DAILY LIFE STRESS AND ITS CORRELATES AMONG HIGH SCHOOL STUDENTS IN HUALIEN CITY

Yin-Ming Li and Lee-Lan Yen*

Adolescence is a period of physical, cognitive, social and psychosexual changes. These developmental tasks make adolescents particularly vulnerable to life stress. The purpose of this study was to assess high school students' perception of stress from daily events and to identify its associated factors. A total of 1,195 high school students were selected via stratified cluster sampling method from nine high schools. Data from 1,141 valid answers were analyzed. A self-administrated questionnaire was used to assess students' demographic characteristics, personal traits (self-acceptance, neurotic trait), social support and perceived daily life stress. From principal component analysis, school work, concern with prospects, parent-teen relationship and peer relationship were found to be the main sources of daily life stress perceived. Personalities with high neurotic trait or low self-acceptance, perceived low social support, Chinese Hans and study at regular high school were important related factors. Screening by personality trait and social support questionnaire is suggested to be a routine at school to find out the high risk individuals and give them assistance in coping with stress.

Key words: high school students, daily life stress, Hualien City

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Mortality and morbidity of worldwide adolescent populaton from communicable diseases have been decreasing dramatically during the past decades[1]. However, a new group of dangers such as vehicular injury, substance abuse, eating disorders and sexuality has emerged, referred to as the new or social morbidities. Although these conditions are not representative of classic medical illness, they have serious implications for adolescents and result in increased physical and mental health risks[2-5]. Adolescence is characterized by rapid physical changes associated with puberty, the development of logical thinking and the emergence of new social cognitive abilities. All may occur with the alteration in peer network, role expectation, transition in schooling and changes in family relationships[5-8]. The physical, cognitive, social and psychosexual changes sometimes are tough, or even stressful to adolescents. Stressful life events and development changes have been studied as precursors of physical or psychosocial disturbance, resulting in disorders in personal health and psychological function[6-14]. Stressful life was proposed as a risk factor for risk taking behaviors such as cigarette smoking, problem drinking, delinquency, unintentional pregnancy or unsafe driving[15]. Although the direction of causality is not clear, there are very strong linkages between exposure to stress and multiple problems in adolescence. Personality and social support are intervening and dependent variables in models of stress and mental health, or principal factors in adolescent risk-taking behaviors[15,16].

In Taiwan, injuries, suicide and homicide were the the first, second and fourth leading causes of death for adolescents aged 15-19[1], accounting for 75.5% in 1994. Of greatest concern is that those may be preventable. In Hualien County, the proportions of death from injuries(72.1%), homicide(4.76%) and suicide (3.9%)[17] were more serious in adolescents and young adults aged 15-24. The birth rate among

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adolescents (9.8%) was much higher than that of Taiwan District(5.5%)[18]. Substance abuse or careless driving behavior were found not uncommon among high school students in Hualien City[19-21]. Are the adolescents there at higher risk of stress and related health problems? The purpose of this study was to assess: (1). the construct of daily life stress perceived and its relationship with personal characteristics among high school students in Hualien City; (2). which factors significantly associated with daily life stress perceived; and (3). who was vulnerable to daily life stress.

MATERIALS AND METHODS

Instruments

A self-administered questionnaire was used to assess students' demographic characteristics, personality (self-acceptance, neurotic trait), social support and stress perceived from daily events. Instruments used in this study were developed by experts of psychiatry and behavioral science. Good validity and reliabiliy was found in a previous study at Taipei City in 1990 [13,14] among ninth graders. Since grade school pupils are different, we modified some questions of the scale of stress and conducted a pretest with 43 high school students in Hualien City. The scale of "neurotic trait" consists of 10 items, with "yes" or "no" responses. The answers of "yes" were summed to yield a total score (ranging from 0-10) and its Cronbach's α-coefficient was 0.64. The scale of "self-acceptance" included 7 questions, answers rating: 0= "not agree", 1= "not sure" and 2= "agree". Scores of the scale range from 0-14 and its Cronbach's α-coefficient was 0.73. Support perceived from family members, teachers and friends was measured by statements as a 5-point scale. The support scores of these three sources were constructed by summation of the following ratings of separate items: 1= "very unsatisfied", 2= "unsatisfied", 3= "okay", 4= "satisfied", 5= "very satisfied". The Cronbach's α-coefficient of Social Support Scale was 0.86 with scores ranging from 15 to 75. The scale of perceived stress from daily events (PSDE) consisted of 38 items, regarding how often the individual had stressful feelings in the previous week. The ratings of separated items were: 0= "never", 1= "1-2 times", 2= "3-4 times", 3= "5-6 times" and 4= "daily". The Cronbach's α-coefficient of PSDE is 0.91, with scores ranging from 0-152.

Data collection and analysis

One class of students was sampled randomly from each grade of nine senior high schools. A total of 27 classes with 1,195 students were sampled. All were asked to fill in the questionnaire in classrooms in December, 1994. During class administration, a researcher attended the classroom to supervise students answering the questionnaire.

Analysis was conducted witih the SAS system for personal computer[22]. One item was removed for its correlation coefficient smaller than 0.3 to the total score and 37 items used in the final stress scale. Principle component analysis was employed for getting simplified and meaningful structures of perceived stress. Logistic regression analysis was conducted, with personal characteristics as independent variables. Total score and different dimensions of the stress score were divided into two groups by their medium and were used as dependent variables in different logistic regression models. Percentages of individuals whose stress score greater than the average were presented to be high-risk. Correlation coefficients and t-tests were also used in data analysis.

RESULTS

Background characteristics of the respondents

Only 1141 valid questionnaires, 588 (51.5%) male and 553 (48.5%) female respondents results were analyzed. Twenty percent of respondents were formosan aborigines. Distribution in grades was rather even (grade one 34.8%, grade two 32.3% and grade three 31.7%). The age distribution 38.9% were 17, 31.1% were 16, 17.6% were 15 and 7.2% were 18 or older, with mean age of 16.4 ($\pm$ 0.9). About 70.6 % of respondents were studing at vocational high school and 50.2 % had an above average school performance. Mean scores of personality scales were: self-acceptance 9.4 (mode 9 and medium 10), neurotic trait 5.2 (both mode and medium were 5) and perceived social support 38.4 (both mode and medium were 39).

Perceived stress from daily life among different individuals

The mean score of PSED was 41.1(mode 34, and medium 39) for all respondents. There were significant differences (t-test $p<0.01$) between Chinese Hans and formosan aborigines (mean scores 42.2 vs 36.5); regular school and vocational school (mean scores 43.6 vs 39.8); low and high self-acceptance (mean scores 46.3 vs 36.0); high and low neurotic trait (mean scores 47.6 vs 35.6); low and high social support (mean scores 45.1 vs 36.7). However, there was no significant difference between male and female, or high and low school performance.

Answers on each item are also presented in Table 1. About 5.2% reported that they have difficulty in lessons; 12.8% worry they cannot be admitted to desired colleges and 8.6% worry that they cannot get a full time job after graduation. Half of the students have the idea of running away from home and more than 70% of them think that their parents do not understand them. More than half of the students have uneasy relationships with peer of the opposite sex.

Structure of perceived stress from daily life

Nine factors with eigen values larger than 1.0, accounting for 42.01% of the total variance, were found in principle component analysis. The largest three eigenvalues were 8.9, 2.7 and 1.7. On scree test, the first three factors were retained. This 3-factor solution was then applied in a further principal axis factor analysis with varimax rotation for interpretation. Table 1 shows the factorial structure from this analysis with items of significant loading (>0.5) on each of the factors. All the items retained were found to have high loads only on a single factor. The three factors were defined as follows: school work and concern with prospects (Factor 1), parent-teen relationship (Factor 2) and peer relationship (Factor 3). Pearson correlation coefficients of the factor scores were: 0.51 between factor 1 and 2; 0.61 between factor 1 and 3; and 0.45 between factor 1 and factor 3. It was noted that school work and concern with prospects were the main sources of stress among high school students. About 90% of respondents answered with some kind of negative thinking about school work or prospects. In the aspects of parent-teen relationship and peer relationship, four out of ten respondents reported with some kind of negative feeling.

Odds and relationships of stress and personal characteristics

Relative risk of factors associated with different sources of stress and total stress score were assessd with logistic regression (Table 2). Respondents who were more likely to perceive stress from school work and concern with prospects were the ones with high neurotic trait (O. R.=2.55, C. I.=1.95-3.33); studying in regular school (O.R.=1.78, C. I.=1.33-2.39); with low self-acceptance (O. R.=1.40, C. I.=1.07-1.83); and Chinese Hans (O. R.=1.79, C. I.=1.27-2.53). Respondents who perceived low social support were at greatest risk (O. R.=2.30 C. I.= 1.76-3.00) to be stressed from parent-teen relationship. The ones with high neurotic trait (O. R. =2.20 C. I.=1.68-2.85), low self-acceptance (O. R.=1.65 C. I.=1.26-2.16) and those studing at regular school (O. R..=1.45 C. I.=1.08-1.95) were also high risk groups. Low self-acceptance (O. R.=2.23 C. I.=1.70-2.93) and high neurotic trait (O. R.=2.28 C. I.=1.74-2.99) were important factors associated with stress from peer relationship.

Percentages of individuals with significant risk characteristics associated with high perceived stress were presented to the most prevalent (Table 3). High neurotic trait and low self-acceptance were most common personalities vulnerable to stress. Half of them were found with high stress score in all dimensions. Social support was also significant in parent-teen or peer relationship and one in two of low social support perceived was with high stress score. About 45.1 % Chinese Hans and 29.8 % formosan aborigines perceived high stress from daily life. Pearson correlation coefficient between low self-acceptance and peer relationship was the highest (-0.44), while parent-teen relationship and neurotic trait or self-acceptance were the lowest (0.28 and -0.28). Neurotic trait and school work or peer relationship presented no great difference (0.37 and 0.38 respectively). All correlation analyses were statistically significant ($P<0.001$).

DISCUSSION

Previous studies[8,11-13] suggested that

Table 1. Factorial structure of the perceived stress after varimax rotation of the 3-factors solution and percentages of answers[a]

Factorial Structure	Items contents (factor loading)	never %	1-2 times %	3-4 times %	5-6 times %	daily %	no. of cases
Factor 1: School work and concern about prospects	I feel difficulty in my school work (0.66)	19.1	53.6	17.5	4.5	5.2	1124
	I worry that I can't be admitted to my desired college (0.65)	11.3	32.5	33.5	9.9	12.8	1125
	I feel competition is very keen at school (0.64)	22.7	41.3	23.4	5.5	7.0	1122
	I have difficulty in some subjects (0.64)	10.5	38.1	29.8	7.6	14.0	1112
	I am anxious that I can't meet my parents' expectations (0.59)	18.4	42.3	24.8	5.9	8.6	1128
	I am afraid of examinations (0.58)	54.1	29.8	10.0	3.1	3.0	1113
	I worry I won't be able to fine a job after graduation (0.56)	19.4	43.4	22.5	6.1	8.6	1055
Factor 2: Parent-teen relationship	I think my parents do not understand me (0.75)	25.1	44.8	17.8	4.9	7.4	1123
	I want to run away from home (0.70)	46.6	35.4	10.4	2.6	5.0	1131
	I feel my family is not in harmony (0.68)	50.6	36.2	7.7	2.5	2.9	1131
	I don't get along well with my parents because of different views (0.65)	25.2	54.9	15.2	3.0	1.6	1122
	I have been blamed or critized by my parents (0.64)	21.0	58.9	14.2	3.5	2.5	1126
	I feel my parents dislike me (0.60)	62.7	23.8	8.4	1.7	3.5	1122
Factor 3: Peer relationship	I feel others don't like being with me (0.64)	41.1	47.3	6.7	2.0	2.9	1126
	I am uneasy when I am with friends of the opposite sex (0.62)	35.9	43.8	14.6	2.1	3.6	1120
	I dare not talk to classmate of the opposite sex (0.60)	42.9	37.7	11.8	4.1	3.6	1122
	I can't have close friends (0.51)	34.1	38.0	18.1	3.9	6.0	1124
	I want to know friends of the opposite sex, but I am afraid of being teased (0.49)	63.0	26.2	6.0	2.2	2.7	1088

a: frequency of negative emotions experienced in the previous week

Table 2. Relative risks of different factors associated with stress

Variables		School work and concern about prospects		Parent-teen relationship		Peer relationship		Over all Stressors	
		O. R.	95% C. I.	O. R.	95% C. I.	O. R.	95% C. I.	O. R.	95% C. I.
• Gender	female/male	1.14	0.87-1.32	1.21	0.92-1.60	1.07	0.81-1.41	1.07	0.81-1.41
• Grade	two/one	1.07	0.78-1.47	0.91	0.66-1.26	1.11	0.80-1.53	0.90	0.65-1.25
	three/one	1.23	0.88-1.71	0.99	0.73-1.27	1.15	0.83-1.61	1.09	0.78-1.51
• Ethnicity	Hans/aborigines	1.79	1.27-2.53*	1.35	0.96-1.90	1.64	1.17-2.30*	1.85	1.30-2.63*
• School	regular/vocational	1.78	1.33-2.39*	1.45	1.08-1.95*	1.43	1.07-1.93*	1.80	1.34-2.40*
• School performance	low/high	1.22	0.92-1.62	1.14	0.86-1.51	1.03	0.78-1.37	1.31	0.99-1.74
• Self-acceptance	low/high	1.40	1.07-1.83*	1.65	1.26-2.16*	2.23	1.70-2.93*	1.59	1.21-2.09*
• Neurotic trait	high/low	2.55	1.95-3.33*	2.20	1.68-2.85*	2.28	1.74-2.99*	2.26	1.72-2.96*
• Perceived support	low/high	1.21	0.93-1.60	2.30	1.76-3.00*	1.11	0.85-1.45	1.45	1.10-1.89*

O. R.: adjusted odd ratio; C. I.: confident interval, *: P<0.05

Table 3. Percentages of individuals with high stress

Variables	Group	School work and concern about prospect (≥ 23)[b]	Parent-child relationship (≥ 8)[b]	Peer relationship (≥ 7)[b]	Over all stressors (≥ 39)[b]	N
Ethnicity	aborigines	33.8	—	43.9	29.8	228
	Hans	50.1	—	58.1	45.1	884
School type	vocational	42.4	—	—	37.8	806
	regular	56.7	—	—	51.8	335
School performance (0-100)	≥ 70	—	48.7	—	—	573
	<70	—	52.3	—	—	470
Self-acceptance (0-14)	high (≥ 9.44)	41.1	40.6	44.5	34.2	564
	low (<9.44)	52.0	60.0	65.0	49.2	577
Neurotic trait (0-10)	low (≤ 5.20)	35.0	40.0	43.3	31.5	612
	high (>5.20)	59.4	62.4	68.2	53.7	529
Perceived support (15-75)	high (≥ 38.41)	—	37.4	50.2	34.8	532
	low (<38.41)	—	61.7	58.9	47.9	609

b: medium score of stress; —: data of the insignificant characteristics was not presented

females are more burdened with stressors. In our sample, female gender was also found to be a higher risk in three domains of stress; however, these were not statistically significant. There were no grades difference in daily life stress. We suggested further studies on stress of adolescents to reassess the difference between gender or grades. Aboriginal adolescents more commonly had risky behaviors than did Hans[20], but their perceived stress was lower than that in Hans. It raised two questions: Does it imply adolescents face other stress than school work, parent-teen relations or peer relationships? What causes them to take risks?

Adolescents at regular high school had higher prevalence of perceived stress from school work and prospects than those of vocational school (56.7% vs 42.4%). It was comparable with the Report on the Youth's Status Survey (39.6% vs 26.6%)[23]. Regular high school students are shortly going to attend the entrance examination, so that they perceived stress mainly from school work and prospects should be reasonable. The entrance examination may really be a stressful event for them. The prevalence of difficulty in school work among senior high school graders was 45.1% in Taiwan District[23]. However, in our study about 81.9% reported some difficulty in school work and 89.7 % worried that they could not be admitted to desired college and 81.6% worried that they could not find a job after graduation. Does it mean that adolescents in Hualien City worry more about their future? How do they cope with the stress? A previous study[24] found that stress is one of the important predictors of psychosomatic symptoms in adolescents. Studies of psychosomatic symptoms among Hans and regular high school students is of great worth. Efforts to reinforce their confidence should be most crucial.

The main source of stress for ninth-graders in Taipei City was poor parent-child relationship[14]. However, in our study the main stress came from school work and concern about prospects. This difference may be due to the different developmental stage. Ninth-graders are usually 14 years old. Developmentally, adolescents of early stage (10-14 years) are involved in establishing themselves as independent from their parents and adapting to pubertal changes. The mean age of our sample was 16.1 years and about 45% were aged 17 or older. Middle adolescence (age 14-17) is the time involved in establishing self-identity and is strongly influenced by the peer group. In late adolescence (age 17 to 21), however, the individual is primarily future-oriented and developing intimacy with a significant other individual[7]. Therefore, the priority of concern should be different in senior or junior high school students.

The stress from the parent-teen relationship includes the following: parents' lack of understanding; disharmonious family and the temptation to run away from home. There were no differences here between our high school students or the ninth graders[14], since about 70 % have the feeling of parents not understanding them, and 53.4% had the idea of running away from home. Prevalences of individuals with stress from family ranged from 24.2% to 47.5%, which is higher than the Youth' s Status Survey (23.2%)[23]. According to a cross-cultural study, Asian students reported higher levels of parental expectations and lower levels of parental satisfaction concerning academic achievement than American students[24]. Family acceptance is an important predictor of adjustment in young adolescents[25]. It is imperative that both parents and adolescents should learn how to communicate with each other. A counselling program designed and implemented by social workers and schools should be an effective way to help parent and teens to communicate or set appropriate and realistic expectations for their own children.

Adolescents always seek help from their peers when they have difficulties[23]. In our study, however, 66% of respondents reported they had no faithful friends and 65% were uneasy with the opposite sex. It will be tougher if someone cannot talk to anyone when in need, so school health workers should launch activities to help them learn how to get along well with others, especially the opposite sex.

Personalities with high neurotic trait, low self-acceptance and low social support were important predictors of perceived stress. Therefore, we suggested that students at junior or senior high school should routinely fill questionnaires of personality traits and social support perceived. Students at risk can receive more intensive supervision, be counselled or referred. School should be an optimal setting for screening high risk adolescents, assessing stress coping skills and delivering related training.

In conclusion, high school students in Hualien City did perceive stress from daily life. School work, family adaptation and peer relationships were the main sources of stress. Individuals with high neurotic trait, Formosan Hans, regular high school students, perceived low social support or self-acceptance were vulnerable to stress. Screening for the high risk students and launching programs or activity for counseling the adolescents or parents is essential.

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REFERENCES

1. Taiwan Provincial Maternal and Child Health Institute: Statistics relating to maternal and child health in Taiwan, Taichung: 64-65, 1995.(Chinese)
2. Blum R: Contemporary threats to adolescent health in the United States. J Am Med Asso **257**: 3390-3394, 1987.
3. Dougherty D, Eden J, Kemp KB, Metcalf K, Rowe K, Ruby G, Strobel P, Solarz A: Adolescent health: A report to U.S. congress. J Sch health **62**: 167-174, 1992.
4. Williams CL, Wynder EL: A child health report card:1992. Prev Med **22**: 604-628, 1993.
5. Rickert VI, Jay MS, Gottieb AA: Adolescent wellness-facilitating compliance in social morbidities. Med Clin North Am **74**: 1135-1148, 1990.
6. Smetana JG, Yau J, Restrepo A, Braeges JC : Conflict and adaptation in adolescence: adolescent-parent conflict. In: Adolescent stress causes and consequences, (Collten ME, Gore S eds.), Aldine De Gruyter, New York, 1st ed.: 43-65, 1991.
7. Egan J: The life cycle. In:The behavioral sciences in psychiatry (Wiener JM, Brreslin NA eds.), William & Wilkins, Philadephia, 3rd ed.: 135-145, 1995.
8. Wells VE, Deykin EY, Klerman GL: Risk factors for depression in adolescence. Pyschiatric Developments **3**: 83-108, 1985.
9. Vega WA, Zimmerman RS, Warheit GJ, Apospori E, Gil AG: Risk factors for early adolescent drug use in four ethnic and racial groups. J Am Public Health **83**: 185-189, 1993.
10. Garrison CZ, Mckeown RE, Valois RF, Vincent ML: Aggression,substance use and suicidal behaviors in high school students. Am J Public Health **83**: 179-184, 1993.
11. Aro H: Life stress and psychosomatic symptoms among 14 to 16 year-old Finnish adolescents. Psychol Med **17**: 191-201, 1987.
12. Gore S, Aseltine RH, Colton ME: Social struture, life stress and depressive symptoms high school-aged population. J Hlth Soc Behav **33**: 97-113, 1992.
13. Yen LL, Lee MB, Luh DL: Perceived symptoms and stress sources among adolescents. Chinese Psychiatry **4**: 100-110, 1990. (Chinese)
14. Yen LL: Factors structure of perceived stress from daily events and its relation to perceived symptoms among ninth grades in Taipei City, Taiwan. J Natl Public Health Assoc (ROC) **12**: 211-218, 1993.(Chinese)
15. Irwin CE: Adolesence and risk taking: how are they related? In: Adolescent risk taking (Bell J, Bell RW eds.), Sage Publication, Inc., California, 1st ed.: 7-47, 1993.
16. Gore S, Golten ME: Introduction: adolescent stress, social relationships and mental health. In: Adolescent stress causes and consequences. (Collten ME, Gore S eds.), Aldine De Gruyter, New York: 1-13, 1991.
17. Department of Health, The Executive Yuan: Statistics of mortality death by ages and districts of Taiwan District, Taipei: 20, 1995. (Chinese)
18. Taiwan Provincial Maternal and Child Health Institute: Hualien County: status of family planning and child raising care, Taichung: 12-13, 1995.(Chinese)
19. Li YM, Tsai TH, Shaw CK, Chan KW: Health behavior in Hualien City high school students. J Formos Med Assoc **94**: S81-86, 1995.(Chinese)
20. Li YM: The factors associated with health hazard behaviors among high school students in Hualien city. Chin J Fam Med **5**:194-205, 1995. (Chinese)
21. Yen LL, Li YM: Prevalence and correlates of hazardous motorcycling behavior among students of senior high schools in Hualien. Chin J Public Health (Taiwan)**16**: 396-403, 1997.

22. SAS Institute Inc. SAS/STAT User's Guide, version 6.04, Cary, North Carolina, SAS Institute Inc 4th ed.: 449-492,751-876,1990.
23. Directorate-General of Budget, Accounting and statistics, Executive Yuan, R.O.C.: Report on the Youth's status survey, Taiwan area, R.O.C. (civilian population aged 15-24 years): 104-105, 1994. (Chinese)
24. Crystal DS, Chen C, Fuligni AJ, Stervenson HW: Psychological maladjustment and academic achievement:a cross-cultural study of Japanese, Chinese and American high school students. Child Development **65**: 738-753, 1994.
25. Kurdek LA: Family acceptance and family control as predictors of adjustment in young adolescents: linear, curvilinear, or interactive effects? Child Development **65**: 1137-1146, 1994.

花蓮市高中生的日常生活壓力及其相關因素

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青少年期面對生理、認知、社會、心理和性發育的變化，這些發育改變較易使他們感受到日常生活的壓力。本文對花蓮市內九所高中、高職學校經分層集束抽樣方法選出27班，1,195位花蓮市高中學生爲研究對象，利用一份自填問卷評估學生的人口上特性、性格特質、個人感受到的社會支持和日常生活壓力。目的評估區內高中生是否有日常生活壓力，及其相關因素。從1,141份有效回答問卷分析，發現壓力量表由經因素分析方法可歸納出「學校課業、未來前途」、「親子關係」和「同儕關係」是他們的主要日常生活壓力來源。神經質、自我接納度低，感受到較低社會支持、漢族和就讀於升學之高中學生是壓力感受較高的重要預測因子。建議學校應例行於入學時評估學生的性格特質，和其社會支持程度，如此可以對危險群給與高度的個別照顧。

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