STRESSORS, PERSONALITY AND MENTAL HEALTH: A FOLLOW-UP STUDY

Luo Lu

The Graduate Institute of Behavioral Sciences, Kaohsiung Medical College, Kaohsiung City 807, Taiwan, Republic of China.

壓力、人格特質及心理健康：一項縱貫分析

陸洛

高雄醫學院　行爲科學研究所

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One hundred and two Taiwanese subjects participated in a questionnaire follow-up study. Measurements of stressors (major life events, minor daily hassles and perceived stress of university life), personality (locus of control, extraversion and neuroticism) and mental health (depression, anxiety and somatic symptoms) were taken at Time 1; mental health was measured again at Time 2 eight months later. Using multivariate analyses, we found that (1) depressive, anxiety and somatic symptoms were all quite stable over an 8-month period; (2) daily hassles could still predict somatic symptoms at Time 2; and (3) locus of control could also predict anxiety symptoms at Time 2. Impacts of life events and daily hassles and the roles of personality in the stress process are discussed.

Key words: stressors, personality, mental health.

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In a previous study[1] conducted with college freshmen in Taiwan, university transition was examined in a broad perspective of stressful life changes research. In addition to perceived stress of university transition, both life events prior to the university transition and ongoing daily hassles were measured. Effects of all three indices of stressors were examined in relation to mental health. In addition, both direct and stress-buffering effects of personality (locus of control, extraversion and neuroticism) were also examined.

Main findings from the study were: (1) Life events and daily hassles were correlated moderately highly; (2) life events predicted anxiety, while daily hassles predicted depression; (3) locus of control and extraversion correlated negatively while neuroticism correlated positively with university stress; and (4) neuroticism had a main effect on symptom reportings across the board, while extraversion had a vulnerability effect on somatic symptoms. Hence, the study suggested that life events and daily hassles are both important in mental health, yet their relative importance may be different when different aspects of mental health are concerned. It has also been suggested that extraversion and neuroticism as personality traits probably influence mental health through different mechanisms.

However, as with many other studies in the area, it was a cross-sectional design, hence did not allow temporal analysis. In fact, when major life events and minor daily hassles were incorporated in the same research design, the relative importance of events against hassles was based on cross-sectional analysis[2,3]. Very few studies have employed longitudinal designs to examine daily hassles[4], and unfortunately, they did not contrast them with major life events. Therefore, we still need to answer the question: will the relative importance of life events and daily hassles vary when a longer time frame is adopted? Namely, will they have different predictive power after a considerable lapse of time?

Researchers such as Pearlin[5] have advocated the notion that major life events may function as triggers, or "primary stressors", which cause a string of related "secondary stressors" over a long time. It is conceivable that major life events may have long-term impact on mental health due to this spin-off effect. On the other hand, previous research[4] has indicated that the level of daily hassles was highly stable over time, acting almost like a proxy of the life style. Therefore, this study hypothesized that

The Graduate Institute of Behavioral Sciences, Kaohsiung Medical College, Kaohsiung City 807, Taiwan, Republic of China.

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Address for reprints: Dr. Luo Lu, The Graduate Institute of Behavioral Sciences, Kaohsiung Medical College, No. 100, Shih-Chuan 1st Road, Kaohsiung City 807, Taiwan, Republic of China.

major life events and daily hassles may have adverse effects on mental health over time.

Another related issue concerns the effects of personality characteristics on the stress-health relationship. Although they are usually presumed to be stable traits, measuring them simultenously with stress and mental health does nothing to help clarify their roles in the stress process. An exception is the longitudinal study conducted by Headey & Wearing[6]. Therefore, there is a need to understand whether personality characteristics have long lasting effects on mental health or if they merely inflate or deflate the reporting of concurrent symptoms. To find out answers to both questions raised above, a follow-up study was conducted 8 months after the original investigation. Since personality traits by definition are stable in nature and extraversion, neuroticism, and locus of control have indeed been found stable over time [7,8], these variables were not measured at the follow-up stage.

METHOD

Subjects

All of the 102 freshmen enrolled in an introductory psychology course at the Kaohsiung Medical College took part in the original investigation and completed measures in this follow-up study. The sample was composed of 57 males (56%) and 45 females (44%). Subjects' ages ranged from 17 to 24, with a mean age of 19 (SD=1.4). All respondents were single and never married.

Stressors

At Time 1, three indices of stressors were measured including life events, university transition and daily hassles.

(a) *Life events*: The Life Events scale was adopted from Holmes & Rahe[9]. Some events were obviously irrelevant to the current sample, such as marriage, hence omitted; some events are relevant to the youth life in Taiwan, such as military service, hence kept. Consequently, the final version has 20 major discrete life events. If an event happened in the previous year, subjects were also asked to indicate its severity on a 3-point scale. "0" indicated "almost not stressful", "1" indicated "moderately stressful", while "2" indicated "extremely stressful". A total events severity score was then used in later analyses.

(b) *University transition*: This stressor was measured by asking subjects to rate the life change "going to university" on a 10-point scale. "0" indicated "almost not stressful", "5" indicated "moderately stressful", while "10" indicated "extremely stressful".

(c) *Daily hassles*: The Daily Hassles Scale was a shortened version of the Hassles Scale[4], adjusted for circumstantial differences in the current sample of young students. The final 34 hassles represented minor mundane concerns, such as "Misplacing or losing things like books or keys", "Arguments with boy-friend or girl-friend", "Not getting on well with classmates or roommates". Subjects were again asked to rate each hassle on a 3-point scale, if it happened in the previous month. "0" indicated "almost not stressful", "1" indicated "moderately stressful", while "2" indicated "extremely stressful". A total hassles severity score was then used in later analyses.

Personality

(a) *Locus of control*: This personality trait was measured by The Sphere of Control[10], which gives a total control score. The higher the score, the more internally oriented in control the person is.

(b) *Extraversion and neuroticism*: These personality variables were measured by the well-established E and N scales in the Eysenck Personality Questionnaire (EPQ)[7].

Mental health

This was assessed by the Chinese version of the SCL-90-R, named The Brief Symptom Rating Scale[11]. In this study, we will only focus on three subscales, namely depression, anxiety and somatic symptoms.

RESULTS

Analysis of data was done using SPSS/PC$^+$ V4.0. In order to examine consistency of mental health after an 8-month interval, Pearson correlations were computed between corresponding sets of symptoms measured at both times. The correlation was the highest for depressive symptoms ($r=0.70$, $p<0.001$), the lowest for anxiety symptoms ($r=0.52$, $p<0.001$), and intermediate for somatic symptoms ($r=0.61$, $p<0.$

001). As we can see, these autocorrelations are moderate to high, suggesting that mental health for this student sample was quite stable during most of their first year in the college.

A series of hierarchical regression analyses was then conducted, using scores of depression, anxiety and somatic symptoms at Time 2 as dependent variables. In each analysis, the predictors were, in order of entry, (a) *stressors*, including university stress, life events and daily hassles; (b) *previous corresponding symtoms*, to control for baseline effects; and (c) *personality*, including, extraversion, neuroticism and locus of control. Results are presented in Table 1.

As for depressive symptoms, only Time 1 symptoms significantly predicted Time 2 symptoms (Beta=0.52, $p<0.001$). As for anxiety symptoms, Time 1 anxiety symptoms and locus of control were both significant predictors (Beta =0.33, $p<0.05$ and Beta=−0.30, $p<0.05$, respectively) and explained 41% of variance. As for somatic symptoms, hassles and Time 1 somatic symptoms were both significant predictors (Beta=0.36, $p<0.01$ and Beta=0.48, $p<0.001$, respectively) and explained 51% of variance.

DISCUSSION

Effects of stressors

In life stress research, there seems to be a recent trend to move away from life events and to study daily hassles instead. However, very few studies have actually directly compared effects of the two measures[2,3]. Results from one previous study[13] using cross sectional design actually supported the notion that different indices of life stressors may serve a compensatory role rather than competing with one another; this study, which adopted a longitudinal perspective, has further pointed out that daily hassles may have stronger predictive power in a longer term.

Among three indices of stress, namely university stress, major life events and minor daily hassles, only hassles could still predict somatic symptoms 8 months later. The failure of life events to predict long term mental health can be explained by the traditional adaptation theory [12] or a more recent dynamic equilibrum model

Table 1. Hierarchical Regressions Predicting Anxiety and Somatic Symptoms at Time 2

Variables	R^2	R^2 change	Beta	F
		Anxiety		
+ University			−0.01	
Events			0.16	
Hassles	0.12	0.12	0.07	
+ Anxiety (1)	0.30	0.18***	0.33*	
+ Control			−0.30*	
Extraversion			−0.08	
Neuroticism	0.41	0.11*	0.08	4.85***
		Somatic symptoms		
+ University			0.08	
Events			0.03	
Hassles	0.32	0.32***	0.36**	
+ Somatic (1)	0.49	0.17***	0.48***	
+ Control			0.07	
Extraversion			0.08	
Neuroticism	0.51	0.02	−0.06	7.16****

+ Indicates a new step in the hierarchical regression.
(1) Indicates data collected at Time 1.
* $p<0.05$, ** $p<0.01$, *** $p<0.001$, **** $p<0.0001$.
Note: Beta values for predictors are those that are attributable to the named variable when all other variables are in the model in the order indicated.

of well-being[6]. Both state that although abrupt major life events often disrupt psychological functioning at all levels, certain built-in mechanisms, such as personality, will act to restore equilibrium, hence masking their effects in a longitudinal analysis.

Another possible explanation is implied in the distinction between "primary stressors" and "secondary stressors" mentioned earlier. Major life events may be more meaningfully perceived as a series of daily hassles, hence, discrete events may not manifest any adverse long-term effects on health, whereas their spin-off hassles do.

However, daily hassles tend to remain at a certain level for individuals, acting more like a personal life style indicator[4]. Therefore, the long term predictive power of hassles found in this study can be seen as that of a particular life style or an indicator of level of chronic strain, which underlines the view that seemingly minor and unimportant difficulties may indeed have serious health consequences. Although the impact of daily hassles was only demonstrated on somatic symptoms, this form of psychological distress is nonetheless both more relevant and more often present in Chinese culture[13].

Effects of personality

This study examined effects of personality in longitudinal analyses when previous mental health was taken into account. Results so far tentatively suggested that effects of personality traits on the stress-health relationship may be varied. The most interesting finding may be that neither extraversion nor neuroticism could predict Time 2 symptoms, while the former was found to have interactive effects and the latter main effects in cross-sectional analyses[11]. This distinct pattern probably suggests that these two personality characteristics mainly influence concurrent symptom reporting rather than objective long term health. Since previous research has focused on the concurrent relationship between personality and symptom reportings, the absence of temporal relationship concerning extraversion and neuroticism needs further replication.

However, locus of control was significantly negatively related to anxiety symptoms. This independent effect was achieved after stress, previous symptoms level were all taken into account, and in competition with other personality variables. Therefore, this result seems to support the notion that locus of control is an important factor to consider in studying both short-term and long-term mental health.

Although the use of a student sample has restricted generalization of results from this study, it has hopefully shed some light on the relative importance of life events versus daily hassles in a follow-up analysis, and also on roles of various personality characteristics in the stress process. Therefore, it may serve as a basis for further community-based research. However, it would be more desirable to employ a more complex longitudinal design, such as a full cross-lagged design in the future.

REFERENCES

1. Lu L: University transition: major and minor life stressors, personality characteristics and mental health. Psychological Med **24**: 81-87, 1994.
2. Burks N, Martin B: Everyday problems and life change events: ongoing versus acute sources of stress. J Human Stress **11**: 27-35, 1985.
3. Rowlison RT, Feiner RD: Major life events, hassles, and adaptation in adolescence: confounding in conceptualization and measurement of life stress and adjustment revisited. J Per Soc Psy **55**: 432-444, 1988.
4. Lu L: Daily hassles and mental health: a longitudinal study. Bri J Psy **82**: 441-447, 1991.
5. Pearlin LI: The sociological study of stress. J Health Soc Beh **30**: 241-256, 1989.
6. Headey B, Wearing A: Personality, life events, and subjective well-being: toward a dynamic equilibrium model. J Per Soc Psy **57**: 731-739, 1989.
7. Eysenck HJ, Eysenck SBG: Manual for the Eysenck Personality Questionnaire. Hodder & Stoughton, London, 1975.
8. Lu L: Adaptation to British universities: homesickness and mental health of Chinese students. Coun Psy Q **3**: 225-232, 1990.
9. Holmes RH, Rahe RH: The Social Readjustment Rating Scale. J Psychosom Res **11**: 213-218, 1967.
10. Paulhus D: Sphere-specific measures of perceived control. J Per Soc Psy **44**: 1253-1265, 1983.
11. DeLongis A, Folkman S, Lazarus RS: The

impact of daily stress on health and mood: psychological and social resources as mediators. J Per Soc Psy **54**: 486-495, 1988.
12. Brickman P, Coates D, Janoff-Bulman R: Lottery winners and accident victims: Is happiness relative? J Per Soc Psy **36**: 917-927, 1978.
13. Cheung FMC: Psychopathology among Chinese people. In *The psychology of the Chinese people* (Bond MH ed). Oxford University Press, Hong Kong, 1986.
14. Lu L, Argyle M: Happiness and cooperation. Per Indiv Diff **12**: 1019-1030, 1991.
15. Smith TW, Pope MA, Rhodwalt JL: Optimism, neuroticism, coping and symptom reports: An alternative interpretation of the Life-Orientation Test. J Per Soc Psy **56**: 640-648, 1989.

壓力、人格特質及心理健康：一項縱貫分析

陸洛

102位台灣大學生參與了本項縱貫性研究。本研究在第一次施測時測量了壓力（包括嚴重生活事件、輕微生活困擾及主觀知覺的大學生活壓力），人格特質（包括內外控、內外向及神經質），以及心理健康（包括憂鬱、焦慮和身體化症狀）；在八個月後第二次施測時重複測量了心理健康。通過多變項分析，我們發現：(1)在八個月的過程中，憂鬱、焦慮和身體化症狀均相當穩定；(2)日常生活困擾仍能預測第二次施測的身體化症狀；(3)內外控亦可預測第二次的焦慮症狀。本文對生活事件和日常生活困擾之相對影響，以及人格特質在壓力過程中的作用進行了討論。

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