Health Status of Male Preparatory School Students Lodging at a Dormitory in Japan

Ichiro SAKURADA*¹, Teruhiko KIDO*², Yasushi SUWAZONO*¹, Etsuko KOBAYASHI*¹,
Natsuo KINOUCHI*¹ and Koji NOGAWA*¹

**¹Department of Hygiene, Chiba University School of Medicine, Chiba*

**²Department of Community Health Nursing, Kanazawa University School of Health Sciences, Kanazawa*

Abstract

An investigation on the health status of 79 male preparatory school students lodging at a dormitory in Japan was carried out by questionnaire on lifestyles, subjective symptoms and mental status, as compared with two control groups: 73 medical students and 36 new employees. About 83 % of them slept less than 6 hours and 70 % of them did not exercise. Many students are troubled with back pain or lumbago(47%), sensation of incomplete bladder emptying(16%), loss of visual acuity(55%) and eye fatigue(65%). Self-rating depression scale score of preparatory school students was not significantly higher than those of the control groups. The lifestyles of preparatory school students found to be very restricted and strained. However, no significant differences on mental adverse health effects was found among three groups.

Key words: health status, male preparatory school students in Japan, lifestyles, self-rating depression scale

Introduction

It has been believed that in Japan anybody who wants to get a job at a leading company or wants to be promoted sooner must graduate from a famous university because Japan is a society that values educational background.^{1,2)} For this reason just attending regular schools is not enough to survive in the educational system in terms of acquiring the knowledge necessary to be successful in university entrance examinations. Japan is probably the country with the largest number of preparatory schools ("cram schools") besides regular schools in the world. Sometimes a high school student goes to a preparatory school after school, but generally speaking, a preparatory school is for students who have failed a university entrance examination once and are studying hard to try again the following year. About two hundred thousand preparatory school students are in Japan every year.³⁾ Some of them stay in the dormitories of the preparatory schools. They may have poor health status due to group life as well as severe competition.

The health status of preparatory school students has rarely been reported in the world. One researcher showed the background of mental hygiene of preparatory school students.⁴⁾

However, the present status of mental health was not investigated. The aim of this study is to clarify the health status of male preparatory school students lodging at a dormitory by using a questionnaire on their lifestyles, subjective symptoms and mental status, compared with other groups of the same generation.

Subjects and Methods

We obtained the consent from male students lodging at a dormitory of a certain preparatory school in the Tokyo metropolitan area and investigated their lifestyles (6 items), subjective symptoms (39 items from head to foot), and mental status using a self-rating depression scale (SDS; 20 items)^{5,6)} in September 1992 and December 1992 by the questionnaire method. The content of each item is shown in Table 1-3. Items on lifestyles and subjective symptoms are made by us. The number of students lodging at the dormitory was 105, with 79 of these replying to the questionnaire (recovery rate; 75%). The duration after they left high school was 2 years or less, and they were all males. Their average age and range were 18.7 years and 18-20 years, respectively. Seventy-one students participated in the second examination (recovery rate; 68%). Their average age and range were 18.9 years and 18-21 years, respectively. One of the control groups consisted of 73 of 100 new medical students aged between 18 and 29 years (average; 20.7 years, recovery rate; 73%), about 30 percentage of whom were female, were surveyed in December 1992. The other group comprised 36 of 36 new

Received Jul. 9 1998/Accepted Dec. 14 1998

Reprint requests to: Teruhiko KIDO

Department of Community Health Nursing, Kanazawa University School of Health Sciences, 5-11-80 Kodatsuno, Kanazawa, 920-0942, Japan

TEL: +81(76)265-2565

FAX: +81(76)234-4363

Table 1 Comparison of lifestyles

Group	A	B	C	D	Groups	A vs B	A vs C	A vs D	B vs C	B vs D	C vs D
Sleep(6 hours or less) (%)	72.7	83.1	32.9	14.3	**		**	**	**	**	*
Breakfast(none or seldom) (%)	17.8	25.7	34.3	47.2	**		*	**		*	
Snack (sometimes or everyday) (%)	79.7	77.1	83.6	93.7	N.S.						
Drinking(sometimes or everyday) (%)	12.7	10.0	58.9	45.7	**		**	**	**	**	
Smoking(yes) (%)	25.3	29.6	18.2	44.4	**			*			**
Exercise(no) (%)	64.6	70.4	23.6	50.0	**		**		**	*	**
Number of good habits	3.0 ± 1.0	2.8 ± 1.2	2.8 ± 1.2	2.6 ± 1.2	N.S.						

A : Preparatory school students (Sep.1992), B : Preparatory school students (Dec.1992), C : New medical students, D : New employees.

The number of respondents varied due to missing responses: 77 - 79 for Group A; 69 - 71 for Group B; 72 - 73 for Group C; 35 - 36 for Group D.

Groups : Comparison among groups (A ~ D) using χ^2 square test or analysis of variance, **: P<0.01, *: P<0.05, N.S. : Not significant.

Table 2 Comparison of subjective symptoms (%)

	A(n=79)	B(n=71)	C(n=73)	D(n=36)	Groups	A vs B	A vs C	A vs D	B vs C	B vs D	C vs D
Respiratory											
cold	35.4	29.6	34.2	25.0							
nasal discharge	45.6	53.5	54.8	44.4							
hoarseness	15.2	11.3	13.7	5.6							
cough	6.3	18.3	12.3	8.6							
sputum	17.7	21.1	17.8	8.6							
bloody sputum	3.8	4.2	5.5	0.0							
dyspnea	10.1	8.5	17.8	2.9	#				#		
Circulatory											
palpitation	25.3	25.4	21.9	19.4							
chest pain	25.3	29.6	27.4	13.9						#	
arrhythmia	3.8	5.7	8.2	5.7							
tachycardia	5.1	4.3	13.7	2.9	*				*		
edema	7.6	2.8	9.6	0.0	#			#			
Digestive											
difficulty in swallowing	8.9	11.3	8.2	0.0				#		*	
heart burn, belching	16.5	21.1	15.1	13.9							
nausea,vomitting	2.6	7.0	9.6	2.8							
abdominal pain	12.8	15.5	19.2	5.6							
diarrhea	42.3	31.0	27.4	22.2			#	*			
melena,tarry stool	6.4	2.8	0.0	0.0	#		*				
hemorrhoids	5.1	2.8	4.1	5.6							
Motor											
pain in major joints	14.1	11.3	15.1	2.8				#			
pain in minor joints	3.8	2.8	8.2	2.8							
stiff shoulders	47.4	47.9	49.3	25.0	#			*		*	*
back pain,lumbar pain	46.2	46.5	24.7	25.0	**		**	*	**	*	
Dermatologic											
eczema	11.5	14.1	23.3	19.4			#				
suppurative tendency	2.6	4.2	5.5	0.0							
Urinary											
pain on urination	3.8	2.8	2.7	0.0							
sensation of incomplete bladder emptying	14.1	15.5	5.5	0.0	*		#		*	*	
frequency of urination	6.4	7.0	5.5	0.0							
decrease of urine volume	2.6	2.8	4.1	2.8							
Ophthalmic											
misty eyesight	52.6	54.9	52.1	22.2	**			**		**	**
eye strain	60.3	64.8	54.8	16.7	**			**		**	**
eye pain	12.8	12.7	6.8	0.0				*		*	
Auditory											
deafness	9.0	2.8	6.8	11.1						#	
tinnitus	11.5	9.9	8.2	0.0				*		#	
Neurological											
headache	23.4	18.3	23.3	11.1							
dizziness	20.8	15.5	15.1	5.6				*			
tremors	7.8	7.0	2.7	2.8							
drop something from hands	6.5	7.0	0.0	0.0	#		*		*		
abnormal sensations of fingers or toes	6.5	1.4	4.5	0.0							

A: Preparatory school students (Sep.1992), B: Preparatory school students (Dec.1992), C: New medical students, D: New employees.

No missing responses were found among groups A and D only.

Groups : Comparison among groups (A ~ D) using χ^2 square test, **: P<0.01, *: P<0.05, #: P<0.1.

male employees at two manufacturing companies (recovery rate; 100%), who had just graduated from high school in March 1993. Their average age and range were 18.0 years and 17-18 years, respectively. All data were statistically analyzed by χ^2 square test or analysis of variance.

Results

The results are shown in Table 1-3. Group A was preparatory school students investigated in September 1992. Group B was preparatory school students investigated in December 1992. No significant differences were found between groups A and B in any items. Group C was new medical students who included both sexes since the data excluding women indicated almost the same results as the data of both sexes. Group D was new employees.

The result of comparison about lifestyles is shown in Table 1. The preparatory school students whose sleeping hours were 6 or less were 73 % in September and 83% in December. The rates were obviously higher than that of new students in the school of medicine (33%) or new employees (14%). The preparatory school students who usually omitted breakfast were 18 % in September and 26% in December. The rates were lower than that of new medical students (34%) or new employees (47%). The rates of having snack were not significantly different among the three groups of youngsters. Only 13 % of the preparatory school students had the habit of drinking. This result is significantly lower as compared to new medical students (59%) or new employees (46%). On the other hand, the preparatory school students and new medical students who smoked were 30 and 18 %, respectively. These results are significantly lower than that of new employees (44%). The preparatory school students who did not exercise were 70%. The rate was obviously higher than that of new medical students (24%) or new employees (50%). The total number of good habits ranged from 2.6 to 3.0 and was not significantly different among the three groups of youngsters.

The comparison of the presence/absence of any subjective symptoms is shown in Table 2. On some items of motor organs, eyes, and urinary organs, we found marked differences between the preparatory students and the other groups. The preparatory school students who have back pain or lumbar pain were 47%. This rate was obviously higher than that of new medical students (25%) or new employees (25%). Sixteen percent of preparatory school students had a sensation of incomplete bladder emptying. This rate was significantly higher than that of new medical students (6%) or new employees (0%). The preparatory school students who have stiff shoulders were 48%. The result is not significantly different from that of new medical students (49%), but is significantly higher than that of new employees (25%). The preparatory school students who have misty eyesight were 55%. The result is not significantly different from that of new medical students (52%), but is significantly higher than that of new employees (22%). The preparatory school students whose eyes were fatigued were 65%. The result is not significantly different from that of new medical students (55%), but is significantly higher than that of new employees (17%).

The result of the comparison of mental state (SDS test) is shown in Table 3. The mean SDS score was 41.4 among preparatory school students in September (A), 41.1 among those in December (B), 39.7 among new medical students (C), and 40.1 among new employees (D). No significant differences were found between any of the groups. We analyzed each item of the SDS test. We asked them to select answers from "rarely", "sometimes", "quite often" and "most of the time". We showed the rates of items answered "most of the time" in Table 3, and statistically analyzed by χ^2 square test. In the following 4 questions, the answers of the preparatory school students were worse than those of new medical students or new employees.

"I feel down-hearted and blue." (B:18%, C:7%, D:0%)

"I am interested in the opposite sex." (A:55%, C:73%, D:89%)

"I find it easy to do the things I used to." (B:10%, C:24%,

Table 3 Items of self-rating depression scale (SDS) test (%) and SDS scores

	A(n=79)	B(n=71)	C(n=73)	D(n=36)	Groups	A vs B	A vs C	A vs D	B vs C	B vs D	C vs D
I feel down-hearted and blue.	12.7	18.3	7.0	0.0	*			*	*	#	
Morning is when I feel the best.	54.4	40.8	52.1	22.2	*			**		#	**
I have crying spells or feel like it.	5.2	2.8	1.4	2.8	N.S.						
I have trouble sleeping at night.	15.3	16.9	5.4	5.6	N.S.				*		
I eat as much as I used to.	79.8	85.9	85.9	83.3	N.S.						
I am interested in the opposite sex.	55.1	53.5	73.1	88.5	**	*	*	*	*	**	
I notice that I am losing weight.	12.7	7.0	5.6	0.0	#			*			
I have trouble with constipation.	8.9	1.4	4.2	0.0	#			#			
My heart beats faster than usual.	3.9	2.8	1.4	0.0	N.S.						
I get tired for no reason.	30.4	29.6	21.9	8.3	#			**		*	#
My mind is as clear as it used to be.	41.7	43.7	56.2	41.7	N.S.		#				
I find it easy to do the things I used to.	7.6	9.9	23.6	36.1	**	**	*	*	*	**	
I am restless and can't keep still.	17.8	19.8	12.3	11.1	N.S.						
I feel hopeful about the future.	27.8	31.9	35.7	63.9	*			**		**	**
I am more irritable than usual.	16.4	14.1	1.4	2.8	**	**	#	#	**	#	
I find it easy to make decisions.	53.2	63.4	55.6	83.3	*			**		*	**
I feel that I am useful and needed.	36.8	36.6	34.8	13.9	#			*		*	*
My life is pretty full.	39.3	46.5	48.6	47.3	N.S.						
I feel that others would be better off if I were dead.	5.1	9.8	5.4	0.0	N.S.					#	
I still enjoy the things I used to do.	25.4	26.7	41.1	33.3	N.S.	*			#		
SDS score	41.4 ± 6.8	41.1 ± 8.3	39.7 ± 7.4	40.1 ± 5.5	N.S.						

A: Preparatory school students (Sep.1992), B: Preparatory school students (Dec.1992) C: New medical students, D: New employees.

The numbers of missing responses were less than two except for six at the item of 'I am interested in the opposite sex' in the group C.

Groups: Comparison among groups (A ~ D) using χ^2 square test or analysis of variance, **: P<0.01, *: P<0.05, #: P<0.1, N.S.: Not significant.

D:36%)

"I am more irritable than usual." (A:16%, C:1%, D:3%)

And in the following 2 questions, the answers of the preparatory school students were not significantly different from those of new medical students, but were significantly worse than those of new employees ($P < 0.05$).

"I feel hopeful about the future." (B:32%, D:64%)

"I find it easy to make decisions." (B:63%, D:83%)

Only in the question "Morning is when I feel the best" that 54% of Group A, 52% of Group C, and 22% of Group D answered affirmatively, and the result of the preparatory school students was better than that of new employees.

Discussion

The social position of company employee or university student is well established in Japan, whereas that of a preparatory school student is in flux. Generally speaking, the latter is thought to spend a restricted and anguished life to succeed in university entrance examinations in the following year, but few investigations on the health status of preparatory school students have been carried out. The present study shows that male preparatory school students are inferior to groups of their peers in many items of the questionnaire as follows:

The rate of the preparatory school students who admitted that sleep time is 6 hours or less is approximately 6 fold that of new employees. The rate of the preparatory school students who had a habit of drinking is approximately one-fifth that of new medical students. The rate of the preparatory school students who did not exercise is approximately 3 fold that of new medical students. Few preparatory school students omitted breakfast or drank alcohol. This may be because they were all lodged at a dormitory. If we investigated preparatory school students living with their families, we might obtain a different result.

Regarding subjective symptoms, the rate of the preparatory school students who had back or lumbar pain is twice that of new medical students or new employees. The rate of the preparatory school students who had a sensation of incomplete bladder emptying is 16%, much higher than those of the control groups. It is considered that these symptoms are due to lack of exercise or excessive sitting. The rate of the preparatory school students who had fatigued eyes is 2.5-3.8 times higher than that of new employees, while the rate of new medical students who had fatigued eyes is nearly equal to that of preparatory school students. This may indicate one of the common physical problems among young students in Japan. However, we have to

consider the multiplicity for the evaluation of subjective symptoms using the questionnaire. The confidence of this original questionnaire made by us have to be examined. The statistical analysis must be considered more precisely when we compared groups A and B since some of the subjects were the same students.

With respect to mental status, the rate of the preparatory school students who answered 'most of the time' to the question "I find it easy to do the things I used to" is approximately one-fifth that of new employees and one-third that of new medical students. The rate of the preparatory school students who answered 'most of the time' to the question "I am more irritable than usual" is approximately 12 times that of new medical students, and 6 times that of new employees. These results show that some of the preparatory school students became depressed. However, SDS score of preparatory school students was not significantly higher than those of the control groups.

The highest SDS score was 80, and the lowest 20. The higher this score, the more serious is the depression estimated to be. Almost all reports suggest that the mean score of normal persons is around 35, with in general younger persons showing higher scores.⁷⁻¹⁰⁾ Yoshitake⁹⁾ reported that Japanese university male students' mean SDS score is 38.7, and standard deviation is 7.85, while older office workers and factory workers' mean SDS score is 35.7, and standard deviation is 8.40. We found no evidence that the depression score of the preparatory school students is significantly higher than those of their peers in this study. One of the reasons must be that most preparatory school students have a long-term objective to pass an examination, and their strained spirit prevents them from becoming depressed. This investigation was performed six months after their graduation from high school, and so it is possible that preparatory school students who had been seriously troubled with depression were excluded. On the other hand, the mean SDS score of the new employees is also higher than that of normal persons reported. It is possibly because the investigation was performed just after graduation from high school. Moreover, the result on new medical students obviously could also be influenced by their hard curriculum as these factors are practically unavoidable.

Through various questions on lifestyles, subjective symptoms, and mental status, we think that most of the preparatory school students have restricted and anguished lives in which some of the altered lifestyles induce physical and mental adverse health effects in some of these individuals. However, SDS score of preparatory school students was not significantly higher than those of the control groups.

Reference

- 1) Kodansha International Ltd. Talking about Japan-Q&A. Tokyo: Kodansha International Ltd., 1996.
- 2) Reischauer EO. The Japanese. Tokyo: Tuttle Company Inc., 1977.
- 3) Heibonsya Ltd. The world encyclopedia. Tokyo: Heibonsya Ltd., 1988.
- 4) Yabana F. Mental hygiene of persons who failed the entrance examination of the university. Education & Medicine 1988; 59: 363-9.
- 5) Zung WWK. A self-rating depression scale. Arch Gen Psychiat 1965; 12: 63-70.
- 6) Fukuda K, Kobayashi S. Manual of self-rating depression scale; Japanese version. Kyoto: Sankyobo, 1983.
- 7) Fukuda K, Kobayashi S. Studies on self-rating depression scale. Jpn J Psychiat Neuro 1973; 75: 673-9.
- 8) Nishikiori S. Some advanced knowledge and discussion on SDS (Zung). Jpn J Psycho 1977; 17: 219-27.
- 9) Yoshitake H. Modern fatigue and mental health. Kawasaki: The Institute for Science of Labour, 1990.
- 10) Kawakami N, Koizumi A. Validity of self-assessing depression scale in industry. Jpn J Ind Health 1986; 28: 360-1.