臺灣社會學刊，2016年12月
第60期，頁55-98

研究論文

Developmental Self-Esteem Trajectories among Taiwanese Adolescents: Effects of Family and School Context

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收稿日期：2015/08/26，接受刊登：2016/04/06。

Taiwanese Journal of Sociology, December 2016, 60: 55-98

Developmental Self-Esteem Trajectories among Taiwanese Adolescents: Effects of Family and School Context

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Abstract

The resilience model and the storm and stress model make opposite predictions regarding self-esteem development patterns during adolescence, and empirical findings have been inconsistent. This study examines the self-esteem developmental process using data from a 2000-2007 longitudinal survey conducted in Taiwan. Piecewise linear growth curve analyses were applied to determine developmental self-esteem trajectories among respondents aged 13 to 20 (N=1,456). Results indicate a curvilinear pattern. The effect of parental support varied depending on adolescent stage. While the effect of perceived maternal support was more significant during early adolescence, perceived paternal support was more prominent in middle and late adolescence. Implications of the curvilinear pattern and variation in the influences of perceived parental support across stages are discussed.

Keywords: self-esteem, adolescent, developmental trajectory, family context, school context

家庭與學校脈絡對臺灣青少年自尊發展軌跡的影響

中文摘要

復原力模型與風雨困頓模型對青少年自尊成長的趨勢有相反的預測，但是實證研究的發現迄今卻未有定論。爲此，本研究使用臺灣青少年成長歷程研究於2000年至2007年間長期蒐集的追蹤調查資料，以分段線性成長曲線分析方法，試圖描繪臺灣青少年從13歲到20歲的自尊成長軌跡。研究結果顯示，臺灣青少年的自尊成長呈現非線性模式。知覺父母支持對青少年自尊發展的影響隨著不同時期而程度不同。知覺母親支持的影響在青少年早期的影響較大，知覺父親支持的影響則在青少年中期和晚期的影響較強。本文亦討論了臺灣青少年非線性自尊發展軌跡與知覺父母支持隨不同時期而變化的意涵。

關鍵詞：自尊、青少年、發展軌跡、家庭脈絡、學校脈絡

Self-image construction during adolescence is both challenging and critical to individual development. Although self-image formation starts in early childhood, significant changes in physical, mental, emotional, and social aspects during adolescence make self-image construction more difficult (Harter 1990). Erikson (1968) describes adolescence as a stage in which individuals strive to integrate multiple social roles (e.g., child, sibling, student, worker) into a self-image. Failure to navigate this transitional stage can result in role confusion, leading to one description of adolescence as a period of "storm and stress" (Hall 1904). According to Arnett's (1999) modified storm-and-stress view, even though some adolescents do not experience such turmoil, it is more likely to occur during adolescence than at any other life stage.

As the overall evaluation of one's own self-image, self-esteem is associated with adolescent psychological well-being (Rosenberg 1985), with low self-esteem often resulting in adverse health and behavioral outcomes. Researchers in Western societies have linked low self-esteem in adolescents to depression (Owens 1994), delinquent behaviors (Longmore et al. 2004), interpersonal problems (Kahle et al. 1980), and suicidal ideation (McGee et al. 2001). Similar findings for Taiwanese specifically mention anxiety (Chen and Chen 1998; Wong 1985) and depressive symptoms (Liu et al. 2003). Further, low self-esteem during adolescence can lead to negative consequences in adulthood. Using data collected in New Zealand, Trzesniewski et al. (2006) found that compared to adolescents with high self-esteem, respondents with low self-esteem had poorer mental and physical health, worse economic prospects, and higher levels of criminal behavior when they became adults.

There is a large body of research on developmental trajectories of self-

esteem among adolescents, but findings on self-esteem change patterns are inconsistent (Marsh 1989; Mullis et al. 1992), with data limitations and analytical methods identified as two major reasons. Most researchers have used cross-sectional data sets or have only examined group means, and their findings regarding individual growth curves are easily contaminated by cohort differences and masked heterogeneity in populations (Zimmerman et al. 1997). These results make it meaningful to use panel data and individual growth modeling techniques to examine self-esteem developmental trajectories among adolescents.

Since cognitive social psychologists and symbolic interactionists alike view self-image as a product of socialization (Rosenberg et al. 1995), researchers who study self-esteem developmental trajectories often look at social factors that affect the process. Numerous studies have documented the ways that family context (e.g., parenting behaviors, parent-child relationships, and family socioeconomic status) and school context factors (e.g., peer relationships, teacher-student interactions, academic performance, and nonacademic talents) affect adolescent self-esteem development (Colarossi and Eccles 2003; Wilkinson 2004). Some researchers have described differences in the relative impacts of family and school contexts on self-esteem development in early and late adolescence (DuBois et al. 1996, 1998; Greene and Way 2005). However, few efforts have been made to examine the impacts of variation in school and family factors across different stages of adolescence.

To address these gaps, this study uses within-individual growth trajectories of adolescent self-esteem to determine the effects of family and

school contexts during different adolescent stages. Six waves of longitudinal panel data from the Taiwan Youth Project (2000-2007) were used to perform piecewise linear growth curve analyses to examine the early-to-late adolescent self-esteem development process in a sample of Taiwanese youth, with a special emphasis on the effects of family and school contexts.

Background

Self-Esteem Development during Adolescence

Self-esteem is often described as an overall evaluation of one's own self-image. Rosenberg (1979) defines self-esteem as an individual's positive or negative attitude toward the self as a totality. According to self-enhancement theory (Swann 1987), all human beings have a desire to protect and enhance their feelings of self-worth, and frustration in self-esteem maintenance can result in psychological distress. Maslow (1970) defines self-esteem as a "prepotent" human need. Empirical findings indicate that while general or global self-esteem is strongly associated with measures of psychological well-being, specific types of self-esteem (e.g., academic) are much better predictors of certain behaviors and behavioral outcomes (Rosenberg et al. 1995).

As Hall (1904) observed over a century ago, adolescents usually face heightened challenges in the form of conflicts with parents, mood disruptions, and risky behaviors. Whether or not adolescents can successfully overcome these difficulties can substantially affect their self-esteem development processes. For this reason, developmentalist researchers have proposed two

competing models for predicting adolescent self-esteem growth trajectory patterns. According to the resilience model proposed by Zimmerman and Arunkumar (1994), self-esteem increases linearly during adolescence, with most adolescents capable of establishing self-confidence and self-acceptance by gradually overcoming challenges. In contrast, Offer and Offer's (1977) storm and stress model asserts that self-esteem stalls or declines during adolescence because individuals tend to be overwhelmed by the many challenges they face. Self-esteem development studies in Western societies have yielded mixed findings. While many suggest that self-esteem generally rises in a stable manner during adolescence (e.g., Demo 2001; Roeser and Eccles 1998), others show decline (e.g., Robins et al. 2002) or no change (e.g., Block and Robins 1993). Still others describe a curvilinear pattern of self-esteem development (Marsh 1989).

Some of these inconsistencies may be due to data or analytical method limitations. Many researchers have used cross-sectional data describing differences among individuals of different ages to infer changes over time, but the patterns that emerge might be due to cohort differences instead of individual growth trajectories (Singer and Willet 2003). Second, as suggested by Hirsh and Dubois (1991), even when longitudinal data are used, limiting analyses to changes in sample means can mask heterogeneity across individual developmental trajectories in a population. Suggested remedies for these problems include the use of panel data and individual growth modeling analyses. However, since panel data are much more difficult to collect and analyze than cross-sectional data, few efforts have been made to investigate within-individual changes in self-esteem during adolescence. There are some

exceptions: Baldwin and Hoffmann (2002) used seven years of panel data to examine within-individual changes in self-esteem from early adolescence to early adulthood, and found a curvilinear trajectory pattern. They also reported that individual self-esteem tended to decrease during early adolescence, and then increase in early adulthood.

Studies of self-esteem in Taiwanese adolescents, mostly conducted by educational psychologists, have identified certain determinants for high self-esteem. Chiang, Huang and Len (2000) found that "authoritative" (i.e., demanding and responsive) parenting is an accurate predictor of higher self-esteem among junior high school students. Wu and Chang (2000) observed a link between emotional connections with significant others and higher degrees of self-worth in teenagers. Chu (2002) identified six specific domains of self-concept as math/school, verbal, physical appearance, emotions, relations with parents, and relations with peers, with all of them making significant contributions to global self-esteem in adolescents. However, because of their use of cross-sectional data sets, these researchers failed to accurately depict self-esteem development trajectories, let alone clarify dynamic relationships between identified determinants and self-esteem. Consequently, the self-esteem developmental process among Taiwanese adolescents remains unclear. To address this gap, we investigated individual self-esteem growth trajectories as well as gender differences in change patterns among Taiwanese adolescents.

Contextual Determinants of Self-Esteem Development in Adolescents

According to Morris Rosenberg (1979), reflected appraisals and social comparisons are the two most important principles for explaining self-concept formation—that is, we define ourselves via appraisals we receive from others, and develop self-esteem by comparing our characteristics with those of others. Some studies indicate that adolescents who are forming their self-concepts tend to adhere to these principles selectively. They are most likely to value appraisals from and to compare their own characteristics with significant others (e.g., family members and friends), and to disvalue feedback from people whom they regard as unimportant (Demo 2001; Rosenberg et al.1995). Hence, interactions with people around them are especially important for adolescent self-esteem development. Since most daily activities of adolescents occur in family or school contexts, associations between risk factors within those contexts and self-esteem development have been investigated many times. The following is a brief review of some of the most important findings.

Family Context. Consistently strong associations have been reported between parental control/support and adolescent self-esteem, although results are mixed regarding the effects of parental control. Some researchers have found positive associations between parental control and self-esteem (Chiang, Huang, and Len 2000; Gecas and Schwalbe 1986), but others have suggested that higher levels of parental control may result in weaker feelings of self-competence (Amato 1989). In contrast, higher levels of parental support have consistently been associated with higher degrees of adolescent self-worth

(Ross and Broh 2000). Perceived strong support from parents has also been identified as a consistent predictor of high self-esteem in adolescence (Greene and Way 2005; Wilkinson 2004) and vice versa (Bagley et al. 2001).

Family socioeconomic status has also been found to positively affect adolescent self-esteem. Individuals from families with higher social positions are more likely to have higher self-evaluations than those from families in lower social positions (Demo and Savin-Williams 1983; Francis and Jones 1996; Rosenberg and Pearlin 1978). Although Wiltfang and Scarbecz (1990) found that variables such as school grades, group leadership, and peer relationships exert stronger effects than parental class on adolescent self-esteem, they also found that those variables simply mediate the impacts of parental social status. Huurre, Aro and Rahkonen (2003) used data from a sample of 2,091 Finnish individuals between the ages of 16 and 32 to investigate the effects of both parental and respondent social class on self-esteem, and found that individuals with blue-collar origins displayed lower levels of self-esteem from adolescence to adulthood compared to those with non-physical labor backgrounds. They also found that parental SES had both direct and indirect effects on early adult and adult psychological well-being in their sample.

School Context. Peer and teacher appraisals at school are important sources for enhancing adolescent self-evaluations. Perceived relationships with friends and peers have been described as consistent predictors of self-esteem and self-efficacy among adolescents (Wilkinson 2004; Wu and Chang 2000). As individuals enter adolescence, time spent with friends increases substantially, and time spent with parents declines (Levitt et al.

1993). Research indicates that during early adolescence, peer support exhibits stronger influences than parental support on self-esteem development (DuBois et al. 1996, 1998). Evidence also shows a positive association between teacher support/positive responses during class discussions and higher self-evaluation among teenaged students (Verkuyten and Thijs 2004; Wu and Chang 2000).

School environments also provide opportunities for adolescents to build self-esteem via self-attribution, with those having better academic performance tending to have higher self-esteem (Ross and Broh 2000). Researchers have also found that nonacademic activities provide alternative channels for students to develop self-esteem (Murtaugh 1988). Participation in sports and other nonacademic activities is also believed to positively affect adolescent self-esteem.

There is some evidence suggesting that the significance of family and school contexts varies during different stages of adolescence. In early adolescence, peer social support has been found to exert a stronger influence than family support on self-esteem (DuBois et al. 1996, 1998). In late adolescence, family experiences exert a stronger effect than school experience on changes in self-esteem (Greene and Way 2005). During early adolescence, children may become moody and prone to quarreling with their parents, and therefore become more likely to search for peer support (Arnett 1999) and to be influenced by peers (DuBois et al. 1998). Parent-child conflicts tend to decrease as children mature in middle adolescence, and parent-child relationships become more egalitarian in late adolescence, with parents acting more like adult friends who provide guidance as their children enter adulthood (Steinberg and Morris 2001). A small number of researchers have applied

longitudinal data to examine variation in the impacts of various contexts on self-esteem development across different stages of adolescence. In this study we will examine these changes and contextual effects over time.

According to Rosenberg (1979), social structure and social behavior characteristics in specific societies must be considered when studying the self-esteem developmental process. In addition to family and school contexts, macro structures can also influence individual experiences with self-concept development. Considering the characteristics of the current education system in Taiwan, the experiences of Taiwanese youth are very different from those of adolescents growing up in many Western societies. Most Taiwanese adolescents feel considerable pressure to get high scores on competitive entrance examinations to get into quality high schools and colleges. Accordingly, many Taiwan adolescents spend long hours studying and attending "cram schools" (Chang and Yi 2004; Wu et al. 2004). With less time for extracurricular activities and social bonding, they are less likely to obtain confidence from achievement other than schoolwork, and more likely to feel great pressure for academic achievement as a result (Wu et al. 2004). The data set used in the present study does not allow for direct measures of the impacts of Taiwan's education system on adolescent self-esteem development via regression models. Assuming that the pressure felt by adolescents is greatest in the years that immediately precede each of the two entrance examinations, we paid special attention to these two time periods when assessing self-esteem growth trajectories.

Methods

Data and Samples

This research uses data drawn from the Taiwan Youth Project (TYP), a panel study conducted by the Institute of Sociology, Academia Sinica, Taiwan. The research design focuses on how the interplay among family, school and community shape adolescent development. Since 2000 the project organizers have completed 11 waves of interviews. The original project sample included 2,800 seventh graders (first grade of junior high) and 2,800 ninth graders (last year of junior high), one parent per student, and student class headmasters. The junior high schools are located in the northern part of Taiwan, including Taipei City, Taipei County (now called New Taipei City), and Yi-Lan County.[1]

The focus of the present study is on the seventh grade students in the first wave, otherwise referred to as the J1 sample. The original sample size in 2000 was 2,690; during the eighth wave the sample size was 1,739, for an attrition rate of 35.6%. Due to our interest in examining the impacts of school context on self-esteem development from early to late adolescence, only respondents who attended vocational schools, junior colleges, or high schools were included in our statistical analyses. Those who did not continue their education after junior high school were omitted (about 3.8% of the original sample), as were respondents with missing values (usually less than

[1] Detailed information on the TYP sampling process can be found at http://www.typ.sinica.edu.tw/E/?q=node/15.

5% per variable). Final sample size was 1,456. Parental education levels[2] and household incomes[3] for those who were not included in our analyses due to attrition or missing values tended to be slightly lower than for those who were included.

Measures

The self-esteem outcome variable was measured by four items taken from the ten-item Rosenberg Self-Esteem Scale (Rosenberg 1979): 1) I take a positive attitude toward myself; 2) I am satisfied with myself; 3) I certainly feel useless at times; and 4) At times I think I am no good at all. All responses were measured using a four-point Likert scale, with summed responses serving as measures of global self-esteem. These four questions were asked during survey waves 1, 2, 3, 4, 6 and 8. Cronbach's alphas for each wave ranged from 0.63 to 0.76. Factor analysis results indicate that the four items reflected two factors, one shared by all four questions and the other distinguishing between the two positive and two negative statements. Although it remains inconclusive whether the second factor is merely a negligible artifact of item wording (Corwyn 2000; Marsh 1996; Tomas and Oliver 1999) or an actual indicator distinguishing between positive and negative self-esteem (Owens 1994; Sheasby, Barlow, Cullen, and Wright 2000), most researchers have

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[2] Means for father's education for the excluded and analyzed cases were 3.03 and 3.21, respectively, both at the senior high school/junior college level.

[3] Average monthly household incomes for the excluded and included cases were NTD 57,800 and 61,400, respectively.

used summed scores as a global self-esteem scale. To ensure question validity for the four items, we conducted a confirmatory factor analysis for a data set[4] containing the original Rosenberg scale. Results indicate factor loadings above 0.6 for all four questions (0.81, 0.86, 0.64 and 0.69). The correlation between the four-question scale and the ten-question scale is considered high (0.949), confirming the validity of our short-version scale. Self-esteem score distribution was symmetrical and suitable for the linear regression analyses.

The three family context factors that we looked at were *family socioeconomic status* (SES), *perceived parental control*, and *perceived parental support*. Family SES was measured during the first wave of the survey, and perceived parental control and perceived parental support were measured during the first and fifth waves. Perceived paternal and maternal behaviors were measured separately. Specific measures were as follows:

(1) Father's education and monthly household income served as indicators of respondent family SES.[5] Since the consideration of multicollinearity and father's education is more strongly associated than mother's education with children's self-esteem, we chose father's level of education to represent parental education.[6] The measure includes seven

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[4] The data set was derived from http://personality-testing.info/_rawdata/.

[5] Since father's occupation could only be recoded according to a five-level ordinal scale of occupational socioeconomic status (Huang 1998) and was not found to be significantly associated with adolescent's self-esteem development in any preliminary analyses, we decided to not include it as a measure of family SES in the HLM models due to parsimony concerns.

[6] Mother's education was not found to be significantly associated with adolescent self-

levels of educational attainment, from 1 = elementary school or below to 7 = graduate school. Monthly family income was measured in units of 10,000 New Taiwan Dollars (NTD). The influence of father's occupation on adolescent self-esteem was also tested for in the preliminary analysis and found to be non-significant. In consideration of statistical model parsimony, father's education was not included as a measure of family SES.

(2) Perceived parental control was measured during the first and fifth survey waves. Similar to using father's education to represent parental education, we used paternal responses to represent perceived parental control, as measured by two items: "Does your father know where you go everyday?" and "Does your father know who your companions are when you are not at home?" Responses were recorded according to a 5-point Likert scale (1 = never, 5 = always). Cronbach's alphas for father's control were 0.79 (first wave) and 0.77 (fifth).

(3) Perceived parental support was also measured during the first and fifth survey waves. Although strong correlations between paternal and maternal support were observed (r = 0.65 and 0.66 during the two waves, respectively), preliminary data suggested that including both variables significantly decreased model deviance. We therefore decided to adopt both parents' responses when performing model estimations.

Perceived parental support was measured by three items: "When you

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esteem development in any of our preliminary analyses. The effects of father's education and family income on self-esteem development became non-significant when controlling for mother's education in statistical models, suggesting a multicollinearity impact. Hence, mother's education was not included as a measure of family SES.

really need her/him, your mother/father will be there"; "Your mother/father understands what you think"; "Your mother/father often cares about your feelings or your problems." Responses were recorded according to a four-point scale (1 = never, 4 = always). Cronbach's alphas for paternal and maternal support were 0.80 and 0.78 for the first wave and 0.75 and 0.70 for the fifth wave, respectively. Results from a confirmatory factor analyses indicate factor loadings above 0.6 for each question on perceived parental support.

School context consists of four factors that have been found to be strongly associated with adolescent self-respect: *peer relations, perceived relations with teachers, academic performance*, and nonacademic talents. All four factors were measured during junior and senior high school.

(1) The *peer relations* measure is the number of classmate friends as reported by the respondents. During the first survey wave, adolescents were asked to describe the general number of classmates who were "nice to them" (1 = almost none, 5 = almost everyone). During the fifth wave, responses were collected at five levels: 1= 20% or less, 5=80% or more.

(2) *Perceived relations with teachers* reflects student satisfaction with their relationships with teachers. Responses were measured along a four-point scale from 1 = very unsatisfied to 4 = very satisfied. This question was asked during both the first (junior high) and fifth waves (senior high).

(3) *Academic performance* data were gathered during the first year of junior high school and the second year of vocational school, junior college, or senior high school. Grades were categorized as 5 = ranks in top five, 4 = ranks six to ten, 3 = ranks eleven to twenty, 2 = twenty-first to thirty, and 1 = below

thirty. During the fifth wave, grades were recorded along a range of 5 = top 20% to 1 = bottom 20%.

(4) During the first wave, *nonacademic activity participation* was measured by the number of nonacademic talents reported by junior high school students (0 to 5). No data were gathered during the fifth wave.

Acknowledging variation in school environment, we controlled for school type: senior high school, vocational high school, or junior college. Senior high school (52.1% of the respondents) served as the reference group. One dummy variable each was created for vocational high school and junior college. Also, in light of the large number of studies of gender differences in self-esteem development (Chubb, Fertman, and Ross 1997), respondent gender was controlled for in the regression analyses.

Analytical Strategies

To identify self-esteem growth trajectories for the sample and to examine contextual determinants, we used a latent growth curve analytical method that is frequently employed to depict within-individual changes over time. Our findings indicate a non-linear pattern over the seven-year period during which data were collected (Table 2). Mean self-esteem growth curves for the respondents are shown in Figure 1.

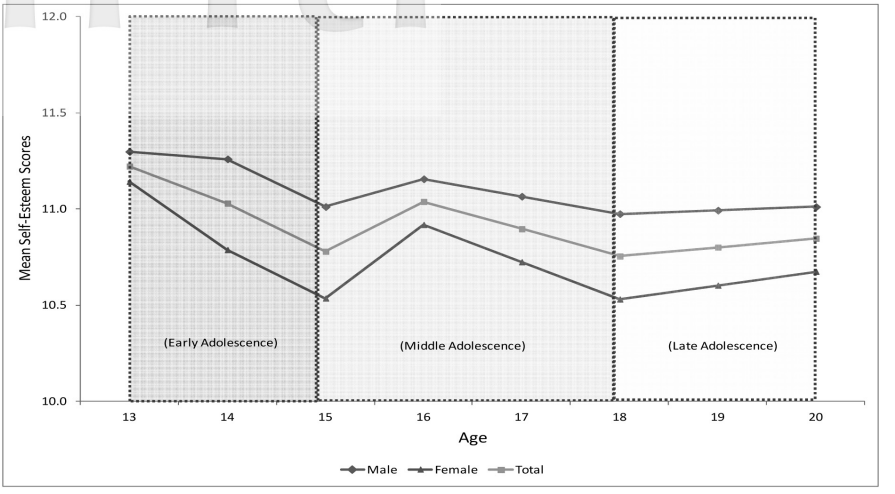

Figure 1 Mean self-esteem scores for the total sample, males, and females. Estimated average self-esteem scores for the fifth and seventh years (unobserved in the survey) were obtained by applying linear interpolations

The curvilinear characteristics of individual growth curves influenced our decision to apply piecewise linear growth modeling to estimate developmental trajectories. Based on observed average score patterns, we divided the seven-year survey period into four time sections: time 1, age 13 to 15; time 2, 15 and 16; time 3, 16 to 18; and time 4, 18 to 20. Time 1 corresponded to early adolescence, times 2 and 3 to middle adolescence, and time 4 to late adolescence. The individual growth model, also known as the level-1 model, was expressed as

$$Yij = [\pi 0i + \pi 1i\ a1ti + \pi 2i\ a2ti + \pi 3i\ a3ti + \pi 4i\ a4ti] + [\varepsilon ij]$$

where Yij denotes the self-esteem score for adolescent i at time j; $\pi 0i$ the initial status of the growth curve for adolescent i; and $\pi 1i$, $\pi 2i$, $\pi 3i$, and $\pi 4i$ each denoting specific self-esteem trajectory slopes within times 1, 2, 3 and

4, respectively. The a1ti to a4ti coded variables shown in Table 1 are for the piecewise regression. εij denotes a random measurement error.

Table 1 Coding scheme for the four-piece linear models used in this research

	Age								
	13	14	15	16	17	18	19	20	Interpretation ofπs :
a_{1t}	0	1	2	2	2	2	2	2	π_1 growth rate period 1
a_{2t}	0	0	0	1	1	1	1	1	π_2 growth rate period 2
a_{3t}	0	0	0	0	1	2	2	2	π_3 growth rate period 3
a_{4t}	0	0	0	0	0	0	1	2	π_4 growth rate period 4
									π_0 status at age 13

Piecewise linear growth modeling allows for the inclusion of factors within family and school contexts from early to late adolescence to predict self-esteem development at different time intervals. We used first wave survey measures to predict this development from early to middle adolescence, and fifth wave measures (as well as gender and father's education and monthly household income measured in the first wave of the survey) to predict development from late adolescence to early adulthood. To investigate the relative importance of the family and school factors to self-esteem development, we used z scores to standardize most predictors before adding them to the model. Non-dichotomous predictors were centered around the grand means when included in the model.

Level-2 submodels representing relationships between cross-individual differences in change trajectories and individual characteristics were expressed as

$$\pi 0i = \gamma 00 + \gamma 01x1 + \gamma 02\ x2 + \ldots + \gamma 0k\ xk + \zeta 0i$$

$$\pi 1i = \gamma 10 + \gamma 11x1 + \gamma 12\ x2 + \ldots + \gamma 1k\ xk + \zeta 1i$$
$$\pi 2i = \gamma 20 + \gamma 21x1 + \gamma 22\ x2 + \ldots + \gamma 2k\ xk + \zeta 2i$$
$$\pi 3i = \gamma 30 + \gamma 31x1 + \gamma 32\ x2 + \ldots + \gamma 3k\ xk + \zeta 3i$$
$$\pi 4i = \gamma 40 + \gamma 41x1 + \gamma 42\ x2 + \ldots + \gamma 4k\ xk + \zeta 4i$$

where γ denotes the model's fixed effects, x1 to xk the aforementioned contextual factors, and ζ the residual variance. Statistical analyses were performed using SPSS 14.0 and HLM 6.04. SPSS was used to calculate descriptive statistics and bivariate relationships between independent and dependent variables, and HLM to estimate piecewise linear growth models.

Results

Data on self-esteem and family and school contextual factors are shown in Table 2. Self-esteem scores from each wave suggest a curvilinear developmental trajectory from early to late adolescence. A comparison of family and school context data from waves 1 and 5 exhibits a certain degree of variation, especially increases in perceived paternal and maternal support, and a substantial decrease in the number of nice friends among classmates. However, differences in the wording of these items warrant caution when interpreting the decline in peer relations finding. Perceived paternal control, degree of satisfaction with class masters, and academic performance were roughly the same across the two waves.

Table 2 Data for self-esteem and family/school contextual factors for Taiwanese adolescents in the study sample (N = 1,456)

Variables	Mean	(S.D)
Dependent Variables		
Self-esteem at Wave 1	11.22	(2.18)
Self-esteem at Wave 2	11.03	(2.43)
Self-esteem at Wave 3	10.78	(2.39)
Self-esteem at Wave 4	11.04	(2.00)
Self-esteem at Wave 6	10.75	(2.21)
Self-esteem at Wave 8	10.85	(2.06)
Independent Variables at Wave 1	11.22	(2.18)
Male (%)	51.10	-
Father's education	3.21	(1.71)
Monthly household income (in NTD 10,000)	6.14	(3.45)
Father's control	3.52	(0.85)
Father's support	2.57	(0.83)
Mother's support	2.89	(0.81)
Proportion of nice friends in the class	3.90	(0.87)
Satisfactory relations with teachers	3.13	(0.71)
Academic Performance	3.29	(1.14)
Number of non-academic talents	1.32	(0.99)
Independent Variables at Wave 5		
Father's control	3.50	(1.18)
Father's support	3.34	(0.96)
Mother's support	3.79	(0.83)
Attaining vocational school	0.42	(0.49)
Attaining junior college	0.06	(0.23)
Attaining senior high school	0.52	(0.50)
Proportion of good friends in class	1.48	(0.96)
Degree of satisfaction with the class master	3.17	(0.70)
Academic Performance	3.33	(1.26)

Table 3 presents the latent growth curve analysis results. Within-individual changes in self-esteem are shown in the form of estimated intercepts for both initial status and growth rate at each time interval for Model 1. According to this baseline model, respondent self-esteem declined during

early adolescence (intercept = -0.223 at time 1), rose and fell during middle adolescence (intercepts = 0.246 and -0.160 at times 2 and 3, respectively), and increased slightly toward the end of late adolescence (intercept = 0.073 at time 4). Since the general trajectory displays a curvilinear pattern, neither the resilience model nor the storm and stress model alone were capable of fully predicting the process of self-esteem development in the sample.

Table 3 shows the effects of gender and two types of contextual factors on the shape of self-esteem development (Model 2). Since all family and school factors with the exception of post-junior high school type were standardized, it was possible to compare their relative influences on self-esteem development. In the model for initial status, the four family and school factors could be ranked by their relative influences on initial self-esteem status at age 13: relations with teachers (0.408), number of nice friends in class (0.316), non-academic talents (0.280), and maternal support (0.250). Directions of influence displayed by these variables were consistent with expectations. Note that the effects of paternal control, paternal support, and academic performance on self-esteem were non-significant. Whereas later analyses show that paternal support and academic performance impacted self-esteem developmental trajectories, paternal control had no significant effect on self-esteem development in the complete hierarchical multivariate linear model, suggesting that perceived parental support was more important than parental control in the self-esteem development process.

Table 3 Hierarchical Multivariate Linear Model

Fixed effects	Model 1	Model 2
Model for initial status		
Intercept	11.233**	11.086**
Male		0.287**
Father's education ^{z}		-0.090
Monthly household income ^{z}		0.045
Father's control at wave 1^{z}		-0.007
Father's support at wave 1^{z}		0.058
Mother's support at wave 1^{z}		0.250**
Nice friends in class^{z}		0.316**
Relations with teachers^{z}		0.408**
Academic performance at wave 1^{z}		0.064
Non-academic talents^{z}		0.280**
Model for growth rate at time 1		
Intercept	-0.223**	-0.290**
Male		0.132*
Father's education^{z}		0.076*
Monthly household income^{z}		0.006
Father's control at wave 1^{z}		0.003
Father's support at wave 1^{z}		-0.008
Mother's support at wave 1^{z}		0.014
Nice friends in class^{z}		-0.055†
Relations with teachers^{z}		-0.116**
Academic performance at wave 1^{z}		0.008
Non-academic talents ^{z}		-0.058†
Model for growth rate at time 2		
Intercept	0.246**	0.431**
Male		-0.296*
Father's education^{z}		-0.001
Monthly household income^{z}		-0.018
Father's control at wave 1^{z}		0.064
Father's support at wave 1^{z}		0.089
Mother's support at wave 1^{z}		-0.202**
Vocational school attendance		-0.106
Junior college attendance		0.164

Nice friends in class^z		-0.003
Relations with teachers^z		-0.029
Academic performance at wave 1^z		-0.104†
Non-academic talents^z		0.008
Model for growth rate at time 3		
Intercept	-0.160**	-0.239**
Male		0.059
Father's education ^{z}		-0.024
Monthly household income ^{z}		-0.035
Father's control at wave 5^z		0.015
Father's support at wave 5^z		0.075†
Mother's support at wave 5^z		-0.029
Vocational school attendance		0.132†
Junior college attendance		-0.042
Nice friends in class at wave 5^z		0.080**
Relations with teacher at wave 5^z		-0.008
Academic performance at wave 5^z		0.018
Model for growth rate at time 4		
Intercept	0.073*	0.071
Male		-0.040
Father's education ^{z}		-0.079*
Monthly household income ^{z}		0.024
Father's control at wave 5^z		-0.0001
Father's support at wave 5^z		-0.049
Mother's support at wave 5^z		0.030
Vocational school attendance		0.034
Junior college attendance		0.039
Nice friends in class at wave 5^z		-0.042
Relations with teacher at wave 5^z		0.059
Academic performance at wave 5^z		-0.067†
Deviance	33475.550	33127.706
Number of estimated parameters	7	61

†p<.10; * p<.05; ** p<.01;

z: variable standardized with z-score

The growth rate model at time 1 demonstrates associations between contextual factors and change in self-esteem during early adolescence (ages 13 to 15). According to their magnitudes of influence, the four significant family and school factors can be ranked as relations with teachers (-0.116), father's education (0.076), non-academic talents (-0.058), and number of nice friends in class (-0.055). The negative coefficient suggests a convergence of trajectories among individuals with different values for certain variables—specifically, a narrowing of the gap in self-esteem between initial status for respondents with different degrees of good teacher and peer relations, and respondents with different numbers of non-academic talents. In contrast, the positive coefficient of father's education suggests that differences between adolescents with more and less educated fathers emerged and increased during this period. In other words, father's education displayed a buffering effect on self-esteem decline during early adolescence.

Growth rate models at times 2 and 3 indicate associations between family/school contexts and self-esteem development patterns during middle adolescence (ages 15 to 18). At time 2, maternal support and academic performance exhibited significant effects on self-esteem change rates. The negative coefficient (-0.202) for maternal support suggests the gap in self-esteem between adolescents who perceive different degrees of decrease in maternal support between ages 15 and 16 decreases. Interpretations of the negative coefficient (-0.104) for academic performance differ. Noting that initial differences in self-esteem between adolescents with higher and lower grades were not significant at age 13, this negative coefficient suggests that respondents with higher grades in junior high tended to display slower self-

esteem growth rates after entering their subsequent schools. At time 3, the three contextual variables exhibiting significant buffering effects on declining self-esteem between ages 16 and 18 were vocational school attendance (0.132), good friends in class (0.080), and paternal support (0.075).

Finally, the growth rate model at time 4 demonstrates family and school contextual impacts on self-esteem development during late adolescence. The negative coefficient (-0.079) for father's education suggests that the previously divergent trajectories of self-esteem (i.e., growth rate model at time 1) converged during late adolescence. The negative coefficient (-0.067) for academic performance indicates that respondents with higher grades in high schools or vocational schools had relatively slow rates of self-esteem development during late adolescence. A possible explanation of this pattern is that students whose academic performances were strong during high school declined in their college classes. According to Rosenberg's (1979) principle of social comparison, losing advantageous standing in academic performance can be viewed as negative self-concept feedback.

Combined, the results suggest generally stronger effects of relational factors (i.e., better interactions with parents, friends, and school teachers) compared to the effects of father's education and better academic or non-academic performance on adolescent self-esteem development. Note that the impacts of parental support on self-esteem growth curves tended to vary at different stages. Therefore, in Table 4 we display data on self-esteem differences according to perceived paternal and maternal support. Table 4 values were calculated by subtracting estimated self-esteem values for individuals one standard deviation below the mean for certain relational

factors from those with one standard deviation above the mean for the same factors. The differences indicate the extent to which the examined factors influenced the respondents' self-esteem development at certain time points: the larger the difference, the greater the influence.

Data on the influences of family relational factors on the respondents' self-esteem development are shown in Table 4. The influence of perceived paternal support increased during middle and late adolescence (average differentials of 0.412 and 0.415, respectively). The non-significant regression coefficients for initial status and growth rate model at time 1 show barely distinguishable differences between adolescents with higher and lower perceived paternal support during early adolescence (Table 3). In contrast, the effects of perceived mother's support were much greater during early adolescence (average differential = 0.528). The impacts of perceived paternal support declined significantly between ages 15 (0.556) and 16 (0.152). After age 16, self-esteem differences between respondents reporting high and low degrees of maternal support became very small. Although a slight increase was noted in late adolescence, the coefficient at time 4 was statistically non-significant (Table 3). Differences in the relative importance of perceived paternal and maternal support at different stages of adolescence are better illustrated in Figures 2 and 3. Gaps between trajectories in each figure reflect the extent to which the examined factors influenced self-esteem development at certain time points—the wider the gap, the greater the influence. Differences in socialization processes require more investigation. Note that although the differences exhibited in Table 4 and Figures 2 and 3 are relatively small, they are statistically significant. The literature on life

course perspectives suggests that early differences in mental health tend to be amplified during later life stages (Mirowsky and Ross 2003). Regarding parenting, the importance of parental support in determining self-esteem in adolescents cannot be overemphasized.

Table 4 Self-esteem differentials* resulting from family relational factors

	Early Adolescence				Middle Adolescence				Late Adolescence			Total
	13	14	15	***Average***	16	17	18	***Average***	19	20	***Average***	
Father's support	0.116	0.100	0.084	***0.100***	0.262	0.412	0.562	***0.412***	0.464	0.366	***0.415***	0.296
Mother's support	0.500	0.528	0.556	***0.528***	0.152	0.094	0.036	***0.094***	0.096	0.156	***0.126***	0.265

* Self-esteem differences between individuals with contextual factor values one S.D. above and one S.D. below means.

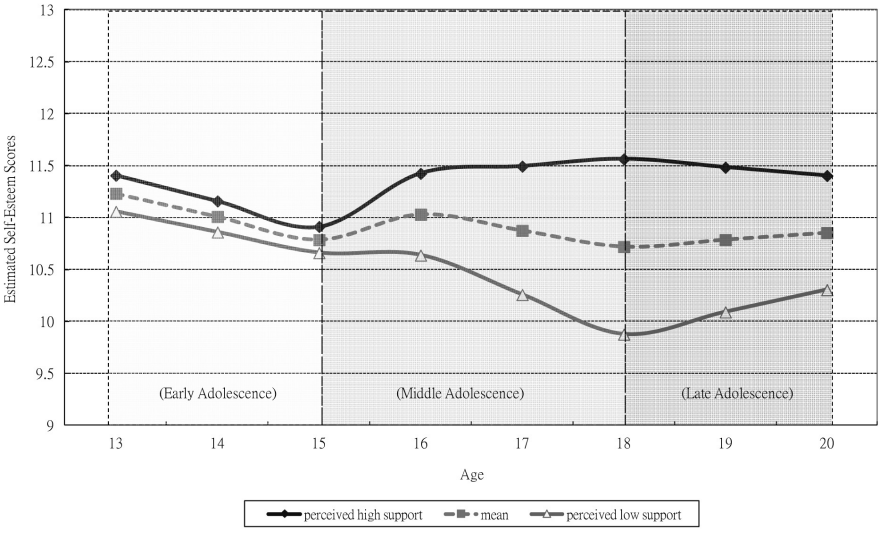

Figure 2 Estimated self-esteem scores for Taiwanese adolescents in the sample according to different degrees of paternal support

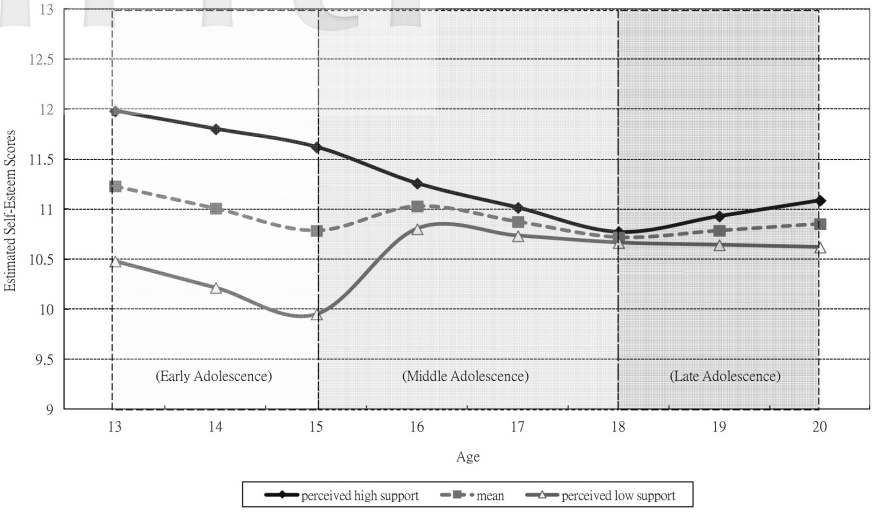

Figure 3 Estimated Self-Esteem Scores for Taiwanese Adolescents with Different Degree of Mother's Support

Discussion and Conclusion

The main finding of this study is the curvilinear characteristic of the self-esteem development trajectory among Taiwanese youth—a steep decline during early adolescence, a rise and fall during middle adolescence, and a slight increase in late adolescence. For the respondents, most family and school contexts exerted significant impacts on self-concept developmental processes. In terms of the magnitude of these impacts on self-esteem, the data indicate that relational factors such as perceived support from parents and relationships with peers and teachers were more influential than performance-related factors such as grades and non-academic talents. The relative influences of family relational factors varied across different stages, with maternal support having greater influence during early adolescence, and

paternal support having more influence during middle and late adolescence.

Both the resilience model and storm and stress model assume linear patterns in adolescent self-esteem trajectories. However, our findings reveal a curvilinear pattern, suggesting that neither of the two models are sufficient by themselves to explain self-esteem development among today's Taiwanese youth. A likely explanation is the education system in Taiwan. The two lowest trajectory points occurred at ages 15 and 18, which coincide with the time when most Taiwanese youth are preparing for and taking their high school or university entrance examinations. Our data indicate significant declines in self-esteem during the two years preceding each exam. This idea finds support in research on the adverse impacts of stress on adolescent self-esteem (see, for example, Tevendale et al. 1997; Youngs et al. 1990).

Although prior studies have consistently underscored the beneficial effects of parental support on the development of adolescent self-esteem (e.g., Greene and Way 2005; Wilkinson 2004), few efforts have been made to address differences in maternal and paternal roles during each stage of adolescence. Again, we found that maternal support was more important for children's self-esteem development during early adolescence, and paternal support was more important during middle and late adolescence. Based on existing psychosocial theories and empirical studies, we believe there are two potential explanations for this finding, one having to do with parent-child interaction conditions, the other tied to the correlation between gender-specific parental roles. First, fathers tend to have more opportunities to interact with their children during middle and late stages of adolescence. Paternal roles have long been described as "instrumental leadership" as opposed to

"expressive leadership" for maternal roles (Parsons 1956). According to conventional divisions of parental responsibilities, fathers have to work outside the home to provide for their families' material needs, while mothers stay at home to take care of their children's emotional needs (Giddens 1992). Although a growing number of married women have entered the labor market, traditional parental roles still remain in most societies, including Taiwan (Jamieson 1997; Wu 2008; Yi 2004). As major emotional caretakers, mothers are more likely to have close interactions with their children, especially when they are young (Yi 2004). According to conventional role expectations, fathers tend to be more like "playmates" to their young children when they have free time—a role that gradually diminishes as children enter adolescence (Pollack 1998). During early adolescence, parent-child relations tend to be tense and filled with conflict. As children become more mature in middle and late adolescence, they are more capable of establishing intimate and mutually supportive relationships with their parents (Aquilino 1997), increasing the possibility of their fathers becoming more like adult friends. This finding supports those reported by Chiu (2004), who used data from a focus group involving Taiwanese college students to determine that relationships with fathers became much closer as study participants entered the last stage of adolescence.

The other possible explanation involves the ways that conventional parental roles coincide with the developmental needs of youth at different stages of adolescence, resulting in variation in the influence of parental support. According to Polack (1998), while maternal roles are more closely related to protecting and inhibiting adventurous and risky behaviors,

paternal roles are more about encouragement of exploration and action. In Taiwan, most junior high school students devote themselves to schoolwork in preparation for their high school entrance exams (Yi et al. 2009). During this same period, they have to deal with the many issues that accompany the transition to puberty (Harter 1990), a transition that makes both physical and emotional demands on their mothers. Accordingly, maternal support is especially important for developing self-esteem during early adolescence. As schoolwork pressure goes through a transformation from junior high to another school type (Yi et al. 2009), children are given greater autonomy to explore the world outside of family and school contexts. During this stage, fathers are more likely to be regarded as experienced adult sources of guidance as their mid- and late-stage adolescent children encounter new challenges to their self-esteem. Another family factor influencing self-esteem at different stages of adolescence is socioeconomic background. As discussed in an earlier section, having a more highly educated father apparently served as a buffer against declining self-esteem during early adolescence in our sample, but it also appears to have mitigated increases in self-esteem during late adolescence. A possible reason is the higher expectations that highly educated fathers have for their children. Such aspirations can help younger children maintain stable levels of self-esteem, but they can act as stressors when achievement expectations are not met (Large and Marcussen 2000; Marcussen 2006). Further, children with highly educated parents are more likely to have higher expectations of their own performance, which can cause problems in terms of self-evaluation (Yang 2005).

We acknowledge several limitations to the data and our analyses. Due

to attrition, adolescents from families with lower socioeconomic levels are underrepresented, and proper means of addressing TYP attrition are not available. Accordingly, caution is required when attempting to generalize the study findings. Also, since the TYP sample was largely drawn from locations in northern Taiwan, efforts should be made to ensure that the findings apply to adolescents living in other parts of the country.

In summary, this study used panel data to uncover valuable findings on the developmental trajectories and contextual mechanisms underlying self-esteem development from early to late adolescence for a sample of Taiwanese youth. Our data reveal different influences of maternal and paternal roles on children's self-esteem during different stages of adolescence. One strength of this study is its focus on the influences of paternal support on children's psychological well-being. Based on a review of 514 pediatric psychology studies published in top psychology journals, Phares (2005) found that about one-half of them did not include fathers. Phares' work and our data indicate that more effort is required to examine the specific psychological influences of maternal and paternal roles on adolescent self-esteem. As more longitudinal data sets become available, investigations into adolescent self-esteem development should become more promising. In addition to family and schooling contexts, future researchers may wish to consider the roles of physical and relational factors such as body image, romantic relationships, and work experience on shaping self-esteem among Taiwanese and other East Asian adolescents.

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References

Amato, Paul R., 1989, "Family Processes and the Competence of Adolescents and Primary School Children." *Journal of Youth and Adolescence* 18: 39-53.

Arnett, Jeffrey J., 1999, "Adolescent Storm and Stress, Reconsidered." *American Psychologist* 54 (5): 317-26.

Aquilino, William S., 1997, "From Adolescent to Young Adult: A Prospective Study of Parent-Child Relations during the Transition to Adulthood." *Journal of Marriage and the Family* 59: 670-686.

Baldwin, Scott A. and John P. Hoffmann, 2002, "The Dynamics of Self-Esteem: A Growth-Curve Analysis." *Journal of Youth and Adolescence* 31(2): 101-113.

Bagley, Christopher, Lorne Bertrand, Floyd Bolitho and Kanka Mallick, 2001, "Discrepant Parent-Adolescent Views on Family Functioning: Predictors of Poorer Self-Esteem and Problems of Emotion and Behaviour in British and Canadian Adolescents." *Journal of Comparative Family Studies* 32: 393-404.

Block, Jack and Richard W. Robins, 1993, "A Longitudinal Study of Consistency and Change in Self-Esteem from Early Adolescence to Early Adulthood." *Child Development* 64: 909-923.

Chang, Ying-Hwa and Chin-Chun Yi, 2004, "Cram Schooling and Academic Achievement: A Remedial Strategy, A Proactive Strategy or just a Mimic Behavior." Paper presented at the Taiwan Youth Project Conference I at the Institute of Sociology, Academia Sinica, Nankang, Taipei, Taiwan,

June 23-24.

Chen, Bi-Wan and Yien-Ling Chen, 1998, "Anxiety, Self-esteem, Locus of Control, and Stress among Junior High School Students in Tainan City." *Students' Journal of National Tainan Teachers College* 19: 39-59 (in Chinese).

Chiang, I-Chyun, Ya-Wen Huang, and Hei-Shen Len, 2000, "A Study on Parents' Parenting Style, Family Support, Teachers' Teaching Practice, Student's Self-esteem and Health Related Behavior." *Journal of National Taipei Teachers College* 13: 149, 151-76 (in Chinese).

Chiu, Jane, 2004, "Father Image –How College Students Perceive Their Fathers?" *Journal of Education and Social Research* 6: 69-108.

Chu, Yu-Wei, 2002, "The Relationship between Domain-Specific Self-Concepts and Global Self-Esteem among Adolescents in Taiwan." *Bulletin of Educational Psychology* 33: 103-123.

Chubb, Nancy H., Carl I. Fertman, and Jennifer L. Ross, 1997, "Adolescent Self-Esteem and Locus of Control: A Longitudinal Study of Gender and Age Differences." *Adolescence* 32: 113-129.

Colarossi, Lisa G. and Jacquelynne S. Eccles, 2003, "Differential Effects of Support Providers on Adolescents' Mental Health." *Social Work Research* 27: 19-30.

Corwyn, Robert Flynn, 2000, "The Factor Structure of Global Self-Esteem among Adolescents and Adults." *Journal of Research in Personality* 34, 357-379.

Demo, David H., 2001, "Self-Esteem of Children and Adolescents." Pp. 135-156 in *Extending Self-Esteem Theory and Research*, edited by Timothy J.

Owens, Sheldon Stryker, and Norman Goodman. Cambridge: Cambridge University Press.

Demo, David H. and Ritch C. Savin-Williams, 1983, "Early Adolescent Self-Esteem as a Function of Social Class: Rosenberg and Pearlin Revisited." *The American Journal of Sociology* 88: 763-774.

DuBois, David L., Catherine A. Bull, Michelle D. Sherman, and Magie Roberts, 1998, "Self-Esteem and Adjustment in Early Adolescence: A Social-Contextual Perspective." *Journal of Youth and Adolescence* 27(5): 557-83.

DuBois, David L., Robert D. Felner, Stephen Brand, Ruby S.C. Phillips, and A. M. Lease, 1996, "Early Adolescent Self-Esteem: A Developmental – Ecological Framework and Assessment Strategy." *Journal of Research on Adolescence* 6(4): 543-579.

Erikson, Erik, 1968, *Identity Youth and Crisis*. NY: W.W. Norton & Company.

Francis, Leslie J. and Susan H. Jones, 1996, "Social Class and Self-Esteem." *Journal of Social Psychology* 136: 405-406.

Gecas, Viktor and Michael L. Schwalbe, 1986, "Parental Behavior and Adolescent Self-Esteem." *Journal of Marriage and the Family* 48: 37-46.

Giddens, Anthony, 1992, *The Transformation of Intimacy: Sexuality, Love and Eroticism in Modern Societies*. Polity Press, Cambridge.

Greene, Melissa L. and Niobe Way, 2005, "Self-Esteem Trajectories among Ethnic Minority Adolescents: A Growth Curve Analysis of The Patterns and Predictors of Change." *Journal of Research on Adolescence* 15(2):

151-178.

Hall, Granville S., 1904, *Adolescence: Its Psychology and Its Relation to Physiology, Anthropology, Sociology, Sex, Crime, Religion, and Education* (Vols. I & II). Englewood Cliffs. NJ: Prentice-Hall.

Harter, Susan, 1990, "Processes Underlying Adolescent Self-Concept Formation. From Childhood to Adolescence: A Transitional Period?" Pp. 205-239 in *From childhood to adolescence: a transitional period?*, edited by Raymond Montemayor, Gerald R. Adams, and Thomas P. Gullotta. Thousand Oaks, CA: Sage Publications.

Huurre, Taina, Hillevi Aro and Ossi Rahkonen, 2003, "Well-being and Health Behaviour by Parental Socioeconomic Status: A Follow-up Study of Adolescents Aged 16 until Age 32 Years." *Social Psychiatry and Psychiatric Epidemiology* 38: 249-255.

Huang Yi-Jhih, 1998, "Construction and Evaluation of the New Taiwanese Classification of Occupation." *Survey Research—Method and Application* 5: 5-32 (in Chinese).

Kahle, Lynn R., Richard A. Kulka, and David M. Kingel, 1980, "Low Adolescent Self-Esteem Leads to Multiple Interpersonal Problems: A Test of Social-Adaptation Theory." *Journal of Personality and Social Psychology* 39: 496-502.

Large, Michael D. and Kristen Marcussen, 2000, "Extending Identity Theory to Predict Differential Forms and Degrees of Psychological Distress." *Social Psychology Quarterly* 63(1): 49-59.

Levitt, Mary J., Nathalie Guacci-Franco, and Jerome L. Levitt, 1993, "Convoys of Social Support in Childhood and Early Adolescence:

Structure and Function." *Developmental Psychology* 29: 811-818.

Liu, Hsin-Yin, Shiow-Luan Tsay, Tsui-Er Lee, Wen-Yin Hsu, Chin-Ju Tsai, and Ien-Lan Wei, 2003, "The Preliminary Results of Weight Control Intervention on Adolescent Overweight Girls." *Formosan Journal of Medicine* 7: 157-165 (in Chinese).

Longmore, Monica A., Wendy D. Manning, Peggy C. Giordano, and Jennifer L. Rudolph, 2004, "Self-Esteem, Depressive Symptoms, and Adolescents' Sexual Onset." *Social Psychology Quarterly* 67: 279-295.

Marcussen, Kristen, 2006, "Identities, Self-Esteem, and Psychological Distress: An Application of Identity-Discrepancy Theory." *Sociological Perspectives* 49(1): 1-24.

Marsh, Herbert W., 1989, "Age and Sex Effects in Multiple Dimensions of Self-Concept: Preadolescence to Adulthood." *Journal of Educational Psychology* 81: 417-430.

____,1996, "Positive and Negative Global Self-Esteem: A Substantively Meaningful Distinction or Artifactors." *Journal of Personality and Social Psychology* 70: 810-819.

Maslow, Abraham H., 1970, *Motivation and Personality*. New York: Harper.

McGee, Rob, Sheila Williams, and Shyamala Nada-Raja, 2001, "Low Self-esteem and Hopelessness in Childhood and Suicidal Ideation in Early Adulthood." *Journal of Abnormal Child Psychology* 29: 281-291.

Mirowsky, John and Catherine E. Ross, 2003, *Social Causes of Psychological Distress* (2nd edition). NY: Aldine de Gruyter.

Mullis, Ann K., Ronald L. Mullis, and Dolores Normandin, 1992, "Cross-sectional and Longitudinal Comparisons of Adolescent Self-Esteem."

Adolescence 27: 51-61.

Murtaugh, Michael, 1988, "Achievement outside the Classroom: The Role of Nonacademic Activities in the Lives of High School Students." *Anthropology and Education Quarterly* 19: 382-395.

Offer, Daniel and Judith Baskin Offer, 1977, *From Teenage to Young Manhood*. New York, Basic Books.

Owens, Timothy J., 1994, "Two Dimensions of Self-Esteem: Reciprocal Effects of Positive Self-Worth and Self-Deprecation on Adolescent Problems." *American Sociological Review* 59: 391-407.

Parsons, Talcott and Robert Freed Bales, 1956, *Family Socialization and the Interaction Process*. Rouledge and Kegan Paul, London.

Phares, Vicky, Elena Lopez, Sherecce Fields, Dimitra Kamboukos, and Amy M. Duhig, 2005, "Are Fathers Involved In Pediatric Psychology Research And Treatment?" *Journal of Pediatric Psychology* 30: 631-643.

Pollack, William, 1998, *Real Boys: Rescuing Our Sons from the Myths of Boyhood*. New York: Random House.

Robins, Richard W., Kali H. Trzensniewski, Jessica L. Tracy, Samuel D. Gosling, and Jeff Potter, 2002, "Global Self-Esteem Across the Life Span." *Psychology and Aging* 17: 423-434.

Roeser, Robert W. and Jacquelynne S. Eccles, 1998, "Adolescents' Perceptions of Middle School: Relation to Longitudinal Changes in Academic and Psychological Adjustment." *Journal of Research on Adolescence* 8: 125-158.

Rosenberg, Morris, 1979, *Conceiving the Self*. New York: Basic Books.

____ ,1985, "Self-concept and Psychological Well-being in Adolescence." Pp. 55-121 in *The Development of Self*, edited by Robert L. Leahy. Orlando, FL: Academic Press.

Rosenberg, Morris and Leonard I. Pearlin, 1978, "Social Class and Self-Esteem among Children and Adults." *The American Journal of Sociology* 84: 53-77.

Rosenberg, Morris, Carmi Schooler, Carrie Schoenbach, and Florence Rosenberg, 1995, "Global Self-Esteem and Specific Self-Esteem: Different Concepts, Different Outcomes." *American Sociological Review* 60: 141-156.

Ross, Catherine E. and Beckett A. Broh, 2000, "The Roles of Self-Esteem and the Sense of Personal Control in the Academic Achievement Process." *Sociology of Education* 73: 270-284.

Sheasby, J. E., Barlow, J. H., Cullen, L. A., & Wright, C. C., 2000, "Psychometric Properties of the Rosenberg Self-Esteem Scale among People with Arthritis. *Psychological Reports* 86: 1139-1146.

Singer, Judith D. and John B. Willett, 2003, *Applied Longitudinal Data Analysis: Modeling Change and Event Occurrence*. New York: Oxford University Press.

Steinberg, Laurence and Amanda Sheffield Morris, 2001, "Adolescent Development." *Annual Review of Psychology* 52: 83-110.

Swann, William, 1987, "Identity Negotiation: Where Two Roads Meet." *Journal of Personality and Social Psychology* 53: 1038-1051.

Tevendale, Heather D., David L. Dubois, Cristy Lopez, and Shannon L. Prindiville, 1997, "Self-Esteem Stability and Early Adolescent

Adjustment: An Exploratory Study." *Journal of Early Adolescence* 17: 216-237.

Tomas, Jose M., and Amparo Oliver, 1999, "Rosenberg's Self-Esteem Scale: Two Factors or Method Effects." *Structural Equation Modeling* 6: 84-98.

Trzesniewski, Kali H., M. Brent Donnellan, Terrie E. Moffitt, Richard W. Robins, Richie Poulton, and Avshalom Caspi, 2006, "Low Self-Esteem during Adolescence Predicts Poor Health, Criminal behavior, and Limited Economic Prospects During Adulthood." *Developmental Psychology* 42: 381-390.

Verkuyten, Maykel and Jochem Thijs, 2004, "Global and Ethnic Self-Esteem in School Context: Minority and Majority Groups in the Motherlands Netherlands." *Social Indicators Research* 67: 253-281.

Wilkinson, Ross B., 2004, "The Role of Parental and Peer Attachment in the Psychological Health and Self-Esteem of Adolescents." *Journal of Youth and Adolescence* 33: 479-493.

Wiltfang, Gregory L. and Mark Scarbecz, 1990, "Social Class and Adolescents' Self-Esteem: Another Look." *Social Psychology Quarterly* 53: 174-183.

Wong, Shu-Yeng, 1985, "The Adolescent Self-esteem and Its Related Variables." *Journal of Education & Psychology* 8: 79-113 (in Chinese).

Wu, Chia Lang, 2008, "The Review and Analysis of Related Research on Parenting Stress In Taiwan." *Journal of General Education Tainan University of Technology* 7: 63-89.

Wu, Chyi-In, Man-Kit Lei, and Yeu-Sheng Hsieh, 2004, "Modeling

Development Trajectories of Adolescent Depressive Symptom across Junior High and High School." Paper presented at the Taiwan Youth Project Conference I at the Institute of Sociology, Academia Sinica, Nankang, Taipei, Taiwan, June 23-24.

Wu, Yi-Hsing and Ching-Yuan Chang, 2000, "The Relation among Adolescents' Perception of Their Relationships with Significant Others and Self-esteem and The Content Analysis of the Interviews." *Bulletin of Educational Psychology* 32: 15-39 (in Chinese).

Yang, Meng-Li, 2005, "The Value of Educational Achievement and Adolescents' Mental Health." *Formosa Journal of Mental Health* 2: 75-99 (in Chinese).

Yi, Chin-Chun, Chyi-in Wu, and Ying-Hwa Chang, 2009. "The Psychological Well-Being of Taiwanese Youth: School versus Family Context from Early to Late Adolescence." *International Sociology* 24(3): 397-429.

Yi, Yen-Ai, 2004. *Gender Analysis on Parenting Experience in the Families with Adolescents*. Unpublished master thesis, Graduate Institute of Gender Education, National Kaohsiung Normal University.

Youngs, George A. Jr., Richard Rathge, Ron Mullis, and Ann Mullis, 1990, "Adolescent Stress and Self-Esteem. " *Adolescence* 25: 333-341.

Zimmerman, Marc A. and Revathy Arunkumar, 1994, "Resiliency Research: Models, Issues, and Policy Implications." *Social Policy Report* 8: 1-18.

Zimmerman, Marc A., Laurel A. Copeland, Jean T. Shope, and T. E. Dielman, 1997, "A Longitudinal Study of Self-Esteem: Implications for Adolescent Development." *Journal of Youth and Adolescence* 26: 117-141.