Psychosocial Factors Influencing Individual Well-being in Chinese Adolescents in Hong Kong

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Literature Review

- **Life satisfaction:** global evaluation of life; stable and essential indicator of personal well-being and psychological development in adolescence[1-4]

- **Hopelessness:** one's expectation that highly desirable outcomes will not occur. Hopelessness theory - high correlation between hopelessness and symptoms of depression[5]

- Adolescents' perception and realization of hope in life is critical in shaping physical and emotional well-being, goal orientation, and avoidance of risk behaviors[6]

- Few longitudinal studies done on adolescent's life satisfaction or hopelessness in Chinese contexts

Search Results based on PsycINFO Database (2005-2015)

Search Term	Total No. of Article	No. of "Peer Reviewed" Article	No. of "Peer Reviewed" + "Longitudinal" Study	No. of "Peer Reviewed" + "Longitudinal" + "Chinese" Study
"Life satisfaction" + "Adolescent"	1516	1205	165	**18**
"Hopelessness" + "Adolescent"	1004	755	86	**10**

- Mixed results regarding life satisfaction in adolescents:

1. McCullough et al. [7]: majority of adolescents had moderately high levels of life satisfaction
2. Some researchers indicated that adolescents' life satisfaction decreased over time in the global context[8-10]

- Findings of adolescents' change in hopelessness:

1. Some studies found that adolescents experienced higher level of hopelessness during transitional period[10-13]
2. Lester[14] suggested that hopelessness level of adolescents did not increase in recent years

- Generalizability issue: small sample size or homogenous sub-sample in existing studies[15]

- Insufficient research on assessing the predictors of adolescent life satisfaction and hopelessness

Summary of Review on Predictors of Adolescents' Life Satisfaction and Hopelessness

Factors		Life Satisfaction		Hopelessness	
Socio-demographic Factors	Age	√	No difference[16]	≠	Elder adolescent>Younger adolescent[6]
					No difference[3,11]
	Gender	≠	Male>Female[2]	≠	Male>Female[14,45]
			Female>Male[16-20]		Female>Male[6]
Family Attributes	Family Intactness	√	Intact family>Non-intact family[16,21-24]	√	Non-intact family>Intact family[15,6]
	Economic Dsiadvantage	≠	No difference[25]	X	-
			Non-poor family>Poor family[26]		
			Mixed findings[27-29]		
Positive Youth Development Attributes	Resilience	√	High level of resilience>Low level of resilience[30-32]	√	Low level of resilience>High level of resilience[46-49]
	Psychosocial Competence	√	High social competence>Low competence[32-33]	X	Low social competence>High competence[50] **(Existing research only focuses on adults, not adolescents)**
	Positive Identity	√	High level of positive identity>Low level of positive identity[31-32]	√	Low level of positive identity>High level of positive identity[46]
	Spirituality	√	High level of spirituality>Low level of spirituality[18,32,34-36]	√	Low level of spirituality>High level of spirituality[51-52]
Family Processes	Family Functioning	√	Good functioning>Poor functioning[26,32,37-38]	√	Poor functioning>Good functioning[53]
	Parent-child Relational Qualities	√	Good relation>Poor relation[27,32,38-44]	√	Poor relation>Good relation[15,54]

***Note*: "√"=consistent findings; "≠"=inconsistent findings; "X"=little research evidence**

Research Questions

1. What is the development trend of adolescent **life satisfaction** in the high school years?

2. What is the development trend of adolescent **hopelessness** in the high school years?

3. How socio-demographic factors (age & gender), family attributes (family intactness & economic disadvantage), positive youth development attributes (resilience, psychosocial competence, positive identity & spirituality) and family processes (family functioning & parent-child relational qualities) impact on the initial level and change of **life satisfaction** in adolescents?

4. How socio-demographic factors (age & gender), family attributes (family intactness & economic disadvantage), positive youth development attributes (resilience, psychosocial competence, positive identity & spirituality) and family processes (family functioning & parent-child relational qualities) impact on the initial level and change of **hopelessness** in adolescents?

Methodology

- Six-year longitudinal data set (part of a positive youth development program in Hong Kong)
- Number of school: 28
- Data collection period: 2009-2015
- Data analysis: utilization of linear mixed method in SPSS 23

Table 3 Number of Participants at Each Measurement Occasion

	Wave 1	%	Wave 2[a]	%	Wave 3[a]	%	Wave 4[a]	%	Wave 5[a]	%	Wave 6[a]	%
N (Participants)	3,328		2,905		2,860		2,684		2,474		2,385	
Gender												
Male	1,719	51.7	1,445	49.7	1,433	50.1	1,336	49.8	1,200	48.5	1,161	48.7
Female	1,572	47.2	1,419	48.8	1,407	49.2	1,338	49.9	1,265	51.1	1,218	51.1
Economic disadvantage												
NOT receiving CSSA	2,606	78.3	2377	81.8	2,341	81.9	2,269	84.5	2,131	86.1	2,063	86.5
Receiving CSSA	225	6.8	160	5.5	147	5.1	132	4.9	114	4.6	110	4.6
Family intactness												
Intact families	2,781	83.6	2,415	83.1	2,397	83.8	2,213	82.5	2,027	81.9	1,948	81.7
Non-intact families	515	15.5	469	16.1	455	15.9	466	17.4	441	17.8	432	18.1

Note: [a] The numbers were based on the participants who ever participated in Wave 1 assessment, as only those joining Wave 1 assessment were included in LMM. The numbers of the students who did not report the corresponding information are not presented.

Instruments

Table 4

	Variable	Name of Instrument	
IV	**Resilience (RE)**	Resilience Subscale (6 Items)	Chinese Positive Youth Development Scale (CPYDS)[55]
	Psychosocial Competence (SC)	Social Competence Subscale (7 Items)	
	Positive Identity (PI)	Clear and Positive Identity Subscale (7 Items)	
	Spirituality (SP)	Spirituality Subscale (7 Items)	
	Family Functioning	Family Functioning Scale (9 Items)[56]	
	Parent-child Relational Qualities	Father-child Relation Scale (14 Items) Mother-child Relation Scale (14 Items)[57]	
	Age	Demographic Information Scale (4 Items)	
	Gender		
	Economic Disadvantage		
	Family Intactness		
DV	**Life Satisfaction**	Life Satisfaction Scale (5 Items)[58-59]	
	Hopelessness	Hopelessness Scale (5 Items)[60-61]	

Results (Life Satisfaction:1)

- **Correlations**: Socio-demographic factors, family attributes, positive youth development attributes, and family process were associated with life satisfaction (Table 5)

Table 5 Correlations among Variables (Life Satisfaction)

DV

IV

Variables	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.
1. LS	1																
2. SLS	.552**	1															
3. TLS	.483**	.581**	1														
4. FLS	.425**	.491**	.591**	1													
5. GLS	.416**	.476**	.561**	.636**	1												
6. QLS	.375**	.436**	.517**	.571**	.663**	1											
7. Age	-.061**	-.042**	-.046**	-.009	.019*	.016	1										
8. Gender	-.007	-.030**	.025**	.062**	.042**	.045**	-.030**	1									
9. Family Intactness	.096**	.090**	.049**	.054**	.051**	.052**	-.064**	-.008	1								
10. Economic Disadvantage	-.047**	-.082**	-.072**	-.067**	-.084**	-.068**	-.020*	.067**	-.125**	1							
11. RE	.450**	.315**	.273**	.260**	.244**	.216**	.013	-.020*	.048**	-.002	1						
12. SC	.384**	.274**	.243**	.235**	.200**	.178**	.000	.067**	.062**	.017*	.479**	1					
13. PI	.460**	.308**	.267**	.243**	.222**	.213**	-.011	.079**	.063**	.013	.495**	.510**	1				
14. SP	.608**	.436**	.373**	.323**	.316**	.277**	-.038**	.041**	.086**	-.004	.533**	.454**	.514**	1			
15. Family Functioning	.538**	.420**	.348**	.289**	.300**	.265**	-.078**	-.049**	.184**	-.003	.384**	.347**	.387**	.499**	1		
16. Father-child Relationship Qualities	.450**	.349**	.299**	.261**	.264**	.238**	-.053**	.015	.196**	-.033**	.322**	.286**	.354**	.413**	.611**	1	
17. Mother-child Relationship Qualities	.417**	.306**	.247**	.191**	.195**	.169**	-.083**	.070**	.110**	.032**	.337**	.281**	.334**	.410**	.600**	.484**	1

Results (Life Satisfaction:2)

- **Model fit:**
  - **Unconditional model:** Quadratic model (Model 3) fitted the data better than the linear model.
  - **Conditional model:** Model 4 had the best model fit (Table 7 & 8)

- **Development trend**: Life satisfaction **decreased** across six waves and the decline rate gradually slowed down (Fig. 1)

Table 7 Results of Unconditional Growth Models (Life Satisfaction)

			Model 1		Model 2		Model 3	
			Estimate	SE	Estimate	SE	Estimate	SE
Fixed effects								
Intercept		β_{0j}						
	Intercept	γ_{00}	3.713***	.012	3.896***	.016	3.929***	.018
Linear Slope		β_{1j}						
	Time	γ_{10}			-.075***	.004	-.120***	.012
Quadratic Slope		β_{2j}						
	$Time^2$	γ_{20}					.009***	.002
Random effects								
Level 1 (within)								
	Residual	r_{ij}	.565***	.006	.470***	.006	.443***	.006
Level 2 (between)								
	Intercept	u_{0j}	.622***	.016	.785***	.025	.810***	.030
	Time	u_{1j}			-.065***	.005	-.124***	.017
	$Time^2$	u_{2j}					.146***	.015
Fit statistics								
Deviance			58099.191		57059.376		56935.875	
AIC			58105.191		57071.376		56955.875	
BIC			58129.167		57119.328		57035.795	
df			3		6		10	

***Note*: Model 1 = unconditional mean model; model 2 = unconditional linear growth model; model 3 = unconditional quadratic growth model.**
***** *p* < .001**

Table 8 Results of LMM Models with Level-2 Predictors (Life Satisfaction)

		Model 4	
		Estimate	SE
Fixed effects			
Intercept	β_{0j}		
Intercept	γ_{00}	4.228***	.253
Gender [a]	γ_{01}	.053***	.015
RE	γ_{02}	.061***	.018
SC	γ_{03}	.046**	.018
PI	γ_{04}	.116***	.019
SP	γ_{05}	.361***	.019
Family Functioning	γ_{06}	.212***	.022
Father-child Relationship Qualities	γ_{07}	.102***	.019
Mother-child Relationship Qualities	γ_{08}	.050**	.019
Linear slope	β_{1j}		
Intercept	γ_{10}	-.084	.239
Gender [a]	γ_{11}	-.036**	.014
RE	γ_{12}	-.009	.017
SC	γ_{13}	.009	.017
PI	γ_{14}	-.055**	.018
SP	γ_{15}	-.101***	.018
Family Functioning	γ_{16}	-.036	.020
Father-child Relationship Qualities	γ_{17}	-.002	.018
Mother-child Relationship Qualities	γ_{18}	-.042*	.017
Quadratic slope	β_{2j}		
Intercept	γ_{20}	-.052	.048
Gender [a]	γ_{21}	-.004	.003
RE	γ_{22}	.001	.003
SC	γ_{23}	-.002	.003
PI	γ_{24}	.009*	.003
SP	γ_{25}	.011**	.004
Family Functioning	γ_{26}	.005	.004
Father-child Relationship Qualities	γ_{27}	.0002	.003
Mother-child Relationship Qualities	γ_{28}	.005	.003
Random effects			
Level 1 (within)			
Residual	r_{ij}	.433	.007
Level 2 (between)			
Intercept	u_{0j}	.234	.017
Time	u_{1j}	.108	.015
Time^2	u_{2j}	.003	.001
Fit statistics			
Deviance		35648.016	
AIC		35734.016	
BIC		36060.589	
df		43	

***Note*: 1) Predictors that had insignificant effects in initial status, linear slope, and quadratic slope are not presented;**
2) [a] Male = 1, Female = -1. *** $p < .001$; ** $p < .01$, * $p < .05$

Results (Life Satisfaction:3)

❑ **Significance of predictors**:

1. Resilience, psychosocial competence, family functioning, and father-child relational qualities were significant predictors of initial status, but not significant in linear and quadratic slopes (Table 8)
2. Gender was significant only in initial status and linear change. Males had more life satisfaction in initial assessment, but showed a faster decreasing rate than females (Table 8 & Fig. 2)

3. Mother-child relational qualities was significant only in initial status and linear change (-). Good mother-child relationship showed more life satisfaction than poor mother-child relationship in initial assessment, but had a faster decreasing rate (Table 8 & Fig. 5)

4. Positive identity and spirituality were significant predictors of initial status, linear (-), and quadratic slopes (+). In initial assessment, higher positive identity and spirituality showed more life satisfaction. Life satisfaction for adolescents with higher positive identity/spirituality will drop faster than those with lower positive identity/spirituality (Table 8; Fig. 3 & 4)

Growth Curve (Life Satisfaction)

Fig.1 Growth Trajectory of the Overall Sample

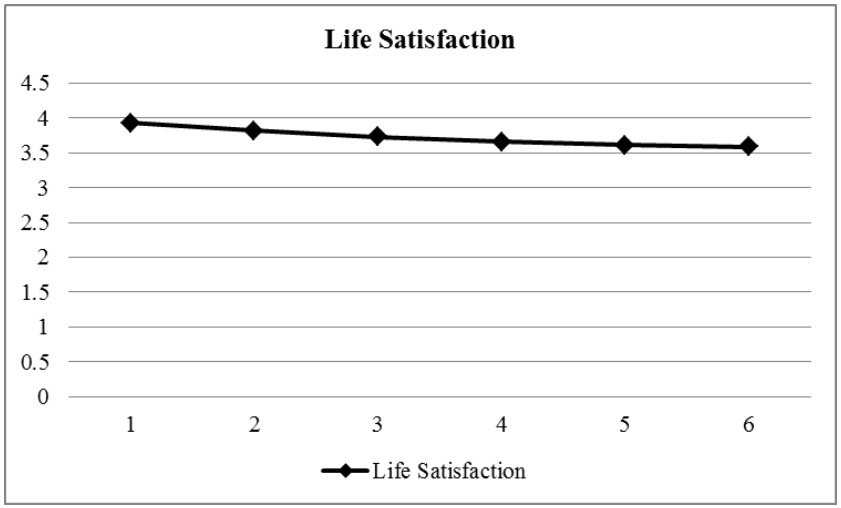


Fig.2

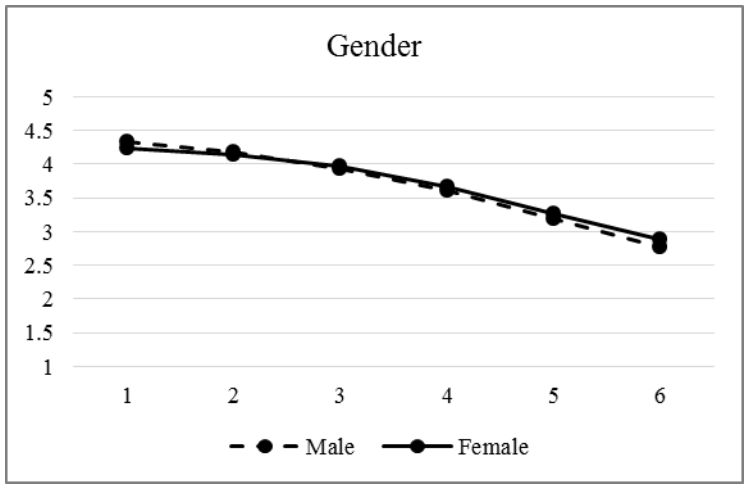


Fig.3

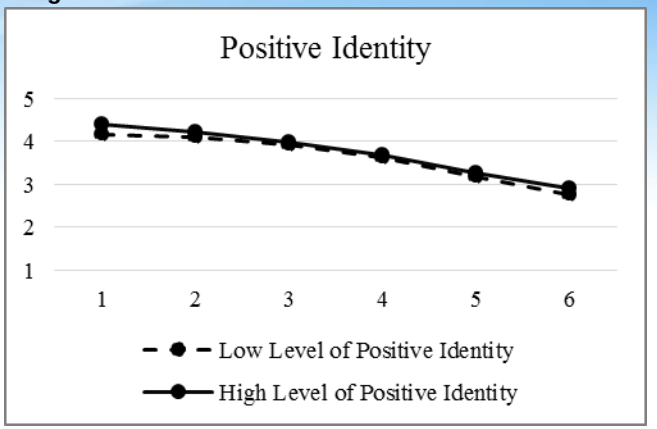


Fig.4

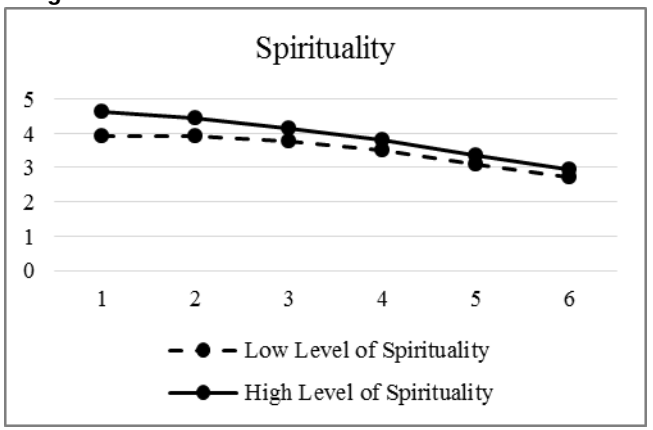
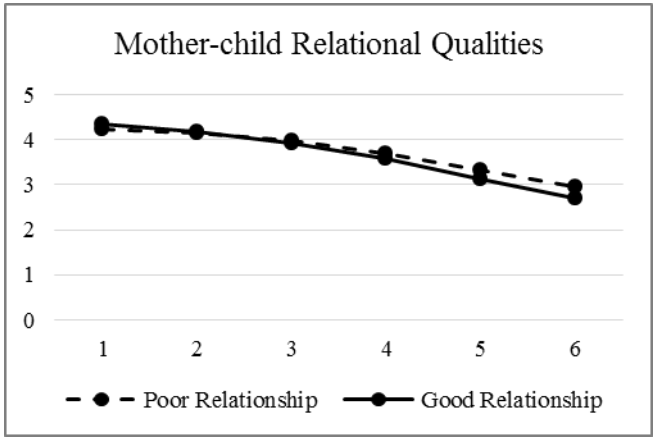


Fig.5



Results (Hopelessness: 1)

- **Correlations**: Socio-demographic factors, family attributes, positive youth development attributes, and family process were associated with hopelessness (Table 6)

Table 6 Correlations among Variables (Hopelessness)

Variables	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.
1. HL	1																
2. SHL	.451**	1															
3. THL	.404**	.536**	1														
4. FHL	.345**	.406**	.538**	1													
5. GHL	.337**	.410**	.512**	.584**	1												
6. QHL	.325**	.383**	.464**	.515**	.621**	1											
7. Age	.027**	-.006	.022**	.012	.003	-.029**	1										
8. Gender	-.064**	-.044**	-.069**	-.092**	-.106**	-.103**	-.030**	1									
9. Family Intactness	-.029**	-.054**	-.039**	-.031**	-.032**	-.047**	-.064**	-.008	1								
10. Economic Disadvantage	-.058**	-.008	-.016*	-.014	-.022**	-.004	-.020*	.067**	-.125**	1							
11. RE	-.375**	-.313**	-.286**	-.267**	-.267**	-.259**	.013	-.020*	.048**	-.002	1						
12. SC	-.292**	-.277**	-.231**	-.222**	-.234**	-.212**	.000	.067**	.062**	.017*	.479**	1					
13. PI	-.305**	-.263**	-.245**	-.247**	-.255**	-.271**	-.011	.079**	.063**	.013	.495**	.510**	1				
14. SP	-.469**	-.350**	-.331**	-.277**	-.284**	-.289**	-.038**	.041**	.086**	-.004	.533**	.454**	.514**	1			
15. Family Functioning	-.403**	-.318**	-.278**	-.231**	-.242**	-.248**	-.078**	.049**	.184**	-.003	.384**	.347**	.387**	.499**	1		
16. Father-child Relationship Qualities	-.330**	-.293**	-.262**	-.237**	-.220**	-.228**	-.053**	.015	.196**	-.033**	.322**	.286**	.354**	.413**	.611**	1	
17. Mother-child Relationship Qualities	-.345**	-.283**	-.243**	-.219**	-.211**	-.203**	-.083**	.070**	.110**	.032**	.337**	.281**	.334**	.410**	.600**	.484**	1

Results (Hopelessness: 2)

- **Model fit:**
  - **Unconditional model:** Quadratic model (Model 3) fitted the data better than the linear model.
  - Conditional model: Model 4 had the best model fit (Table 9 & 10)

- **Development trend**: Hopelessness **increased** across six waves and the increasing rate significantly slowed down (Fig. 6)

Table 9 Results of Unconditional Growth Models (Hopelessness)

			Model 1		Model 2		Model 3	
			Estimate	SE	Estimate	SE	Estimate	SE
Fixed effects								
Intercept		β_{0j}						
	Intercept	γ_{00}	2.775.***	.013	2.762***	.017	2.730***	.019
Linear Slope		β_{1j}						
	Time	γ_{10}			.005	.004	.048***	.014
Quadratic Slope		β_{2j}						
	Time^2	γ_{20}					-.009***	.003
Random effects								
Level 1 (within)								
	Residual	r_{ij}	.685***	.008	.600***	.008	.564***	.008
Level 2 (between)								
	Intercept	u_{0j}	.626***	.017	.801***	.028	.847***	.034
	Time	u_{1j}			.030***	.002	.197***	.020
	Time^2	u_{2j}					.005***	.001
Fit statistics								
Deviance			61346.789		60964.940		60817.793	
AIC			61352.789		60976.940		60837.793	
BIC			61376.754		61024.872		60917.679	
df			3		6		10	

***Note*: Model 1 = unconditional mean model; model 2 = unconditional linear growth model; model 3 = unconditional quadratic growth model.**
***** $p < .001$**

Table 10 Results of LMM Models with Level-2 Predictors (Hopelessness)

		Model 4	
		Estimate	SE
Fixed effects			
Intercept	β_{0j}		
Intercept	γ_{00}	2.727***	.309
Gender [a]	γ_{01}	-.002**	.016
Family Intactness	γ_{02}	.055*	.027
RE	γ_{03}	-.124 ***	.022
SC	γ_{04}	-.044*	.022
SP	γ_{05}	-.282***	.024
Family Functioning	γ_{06}	-.196***	.026
Father-child Relationship Qualities	γ_{07}	-.065**	.023
Mother-child Relationship Qualities	γ_{08}	-.079***	.023
Linear slope	β_{1j}		
Intercept	γ_{10}	-.231	.275
Gender [a]	γ_{11}	-.057	.018
Family Intactness	γ_{12}	-016	.024
RE	γ_{13}	.001	.020
SC	γ_{14}	-.018	.019
SP	γ_{15}	.095***	.021
Family Functioning	γ_{16}	.093***	.023
Father-child Relationship Qualities	γ_{17}	-.033	.020
Mother-child Relationship Qualities	γ_{18}	.006	.020
Quadratic slope	β_{2j}		
Intercept	γ_{20}	.068	.053
Gender [a]	γ_{21}	-.002	.003
Family Intactness	γ_{22}	.003	.005
RE	γ_{23}	.001	.004
SC	γ_{24}	.005	.004
SP	γ_{25}	-.013***	.004
Family Functioning	γ_{26}	-.015***	.004
Father-child Relationship Qualities	γ_{27}	.007	.004
Mother-child Relationship Qualities	γ_{28}	.002	.004
Random effects			
Level 1 (within)			
Residual	r_{ij}	.537	.009
Level 2 (between)			
Intercept	u_{0j}	.443	.025
Time	u_{1j}	.178	.020
Time^2	u_{2j}	.004	.001
Fit statistics			
Deviance		38789.197	
AIC		38875.197	
BIC		39201.723	
df		43	

***Note*: 1) Predictors that had insignificant effects in initial status, linear slope, and quadratic slope are not presented;**
2) [a] Male = 1, Female = -1. *** $p < .001$; ** $p < .01$, * $p < .05$

Results (Hopelessness: 3)

- **Significance of predictors**:

1. Gender, family intactness, resilience, psychosocial competence, father-child relational qualities, and mother-child relational qualities were significant in initial status, but not significant in linear and quadratic slopes (Table 10)
2. Spirituality was a significant predictor of initial status, linear (+), and quadratic slopes (-). Adolescents with lower spirituality attained higher hopelessness in the beginning. Yet adolescents with higher spirituality would increase hopelessness more. The change was first-drop-then-increase (Table 10 & Fig. 7)
3. Family functioning was significant in initial status, linear (+), and quadratic slopes (-). Adolescents with poorer family functioning attained higher hopelessness in the beginning. Yet adolescents with better family functioning would increase hopelessness faster. The change was first-drop-then-increase (Table 10 & Fig. 8)

Growth Curve (Hopelessness)

Fig.6 Growth Trajectory of the Overall Sample

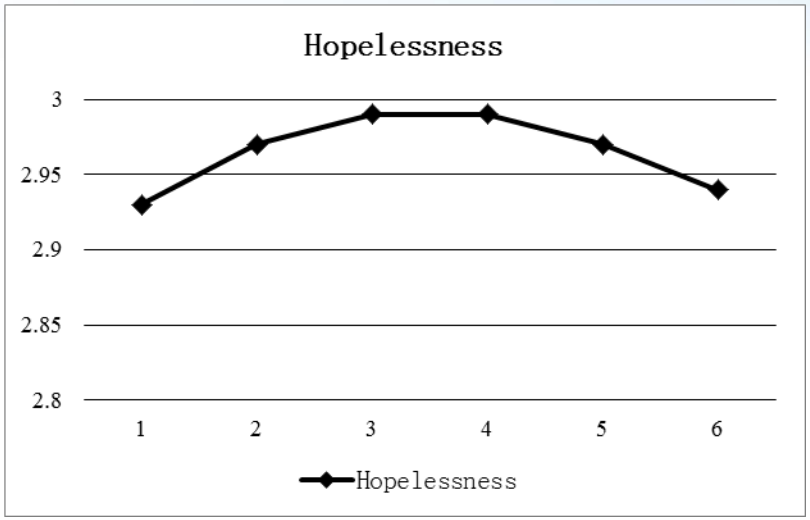


Fig.7

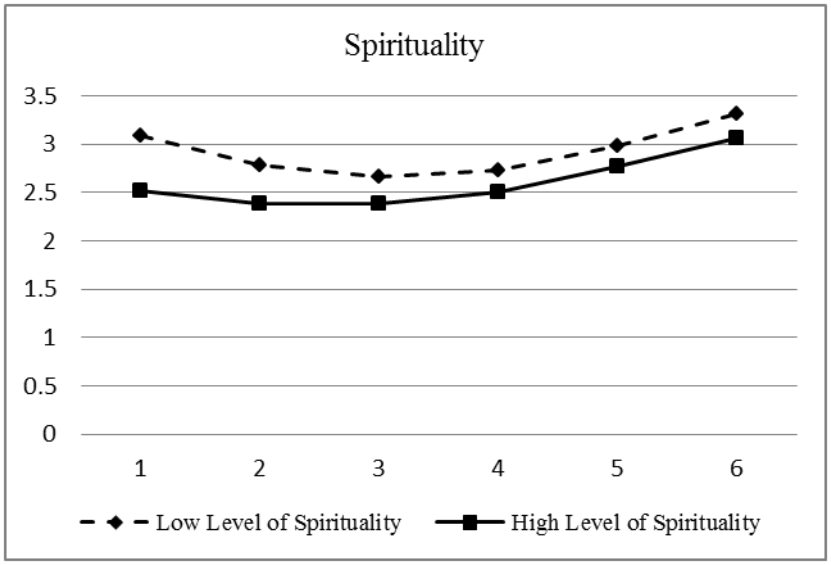
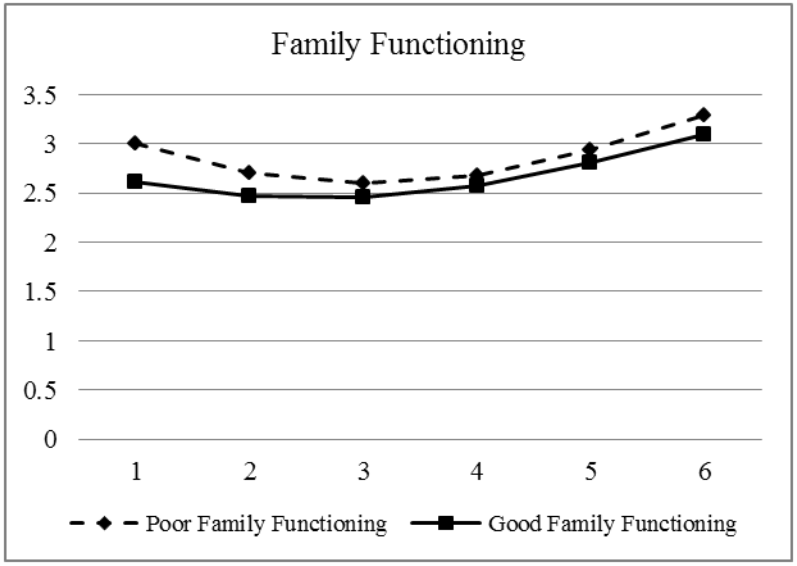


Fig.8



General Discussion

- Consistent with some previous literature, adolescents' life satisfaction exhibits a decreasing trend[8-10], while their hopelessness level is increasing[10,13]

- Adolescents' decreased life satisfaction and increased hopelessness could be explained by the confusions and developmental challenges they face during transitional process, notably the increase of studying pressure/future career decisions and problems engendered by peers or dating. [6,8,10,62]

- This study has developed an integrated perspective for measuring different levels of factors that associated with adolescent life satisfaction and hopelessness

- Some factors affect initial status (Grade 7), some affect the initial status and the change, even some affect the initial status, the change and the rate of change (Table 11)

Table 11 Significance of Factors

Factors	Life Satisfaction			Hopelessness		
	Initial Status	Linear Change	Quadratic Change	Initial Status	Linear Change	Quadratic Change
Family Functioning	√	x	x	√	√	√
Resilience	√	x	x	√	x	x
Psychosocial Competence	√	x	x	√	x	x
Father-child Relational Qualities	√	x	x	√	x	x
Gender	√	√	x	√	x	x
Family Intactness	x	x	x	√	x	x
Mother-child Relational Qualities	√	√	x	√	x	x
Positive Identity	√	√	√	x	x	x
Spirituality	√	√	√	√	√	√

Note: **"√"=significant; "X"=insignificant.**

- Males had faster decreasing life satisfaction than females, self-understanding (decline of over-optimistic image) and school life (females adapt better at project-based learning) would contribute to the change of life satisfaction

- Positive identity and spirituality could be protective factors for the development of life satisfaction, while spirituality and family functioning could be treated as protective factors for the development of hopelessness.

- Contrary to previous literature, this study found that good-mother child relationship showed a faster decrease of life satisfaction in linear change. This might be because maternal over-control or over-protection constrains adolescents' decision-making autonomy and limit their exposure to responsibilities and opportunities, which lead to their increased risk of maladjustment for late adolescence[63-65]. The impact may be more pronounced in Chinese families (helicopter parents)

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