

Relationships between Stressful Life Events and Psychological Health, and the Buffer Action of Sense of Coherence in Nursing College Students

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Abstract

Purpose: In this study, (1) what stressful life events (SLE) nursing college students experience, how they differ from those of university students in general, (2) whether their psychological health is affected by such SLE, and (3) whether the buffer action of Sense of Coherence (SOC) on the effects of SLE on psychological health are observed in nursing students as indicated by the theoretical framework of SOC, were evaluated.

Methods: A self-answered questionnaire was performed in early April, 2006 in 273 2nd-year to 4th-year students at a nursing college. Of the subjects, 7.7% were males and 92.3% were females.

Results: Among SLE, the frequency and severity were both very high in "I felt burdened with study and assignments" (frequency rate: 0.897; mean stress score: 1.580 ± 0.950), "I had many tests and homework such as reports" (frequency rate: 0.864; mean stress score: 2.090 ± 0.840), and "I was uninterested in classes" (frequency rate: 0.780, mean stress score: 2.030 ± 0.820). These SLE are considered to be characteristic of nursing students. Concerning the relationship between SLE and psychological health, psychological health decreased as the severity of SLE increased, and the effects of SLE on psychological health were smaller in the high SOC group than in the low SOC group. These results suggest that the SOC buffers the effects of SLE on psychological health in nursing students, which was in agreement with the SOC theory.

Key words: Sense of Coherence, stressful life events, mental health, nursing students.

I. Introduction

Modern Japan has grown into a highly developed society through rapid changes in social and economic structures. This applies also to university or college students. As university or college students become more diverse with increases in the percentage of people who go to university or college, the number of students who fail to maintain psychological health, who have repeated school years, and who quit their school is also reported to be increased.^{1),2),3),4)} Their mental health has emerged as a universal and serious problem, and the prevention of psychological damage is a central issue in health education. Identification of resources that may

help to prevent psychological damage may serve as an important first step in developing preventive strategies.

One of the important factors that will impair psychological health is known as 'stressful life events' (SLE). SLE is defined as a quantitatively measurable life stress by investigating which life events are perceived as stressor and how strongly each event provides stress. After Social Readjustment Rating Scale was published in 1967,⁵⁾ quantitative measure of life stress such as SLE has come to be done widely. SLE includes stressor of both acute major events and chronic and relatively small daily events.⁶⁾ It is widely supported that SLE exerts marked psychological effects.⁷⁾

Although it is an important research question to be explored which SLE among university or college students are affecting psychological health as stressors, little literature in this field could be found in Japan. When limiting the exploration to nursing college students, there have been several reports on stressful life events and their effects to psychological health,^{8),9),10)} though these studies limited their focus on the situation in clinical practice. To prevent psychological damage among nursing college students, it should be examined what SLE in general, not limiting to those related to clinical practice, nursing college students experience, and how they differ from those of university students.

It has also been suggested that individual differences can influence the probability to experience psychological reactions in situations in which people are exposed to stressors.¹¹⁾ Among people experiencing similar stressful events, some are adversely affected while others remain healthy. As the most basic factor of this difference, the salutogenic ability to maintain health under the influence of stressful events is attracting attention. One of the salutogenic models that has generated considerable interest is the Sense of Coherence (SOC).¹²⁾ While medical health experts have tended to focus on the problem of why health is impaired and the search for factors adversely affecting health, SOC has been regarded as a concept that highlights positive factors from a health-creating viewpoint of why people can stay healthy.¹³⁾ According to Antonovsky,¹³⁾ SOC was defined as representing the salutogenic resources available to individual. These resources, when strong, include the belief that what happens in their lives is rational, predictable, structured, and understandable (comprehensibility); that adequate and sufficient resources are perceived to be available to help resolve difficulties as they arise (manageability); and that the demands created by exposure to adversity are seen as challenges and are worthy of engagement (meaningfulness). SOC is hypothesized to be a stable personality disposition that serves as a major coping resource for preserving health. It is assumed to function as a regulator, or as a moderator, between stressor such

as SLE and health status such as psychological health.¹³⁾

SOC has been evaluated in many countries as a concept valid across the barriers of gender and culture,¹⁴⁾ and the relationships of a strong SOC with physical and psychological well-being, a good state of health including the absence of physical symptoms, and proper coping with disabilities have been disclosed.^{15),16),17)} Through these studies, SOC has been recognized as a concept useful for the protection of health in an unavoidably stressful society, and begun to be highly evaluated as a basic theory of health promotion.¹⁸⁾ In addition, since SOC is reported to be established by the age 30s,¹³⁾ the effects of the circumstances in university or college days, when it is considered to develop, are considered to be one of the major issues to be evaluated. While researches on adults in part support the assumptions of the buffering role of SOC between SLE and psychological health, the role in university or college students is largely unexplored. There have been a few studies on the SOC of university or college students in Japan.¹⁹⁾ Also, as far as we know, no original research article has been published evaluating the SOC of nursing college students specifically. With the view that nursing school adaptation has an essential impact on a wide range of social, psychological, and behavioral outcomes including their future working status in hospitals, empirical evidence on the stress buffering role of SOC during nursing college days may offer particularly scope for development of prevention policies.

On the basis of these backgrounds, the main purpose of this study is to attempt to examine (1) what SLE nursing college students experience, and how they differ from those of university students in general, (2) whether their psychological health is affected by such SLE, and (3) whether the stress-buffering effects of the SOC exist even among nursing college students.

II. Methods

1. Subjects, Methods and Ethical consideration

An anonymous questionnaire survey was

performed in the 2nd-year to 4th-year students attending a nursing college in Mie Prefecture in early April 2006. After group guidance at the beginning of a school year, the purpose and privacy policy were carefully explained to the students, and their cooperation with the survey was requested. Of the 289 copies of the questionnaire distributed, 273 valid responses were analyzed (effective response rate: 94.5%).

As for ethical consideration, we made special efforts to reduce the psychological burdens of the questionnaire survey and exercised the utmost caution for the protection of the privacy.

2. Survey items

1) Attributes and living style

The questionnaire asked about gender, age, college year, whether the students lived with their parents or alone, whether they had repeated school years, and whether they joined extracurricular activities.

2) Stressful life events (SLE)

There have been a wide range of attempts to identify life events that are stressors, to determine the stress level of each of such events, and to quantitatively evaluate life stress. In this study, for comparisons with other university students in Tokyo area, a questionnaire was formulated by incorporating 42 items selected from SLE or daily inconveniences evaluated in previous studies^(20,21) and 6 original items related to events considered to be characteristic of clinical practice (see Table1). The latter 6 items were asked only to the 4th-year students. The questionnaire asked whether the respondents had experienced any of the events during the past 3 months (answered with “yes” = 1 or “no” = 0) and, if they had, how much stress or psychological burden it caused (answered using a 4-point scale from “very much” = 3 to “none” = 0; severity score).

Concerning the assessment of SLE, some have argued that they should be weighted.⁽²²⁾ We, therefore, first calculated the rate of the subjects who answered “yes” about each SLE (frequency rate), then the total number of items about which the subjects answered “yes” (total number of SLE) among the 42 items (other

than the 6 items characteristic of clinical practice), and, by weighting each item, the total quantity of SLE. The total quantity of SLE was the sum of the products between the score of whether there was an SLE and its mean stress severity score. In this study, the mean total number of SLE was 17.7 ± 6.8 , and the mean total quantity of SLE was 27.3 ± 10.0 . Since the results were similar between the total number of SLE and total quantity of SLE, only the total quantity of SLE is discussed below.

3) SOC scale

The 29-item SOC scale (answered on a 7-point scale) proposed and developed by Antonovsky⁽¹⁴⁾ and translated by Yamazaki⁽¹⁸⁾ was used. Higher total scores of the 29 items (range 29-203) indicated greater stress-coping ability, i.e., the ability to remain healthy. The mean SOC score of this study was 119.7 ± 19.9 . When the subjects were divided into the high- and low-SOC groups at the median SOC score, as will be mentioned in the ‘Analytical methods’ section, the mean SOC score was 135.4 ± 11.9 and 104.8 ± 13.4 , respectively. The coefficient of reliability of the SOC scale in this study (α) was 0.883.

4) Psychological health

Psychological health was measured using the GHQ-12, a shortened version of Goldberg’s General Health Questionnaire (GHQ).⁽²³⁾ The GHQ is a questionnaire for the screening of the general public for non-organic, non-psychiatric mental disorders. Its reliability and validity have also been evaluated in Japan.⁽²⁴⁾ Responses to each question are given using a 4-point scale and respectively scored 0, 1, 2, and 3, and the total score was regarded as the GHQ score. A higher score is considered to indicate a poorer state of psychological health. In this study, the mean GHQ score was 14.3 ± 5.3 , and the α value was 0.811.

3. Analytical methods

The relationships between the total quantity of SLE and GHQ were examined by simple correlation analysis. Also, the buffer effect of the SOC on the

effects of SLE on psychological health was analyzed by dividing the subjects into 2 groups at the medial SOC score (high-SOC group, low-SOC group) and into 3 groups at the quartiles of the SLE score (low-SLE, middle-SLE, and high-SLE groups; SLE score <25%, 25-75%, 75%<, respectively), and the mean GHQ score was compared among the 3 SLE groups in each of the high-SOC and low-SOC groups by one-way analysis of variance and Bonferoni's multiple comparison test.

All these analyses were performed with the statistical package SPSS12.0J.

III. Results

1. Attributes and living style of the subjects

The subjects consisted of 7.7% males and 92.3% females and of 34.4% 2nd-year students, 33.0% 3rd-year students, and 32.6% 4th-year students. Concerning the living style, 53.1% lived apart from their families, 2.9% had repeated school years, and 64.5% participated in extracurricular activities.

2. Frequency of the occurrence of SLE and severity of stress

Of the SLE experienced by the subjects (see Table1), the frequency rate of occurrence was very high, exceeding 0.8, in "I felt burdened with study and assignments" (0.897) and "I had many tests and assignments such as reports" (0.864), followed by "I was

Table1 Frequency rate and stress level of SLE

Items	Frequency rate	Stress level		Frequency rate *mean stress level
		Mean	SD	
I felt burdened with study and assignments.	0.897	1.580	0.950	1.417
I had many tests and assignments such as reports.	0.864	2.090	0.840	1.806
I was uninterested in classes.	0.780	2.030	0.820	1.583
I was dissatisfied with my looks.	0.780	1.610	0.890	1.256
I was worried about the course to take after graduation from college.	0.773	1.520	0.800	1.175
I had to cook, clean, and wash for myself.	0.766	1.360	0.700	1.042
I was too busy to do what I wanted to do.	0.762	1.200	0.940	0.914
I could not sleep enough.	0.755	1.670	0.790	1.261
Commuting was difficult (due to the long time it took, traffic congestion, inconvenient traffic, etc.).	0.740	1.770	0.880	1.310
I was in bad health.	0.652	1.700	0.830	1.108
I did not do well at college.	0.637	1.530	0.790	0.975
I was short on money and could not buy what I wanted.	0.615	1.460	0.760	0.898
I could not follow the classes.	0.612	1.460	0.790	0.894
I was punished for breaking laws or rules.	0.590	1.470	0.770	0.867
I was behind in the knowledge of information technology such as the computer.	0.560	1.440	0.960	0.806
I did not have much to do and was bored.	0.553	1.330	0.840	0.735
I had to associate with people whom I did not like.	0.516	1.260	0.760	0.650
I was dissatisfied with my room (narrow, not much sunshine, etc.)	0.491	1.590	0.820	0.781
I could not agree with my records at college.	0.407	1.430	0.790	0.582
I had heavy responsibility in extracurricular activities or part time job and felt burdened.	0.407	1.560	0.900	0.635
I felt watched and tied down by my parents.	0.363	1.460	0.820	0.530
College strictly monitored the students' attendance at classes and supervised their lives.	0.359	1.540	0.790	0.553
College was inconvenient, because there were not many shops including convenience stores in the neighborhood.	0.333	1.390	0.850	0.463
The college facilities and equipment were inconvenient.	0.330	1.200	0.790	0.396
The college clerical staff was inefficient and unhelpful.	0.326	1.440	0.780	0.469
I was warned by people around me about my speech and behavior.	0.322	1.730	0.860	0.557
I had different thoughts and could not get along well with friends or seniors.	0.308	1.320	0.800	0.407
I was looked down on or mocked.	0.300	1.570	0.830	0.471
I was annoyed by having to share a room.	0.290	1.450	0.910	0.421
I wanted to quit the circle or part-time job but I could not.	0.289	0.880	0.840	0.254
My room had mosquitoes, flies, cockroaches, or rats.	0.282	1.730	0.870	0.488
I was annoyed by noise, smell, drinking water, and dirtiness of the neighborhood.	0.267	1.420	0.850	0.379
I quarreled with my parents or siblings.	0.264	1.410	0.760	0.372
The neighborhood had poor security with crimes such as molestation, blackmail, and theft.	0.223	1.260	0.790	0.281
I was betrayed by or disappointed at friends or seniors.	0.198	1.440	0.740	0.285
I was disappointed in love or separated from my boyfriend (girlfriend).	0.194	1.630	0.850	0.316
I got involved in unexpected events (accidents, natural disasters, etc.).	0.143	1.850	0.990	0.265
I experienced unwanted solicitations.	0.139	1.870	1.060	0.260
The classrooms, other rooms, toilets, and cafeteria at college were unclean.	0.132	1.290	0.610	0.170
I was ill or injured.	0.110	0.940	0.630	0.103
My parents were indifferent to me.	0.106	1.500	0.900	0.159
I got into trouble about money.	0.095	0.790	0.680	0.075
I felt burdened with preparing records and reports during clinical practice.	0.989	2.610	0.630	2.581
I could not sleep enough during clinical practice.	0.966	2.650	0.670	2.560
I felt difficulty in human relations with teachers.	0.775	1.960	0.870	1.519
I felt difficulty in human relations with instructors and hospital staff members during clinical practice.	0.764	1.960	0.870	1.497
I felt difficulty in human relations with patients during clinical practice.	0.652	1.760	0.820	1.148
I felt difficulty in human relations with group members during clinical practice.	0.438	1.740	0.910	0.762

uninterested in classes" (0.780), "I was dissatisfied with my looks" (0.780), "I was worried about the course to take after graduation from college" (0.773), "I had to cook, clean, and wash for myself" (0.766), "I was too busy to do what I wanted to do" (0.762), "I could not sleep enough" (0.755), and "Commuting was difficult (due to the long time it took, traffic congestion, inconvenient traffic, etc.)" (0.740), exceeding 0.7.

The mean stress score was highest for "I had many tests and assignments such as reports" (2.090 ± 0.840), followed by "I was uninterested in classes" (2.030 ± 0.820), and the stress level of "I felt burdened with study and assignments", which was the most frequent complaint, was relatively low (1.580 ± 0.950). The items with the next highest mean stress scores included "I experienced unwanted solicitations" (1.870 ± 1.060 ; frequency rate: 38th) and "I got involved in unexpected events (accidents, natural disasters, etc.)" (1.850 ± 0.990 ; frequency rate: 37th), and some items low in frequency caused high levels of stress.

As for the 6 questions asked only to the 4th-year students related to clinical nursing practice, both the frequency and stress level were markedly high in "I felt burdened with preparing records and reports during clinical practice" (frequency rate: 0.989; mean stress score: 2.610 ± 0.630) and "I could not sleep enough during clinical practice" (frequency rate: 0.966; mean stress score: 2.650 ± 0.670), followed by "I felt difficulties in human relations with the teachers" (frequency rate: 0.775; mean stress level: 1.960 ± 0.870) and "I felt difficulties in human relations with instructors and hospital staff members during clinical practice" (frequency rate: 0.764; mean stress score: 1.960 ± 0.870). The frequency of the occurrence and stress level were generally higher in these items than in the above 42 items.

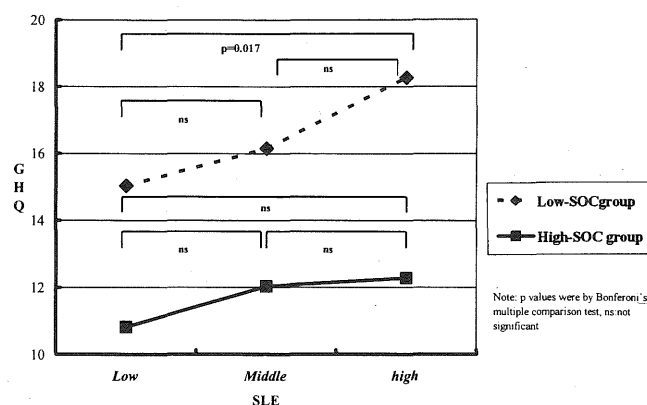
3. SOC

1) Relationships between the SLE and GHQ

A significant positive correlation ($r=0.276$, $p<0.001$) was observed between the total quantity of SLE and GHQ score.

2) Buffering of the effects of SLE on the GHQ score

Figure 1 Buffering of the effects of SLE on the GHQ score by the SOC



by the SOC

Figure 1 shows the results of evaluation of the buffer effect of the SOC. When the mean GHQ score was compared according to the total quantity of SLE separately in the high-SOC and low-SOC groups, no significant difference was observed among the low-, middle-, and high-SLE groups in the high-SOC group, but a significant difference was observed between the high-SLE group and low-SLE group in the low-SOC group ($p=0.017$).

IV. Discussion

1. SLE in nursing college students and their characteristics

SLE frequently observed in these subjects were those related to school such as "I felt burdened with study and assignments", "I had many tests and assignments such as reports", and "I was uninterested in classes". The stress scores of these items were also very high. The structure of these results differed compared with that in university students in Tokyo.^{20,21} In universities, the frequencies of the occurrence of "I was uninterested in classes", "I could not sleep enough", and "I was too busy to do what I wanted to do" were high, and the stress score was also high for the last 2. Also, the stress score was high for items related to human and social relations such as "I was betrayed by or disappointed at friends or seniors" and "I was disappointed in love or separated from my boyfriend (girlfriend)". Therefore, both the frequency of the occurrence and stress level of items related to classes, homework, or

studies were markedly high, but those of items related to human or social relationships were relatively low, in the students of this nursing college compared with students at other universities. These results are considered to reflect the situation of nursing college students in which they must take more classes and learn more about their special field than students in other fields, hence, do more homework and write more reports, and spend most of their time in doing them.

The stress level is considered to have been particularly high during clinical nursing practice, which is characteristic of a nursing college, due to the stress of the heavy burden of writing records and reports and the associated lack of sleep. During clinical practice, human relationships with teachers caused more stress than those with instructors, hospital staff members, or patients, indicating the necessity of more attention to the human relationships between teachers and students. Overall, the results of this study suggest that nursing college students are exposed to stressors different from those of other university students in Tokyo area. In future studies, approaches to the effects of such stress and psychological burden on physical and psychological health of students and their subsequent career as nurses may be relevant.

2. Buffering of the effects of SLE on the GHQ score by the SOC

In this study, psychological health tended to deteriorate as SLE increased. Also, the effects of SLE on psychological health were smaller in the high-SOC group than in the low-SOC group, suggesting that the SOC buffers the effects of SLE on psychological health. A high SOC may protect psychological health from daily stressful events, and this observation was in agreement with the proposed SOC theory¹³⁾ and with the results in general population.²⁵⁾ Some studies have shown that the buffer effect of the SOC differed between males and females and that the SOC exerted a buffer effect in males but not in females and suggested that there may be gender difference in the effects of the SOC on SLE and health parameters.^{26),27)} The subjects of this study

were 2nd-year to 4th-year nursing college students, 92.3% of whom were females. Our findings suggest that even among females, SOC has a buffer effect and protects psychological health from daily stressful events. It is found to be a controvertible issue and further studies on it are expected.

3. Limitations of this study

This study is considered to have been significant in that it first clarified stressful life events to which nursing college students are exposed, their adverse effects on psychological health, and a buffer effect of the SOC on them and that it contributed to an increase in the understanding of physical and psychological health of nursing college students. However, this study had some limitations. First, it was a cross-sectional study, and longitudinal studies including follow-up surveys are necessary in the future. Second, the subjects of this study were a limited and specific group. They were 2nd-year to 4th-year students at a nursing college in Mie Prefecture. Different results may be obtained from students at other nursing colleges or occupational schools, nursing junior colleges, or university nursing schools.

V. Conclusions

Among the SLE experienced by students at a nursing college, those related to classes, homework, and clinical practice such as "I felt burdened with study and assignments" and "I had many tests and assignments such as reports" were notable both in frequency and stress level, and their SLE structure differed compared with that in students at other universities.

The level of psychological health tended to decrease with increases in the total amount of SLE. In addition, the SOC was suggested to buffer the effects of SLE on psychological health, which was in agreement with the SOC theory and the results in students of other colleges.

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