 1 = none, to 8 = more than HK\$3,000 (US\$400) using a scale adapted from Currie et al. (1997).² Monthly allowance is a measure of the financial resources children receive from parents (Ridge, 2002) and has been used as a proxy for family economic support (Shah, Syeda, & Bhatti, 2012).

Analysis

Descriptive analysis was used to answer the research question ‘What are the possible selves among adolescents in Hong Kong?’ Open-ended responses of possible selves were counted and content coded by the researcher and a research assistant (agreement rate was 95%). Content of HPS and FPS was coded into nine categories. These categories were school-related, career-related, general achievement, interpersonal, personality traits, physical/health-related, material lifestyles, drugs and alcohol use and delinquency possible selves (Clinkinbeard, 2007). The strategies were coded into two types: Concrete and abstract (Clinkinbeard, 2007; Oyserman et al., 2004). A concrete strategy was defined as any strategy that could be readily replicated by another person. For example, ‘talk more with parents’ could be easily understood and performed by another person. An abstract strategy was referred to the strategy had one of the following characteristics: (1) strategies that did not meet the above definition of concrete; (2) strategies that were not relevant to the possible self listed; (3) strategy that was just a repeat of the possible self or was equivalent to just ‘not’ doing it. For example, one’s feared self was drug abuser and the corresponding strategy was ‘do not take drug’ (Clinkinbeard, 2007).

Proportions of ordinal factors, mean, standard deviation and normality of continuous variables were examined via SPSS software, version 19.0. The pattern of possible selves was presented in three sections. First, the description of possible selves included the number of possible selves and the categories of possible selves. This part provides information about how much adolescents think about their future and what kinds of future images they consider. Gender and age group differences were examined. Second, description of strategies included the number of strategies and the types of strategies. This part provides information about the plans adolescents have to attain or avoid their possible selves. As participants were required to answer maximally two HPS and two FPS, possible answers to the number of HPS or FPS would be zero, one and two. Therefore, the number of possible selves and the number of strategies were regarded as ordinal variables. The third part was about the perceived likelihood of possible selves. Gender differences, age group differences and category differences were estimated via χ^2 - or t -test or ANOVAs. As perceived likelihood of FPS was a non-normally distributed variable, all the tests about perceived likelihood were calculated with 2000 bootstrap resampling to avoid the possible effect of non-normal distribution. SPSS software, version 19.0 was used for all above analyses.

Results

Description of possible selves

A majority of participants filled in two HPS (72%) and two FPS (66%); about 15% filled in one HPS and about 18% filled in one feared possible self.

Girls wrote significantly more HPS and more FPS than boys. About 79% girls filled in two HPS while 67% of boys filled in two HPS ($\chi^2(2, n = 3042) = 82.08, p < .001, phi = .16$). About 71% of girls filled in two FPS while 61% of boys filled in two FPS ($\chi^2(2, n = 3042) = 59.85, p < .001, phi = .14$).

Two χ^2 -tests for age group differences were conducted, one for the number of hoped-for selves and one for the number of feared selves. The one for HPS, $\chi^2(4, n = 3040) = 3.47, p = .48$ revealed that there was no significant difference among age groups. The number of feared possible self was significantly different by age, the χ^2 coefficient for FPS, $\chi^2(4, n = 3042) = 13.77, p < .01, phi = .07$. Participants in middle adolescence filled in the least FPS (63% filled in two FPS, while 68% of early adolescents and 65% late adolescents filled two FPS; 19% of middle adolescents did not fill in any FPS, while 14% early adolescents and 16% late adolescents did not fill any FPS).

The most common categories of HPS were career possible selves (41%, e.g., doctor, teacher), school possible selves (24%, e.g., a university student, making progress in school) and general achievement (9%, e.g., win a singing contest, professionals). For FPS, the most common categories were drugs and alcohol-related (32%, e.g. drug user, smoker), risky behaviours possible selves (16%, e.g. criminal, triad member) and personal traits (10%, e.g., lazy, hypocrite).

Table 1 shows the selected examples of nine of the categories of HPS and FPS found in this study. Specific examples were cited to illustrate the kinds of possible selves adolescents referred to.

Four χ^2 -tests were conducted for gender differences among possible selves categories, two for HPS and two for FPS. The four tests, two for HPS, $\chi^2_{1stHPS}(7, n = 2639) = 52.63, p < .001, phi = .14$ and $\chi^2_{2ndHPS}(7, n = 2, 215) = 19.62, p < .01, phi = .09$ and two for FPS, $\chi^2_{1stFPS}(8, n = 2506) = 74.15, p < .001, phi = .17$, and $\chi^2_{2ndFPS}(8, n = 2043) = 84.24, p < .001, phi = .20$, revealed that there were significant gender differences in categories of possible selves. Table 1 shows that, for the HPS, boys had more career possible selves and material life possible selves, while girls had more school possible selves and interpersonal possible selves. Boys had more risky behaviour FPS, while girls had more interpersonal and more school-related FPS.

Description of possible selves strategies

A strategy shows whether participants had thought about a path or method to fulfil their possible selves. Fifty-seven percent of participants reported one or more planned strategies for HPS while 30% reported one or more planned strategies to avoid becoming like their feared self.

Gender differences existed in the number of strategies of HPS and FPS, with χ^2 coefficient for HPS, $\chi^2(1, n = 3042) = 151.87, p < .001, phi = .22$, χ^2 coefficient for FPS, $\chi^2(1, n = 3042) = 84.36, p < .001, phi = .17$. Girls were more likely to write a strategy for their possible selves. About 69% of girls reported at least one strategy for hoped-for selves and 38% reported strategy for feared selves, while only 47% of boys filled in strategy for hoped-for selves and 23% reported strategy for feared selves.

Two χ^2 tests for age group differences were conducted, one for the number of hoped-for selves and one for the number of feared selves. Both tests showed significant difference among age groups ($\chi^2_{HPS}(2, n = 3040) = 13.45, p < .01, phi = .07$; $\chi^2_{FPS}(2, n = 3042) = 24.37, p < .01, phi = .09$). For hoped-for selves, being older had higher percentage of reporting strategy (67% late adolescents, 57% middle adolescents and 56% in early adolescence reported strategy for their hoped-for selves). As for feared selves,

Table 1. Possible selves by categories and selected examples

Hoped-for possible selves: Categories, % in gender and selected examples	Feared possible selves: Categories, % in gender and selected examples
<p>Job/Career (42% of boys and 40% of girls) 'Doctor' (醫生*) (boy, 17 years old) 'Chef' (廚師) (boy, 15 years old) 'A successful teacher' (成功又出色的教師) (girl, 13 years old)</p>	<p>Drugs and alcohol (34% of boys and 31% of girls) 'Drug user (吸毒者)' (boy, 17 years old) 'Drug user influenced by peers' (受朋友影響而吸毒的人) (girl, 13 years old) 'Frequent drinker or frequent smoker' (經常喝酒/煙民) (girl, 14 years old)</p>
<p>School/Academic (21% of boys and 26% of girls) 'Student in a preferred university' (心儀大學的大學生) (girl, 16 years old) 'A knowledgeable person' (見多識廣的人) (boy, 17 years old) 'Enjoy studying (讀書不覺悶的人) (girl, 12 years old)</p>	<p>Risky behaviours (20% of boys and 12% of girls) 'Juvenile gangster' (童黨) (girl, 14 years old) 'Hooligans' (飛仔) (boy, 17 years old) 'Roaming teenagers' (經常在街上的壞孩子) (boy, 14 years old)</p>
<p>General achievements (10% of boys and 10% of girls) 'Contribute to the society' (對社會有貢獻的人) (boy, 16 years old) 'A capable person' (一個有用的人) (girl, 14 years old) (girl, 13 years old) 'Further developed in art or music' (在藝術或音樂方面有所發展) (girl, 15 years old)</p>	<p>Personality traits (8% of boys and 13% of girls) 'A lazy person' (懶惰的人) (girl, 17 years old) 'Often speak foul language' (常爆粗的人) 'An aimless conformist' (隨波逐流、沒有理想的人) (boy, 17 years old)</p>
<p>Interpersonal (8% of boys and 10% of girls) 'Has a lot of friends' (有好多朋友的人) (girl, 14 years old) 'Do not let parents worry about me' (一個不會令父母擔心的人) (girl, 16 years old) 'An authentic' (找到一個真心知己) (boy, 14 years old)</p>	<p>General achievements (10% of boys and 9% of girls) 'An incapable person' (廢人) (boy, 16 years old) 'Low achievement' (無所成的人) (girl, 17 years old) 'A burden of society' (社會的包袱) (girl, 12 years old)</p>
<p>Material/Lifestyles (9% of boys and 5% of girls) 'A wealthy person' (有錢人) (girl, 12 years old)</p>	<p>Job/Career (10% of boys and 8% of girls) 'Unemployed' (沒工作的人) (girl, 13 years old)</p>

(Continued)

Table 1. (Continued)

Hoped-for possible selves: Categories, % in gender and selected examples	Fearred possible selves: Categories, % in gender and selected examples
'A tramp travelling around the world' (周遊列國的流浪者) (girl, 17 years old)	'Go to work at aged 15' (十五歲就要工作的人) (girl, 12 years old)
'Homeboy' (宅男) (boy, 13 years old)	'unemployed school drop-outs' (雙失青年)
Personality traits	Interpersonal
(6% of boys and 6% of girls)	(6% of boys and 11% of girls)
'A humorous person' (幽默幽默的人) (girl, 19 years old)	'Family burden' (家人的累贅) (boy, 14 years old)
'An attractive girl' (萬人迷) (girl, 13 years old)	'Excluded by peers' (被排斥的對象) (boy, 14 years old)
'Can take care of my own need' (能照顧自己需要的人) (boy, 17 years old)	'Unmarried mother' (未婚媽媽) (girl, 13 years old)
Physical/Health-related	School/Academic
(3% of boys and 2% of girls)	(4% of boys and 9% of girls)
'A healthy people' (一個健康的人) (boy, 14 years old)	'A person who only plays and does not study' (一個只懂玩樂，荒廢學業的人) (girl, 14 years old)
'A wise beauty' (一個美麗又有智慧的人) (girl, 12 years old)	'Repeater' (留班生) (boy, 15 years old)
'A healthy youth' (一個健康的青年) (boy, 15 years old)	'Cannot admitted to HKU or CUHK' (入不了HKU/CU的人) (boy, 18 years old)
Drugs and alcohol	Material/Lifestyles
(2% of boys and 1% of girls)	(6% of boys and 6% of girls)
'A student who doesn't take drug' (不吸毒的學生) (girl, 13 years old)	'Aimless person' (失卻生命意義混然度日的人) (boy, 17 years old)
'A person who does not drink, smoke or take drug' (煙酒毒都不沾的人) (girl, 15 years old)	'Compensated dating girl' (擺交少女)
(girl, 12 years old)	'Can not afford the family expenditures' (一個不能養活家人的人) (girl, 19 years old)
'A person who against drug use' (反'道友') (boy, 13 years old)	Physical/Health-related
Risky behaviours	(2% of boys and 2% of girls)
(0% of boys and 0% of girls)	'A fat girl' (肥胖的人) (girl, 15 years old)
	'Health deteriorate' (身體問題再度轉差)
	(boy, 17 years old)
	'Stammerer' (口窒窒的人) (boy, 17 years old)

Note: *The Chinese words were the participants' verbatim.

participants in middle adolescence reported the least strategies. About only 27% of the middle adolescence group reported at least one strategy, while 42% of late adolescence group and 30% of early adolescence group reported strategy for their feared selves.

Whether a strategy was concrete or abstract reflected the quality of the planned strategy. Concrete strategy referred to detailed or executable method to attain hoped-for or avoid FPS. Abstract strategy referred to indefinite and non-concrete strategy (Clinkinbeard, 2007).

Among those who reported a strategy for 1st hoped-for self ($n = 1,553$), 36% reported a concrete strategy while 64% reported an abstract strategy. Among those who reported a strategy for 2nd hoped-for selves ($n = 915$), about 47% reported a concrete strategy while 53% filled in an abstract one. Among those who filled in a strategy for 1st feared possible self, ($n = 766$), about 48% reported a concrete strategy while 52% reported an abstract strategy. Among those who reported a strategy for 2nd FPS ($n = 512$), about 45% reported a concrete strategy while 55% filled in an abstract one.

Four χ^2 tests were conducted for gender differences among the strategy types for each possible self. The four tests showed no significant gender difference within the strategies of possible selves ($\chi^2_{1stHPS}(1, n = 1534) = 1.66, p = .20$; $\chi^2_{2ndHPS}(1, n = 905) = 3.19, p = .07$; $\chi^2_{1stFPS}(1, n = 757) = 1.38, p = .24$; $\chi^2_{2ndFPS}(1, n = 509) = 1.78, p = .18$).

Another four χ^2 -tests for age group difference among the strategy types were conducted for each possible self. For the 1st hoped-for and the 1st FPS, χ^2 showed no age group difference in their strategies ($\chi^2_{1stHPS}(1, n = 1540) = .64, p = .73$; $\chi^2_{1stFPS}(2, n = 757) = 2.88, p = .24$). However, χ^2 for the 2nd HPS ($\chi^2_{2ndHPS}(2, n = 905) = 7.65, p < .05, phi = .09$) and 2nd FPS ($\chi^2_{2ndFPS}(2, n = 509) = 7.00, p < .05, phi = .12$) showed significant age group differences. For HPS, being older reported more concrete strategy (58% in late adolescence, 48% in middle adolescence and 43% in early adolescents). As for FPS, participants in mid-adolescence reported the least concrete strategies (53% in late adolescence, 37% in middle adolescence and 48% in early adolescents reported concrete strategy).

Perceived likelihood of possible selves

The perceived likelihood of HPS and FPS was above the midpoint (3 out of a Likert scale ranged 1–5). Participants were more likely to think they would succeed in avoiding their feared ($M = 4.1, SD = 1.0$) than succeed in attaining their hoped-for ($M = 3.4, SD = 0.8$) possible selves, $t(2, 461) = 30.09, p < .001$, Cohen's $d = .77$. Given the skewness of likelihood of FPS (skewness = 1.23, kurtosis = 1.18), bootstrapping was used in all analysis about likelihood.

Two t -tests were used to examine the gender differences on perceived likelihood. Both tests, $t_{HPS}(1, 2430) = 1.94, p = .05$; $t_{FPS}(1, 2430) = .09, p = .09$, indicated that boys and girls had marginally significant differences in perceived likelihood for HPS but not for FPS. Two ANOVAs were conducted to examine the age group differences. Given the possible unequal variances caused by large difference in age group sample size, Welch test was conducted with ANOVA. Age group differences existed in perceived likelihood for HPS ($F(2, 643) = 3.31, p < .05$), but not for avoidance of FPS ($F(2, 648) = .75, p = .48$). Post hoc test showed that participants in late adolescence rated significantly lower likelihood than those in mid and early adolescence. The interaction effect between gender and age ($F(7, 2175) = 1.72, p > .10$) was not statistically significant. No significant interaction effect between gender and age on perceived likelihood was found by two-way between group ANOVA.

Four one-way ANOVAs with Welch tests were calculated to determine whether perceived likelihood differed by categories of possible selves. Results indicated that perceived likelihood differed by categories of both HPS and FPS ($F_{1stHPS}(7, 277) = 24.00, p < .001$; $F_{2ndHPS}(7, 296) = 33.6, p < .001$), $F_{1stFPS}(8, 452) = 33.15, p < .001$, and $F_{2ndFPS}(8, 543) = 20.67.04, p < .001$). However, no significant interaction effect was found between gender and categories on likelihood ratings. Participants perceived that physical/health-related and personality-related HPS were more likely to be attained, while material-related and school possible selves were least likely to be attained. For FPS, drugs-related possible selves (i.e., high possibility to avoid drug taking) and risky behaviour-related were more likely to be avoided. Physical/health-related and school-related FPS were the least likely to be avoided.

Discussion

This study aimed at exploring the general pattern of possible selves among Hong Kong adolescents, including the content of possible selves, the strategy of possible selves and the perceived likelihood of possible selves. It is found that the most frequently mentioned HPS were career-related and school-related and general achievement. The vast majority of respondents' possible selves reflected normative goals, such as finding a decent and steady job, better school achievement, getting admission to university, and being a useful person to the society. Results from this study are consistent with previous research pointing to the possible selves among adolescents (e.g., Curry, Trew, Turner, & Hunter, 1994; Knox et al., 2000; Leondari et al., 2009; Oyserman, Terry, & Bybee, 2002). Many fewer adolescents mentioned physical and health-related possible selves. It seems health is not a major concern among adolescents. With regard to FPS, a lot of adolescents were afraid of becoming lazy, aimless, incapable people and having low achievement, in addition to becoming the drug and risky behaviour-related people. Compared to the studies that were conducted in Western countries, this study found that Hong Kong adolescents expressed fewer interpersonal-related HPS and FPS, which was similar to American Indians (Fryberg & Markus, 2003) but was different from European Americans (Knox et al., 2000).

Not every possible self had one strategy. It seems adolescents had some envisioning about the future, but did not have well-planned strategies for possible selves, especially for avoiding the FPS (Clinkinbeard & Murray, 2012; Clinkinbeard & Zohra, 2012; Oyserman, Bybee, & Terry, 2003). In addition, some of the strategies were rather simple and abstract. For example, many students mentioned 'study hard' to attain school achievement. Intervention on how to improve the planning skills and develop strategy would be helpful to increase the motivation function of possible selves (Oyserman et al., 2006).

With regard to perceived likelihood, Hong Kong adolescents rated physical/health-related and personality HPS most likely to be attained while drug and risky behaviour FPS were most likely to be avoided. This may be because in general adolescents tend to take health for granted (Harris, Duncan, & Boisjoly, 2002) and think they can avoid becoming drug and risky behaviour FPS by not doing it and staying away from the peers who use drugs or conduct delinquent behaviours. It is noteworthy that students perceived relatively low likelihood of school-related possible selves, either of attaining HPS or of avoiding FPS. It seems students have more expectations of their school-related possible selves and fears of failure in school work, but they lack confidence about fulfilling them. More guidance and support would be helpful for adolescents to know the path for attaining their school possible selves.

The study found some gender differences that are consistent with those in previous research. For example, boys expressed more career and material-related possible selves while girls had more school and interpersonal-related possible selves. Generally, girls cared more about interpersonal relationship than boys, while boys cared more about career (Brown & Diekman, 2010; Knox et al., 2000). In addition, boys had higher perceived likelihood for their FPS (Knox, Funk, Elliot, & Bush, 1998). This study also found that girls reported more possible selves strategies than boys. However, girls did not have significantly more concrete strategies than boys.

This study also found possible selves differences between developmental stages in adolescence. Older adolescents were more likely to have more strategies and more concrete strategy for HPS. However, participants in mid-adolescence reported the significantly less FPS, fewer strategies and less concrete strategy for FPS. Mid-adolescence may be a stage in which young people have some difficulties with considering the negative side of some behaviours, such as risky behaviours (Rose, 2006). In addition, late adolescents perceived significantly lower likelihood for their HPS than early- and mid-adolescents. Growing up, they may realize more restrictions and difficulty in reality and may doubt the likelihood of realising dreams.

This study was conducted among Hong Kong adolescents. Some of the findings may be related to Chinese culture and Hong Kong context. For example, school-related was the second dominant category of HPS. This may be partly because Chinese culture also values education highly (Hau & Ho, 2010). Children are taught that ‘all works are low in status, except study which is the highest’ (*wan ban jie xia pin, wei you du shu gao*; 萬般皆下品，唯有讀書高) (Wang, Song Dynasty). Among the strategies that participants had, working hard and studying hard were most commonly expressed. This may be due to the emphasis on effort in Chinese culture. Working hard toward a goal even though the goal seems impossible is highly praised (Lau, 1996; Leung, 2010). For example, ‘if one has the perseverance, one can even remove a hill, the symbolic obstacle, by carrying away the sand with baskets’ (*yugong yi shan*; 愚公移山) (Lau, 1996), which emphasises the importance of effort rather than ability. However, career-related possible selves seem to be universally common possible selves among adolescents across different nationalities and ethnicities (Knox et al., 1998).

There were several limitations of this study. First, it was a cross-sectional study measured on only one time point. Therefore, this study could not provide the information of development of possible selves. Future research should examine longitudinally the changes of possible selves over time. Second, the research design of questionnaire survey also led to some shortcomings. The classroom survey had limited time for participants to think about their possible selves and strategies in detail and to fill in more possible selves. Questionnaire interview would be better to collect more information about possible selves if time and resources permitted. Third, this study did not provide the information of balanced possible selves that are the matched HPS and FPS in the same domain (Lee & Oyserman, 2009). Because this questionnaire only measured two HPS and two FPS, the match rate was very low in preliminary analysis. Fourth, this study was part of a larger study on adolescents’ attitude to drug use. Some drug-related FPS may be more or less influenced by other drug-related questions in the questionnaire.

This research is among the few studies on adolescents’ possible selves in Chinese context and the first in Hong Kong. Understanding what the adolescents think possible for their future, how they plan to attain it, and how likely are these possible selves sheds light on the adolescents’ motivational aspects of self-system. It also provides insight into ways adolescents perceive their own possibility for unknown future and adapt to development

outcomes. The findings from this study are also useful for understanding youths' motivation for their future in the contemporary context so as to provide useful information for intervention programs.

Disclosure statement

No potential conflict of interest was reported by the authors.

Notes

1. Secondary school in 2010 included seven forms. Forms one to six were equivalent to US grades seven to twelve. Form seven was the last high school grade in Hong Kong, which akin to the Canadian system, had an additional high school year. During the time of data collection, students in forms five and seven were attending public examinations and so were not included in the sample. In each participating school, two or three classes were randomly selected from forms one, two, three, four and six (equivalent to grades 7 to 10 and grade 12 in the US system).
2. Intermediate points were 2 = under HK\$500 (US\$70), 3 = HK\$500–999 (US\$70–140), 4 = HK\$1000–1499 (US\$140–210), 5 = HK\$1500–1999 (US\$210–280), 6 = HK\$2000–2499 (US\$280–350), 7 = HK\$2500–2999, (US\$ 350–400). Scale points were set according the feedback of a pilot study and in consultation with the youth advisory group working with the larger study so that the range would fit the amount of monthly allowance children in Hong Kong receive. In Hong Kong, parents provide a monthly allowance for school children's transportation, meals, school-related functions, social activities and entertainment.

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