

Better sleep and health by assuring proper wakefulness during the day

In the Hiroshima Prefecture, health promotion activities to ensure proper daytime wakefulness and nighttime sleep are spreading under the "Mental and Physical Wellness Program." A new mini day service plan has also been proposed and implemented. This plan combines short naps, which are effective in preventing lifestyle-related diseases, and laughter and evening longevity exercises, which promote motivation and vitality.

Ensuring comfortable wakefulness with short daytime naps, laughter therapy and light evening exercise

In addition to helping people acquire habits of the short naps and longevity exercises mentioned above, this program offered brain activation exercises including laughter and group work in the time between the end of the nap and the evening longevity exercises. This helped to rest the brain and give sharpness to activities, to better ensure maintenance of wakefulness in the afternoon after 3:00

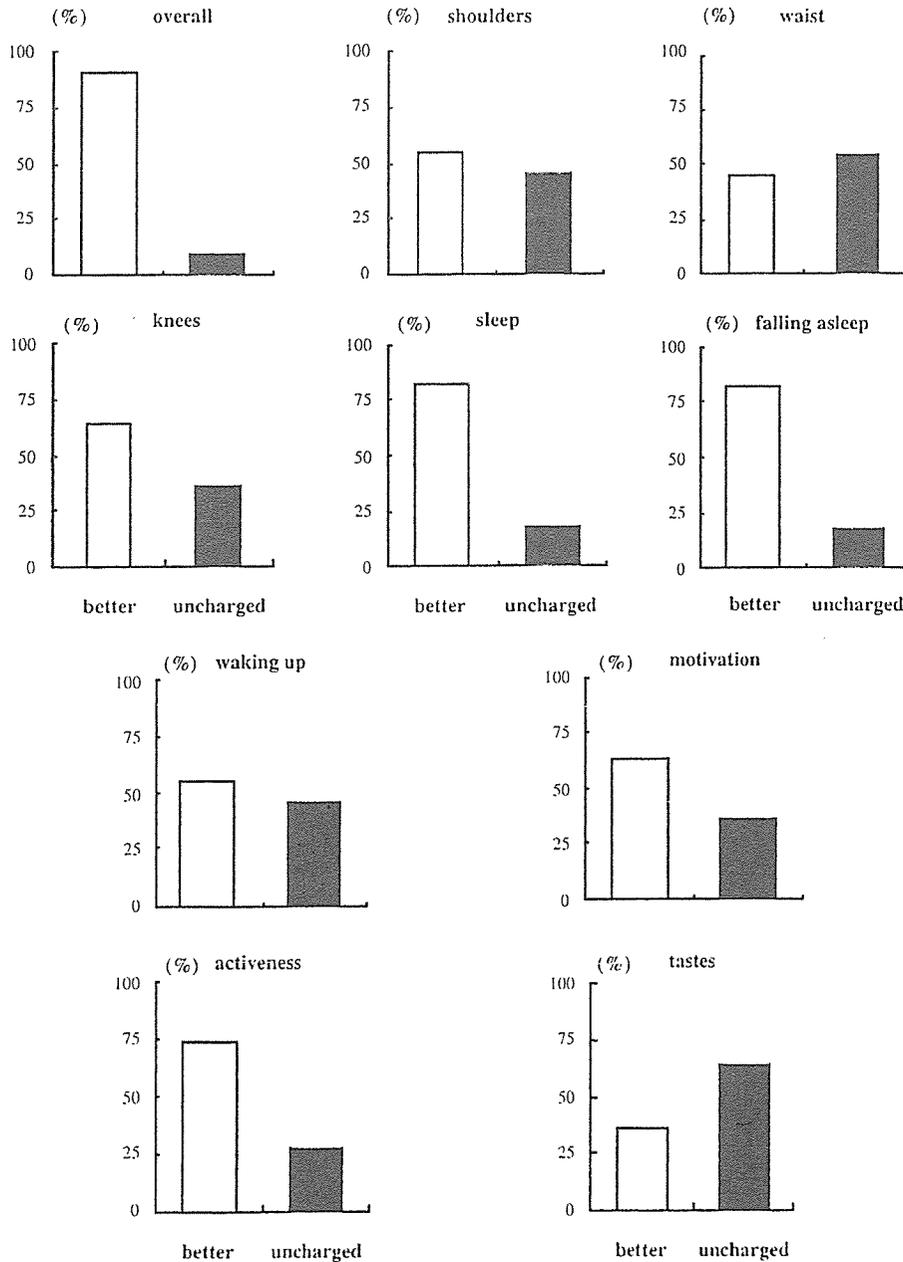


Fig. 13. Level of improvement using the subjective physical condition assessment sheet.

o'clock, a time that strongly affects nighttime sleep. Elderly people with few acquaintances gathered at a city welfare center twice a week for 2 months, napped together in the early afternoon, enjoyed group activities and learned a lifestyle and daily activities to be used in building a good environment for sleep and wakefulness. A good environment for sleep and wakefulness was formed with the aim of improving mental and physical health and brain function.

The subjects of this study were 23 elderly people who gave informed consent for their participation. The effects of the class were compared before and after participation in the Wellness Program (Table 3). The level of sound sleep was significantly improved, and subjective symptoms of fatigue were significantly reduced from 6.9 to 4.2. Moreover, there was a significant reduction in the percentage of people who complained of disorientation, apprehension and a loss of patience. After the class, there was also a significant increase in rise in the results of a test of the *kana* syllabary, which was a simple measure of brain function. Thus, the development of good habits from participation in the class was found to improve sleep state, mental and physical health and brain function. By living a life in which there is a clear distinction between activity and rest, in which the brain and body are rested with short naps, the brain is activated with laughter, group work and recreation, and the brain and body are activated with exercise, the elderly can maintain proper wakefulness throughout the day (from waking until going to bed), and nighttime sleep can be improved. The creation of a good cycle between sleep and wakefulness can give rise to a positive synergistic effect in the improvement of mental and physical health and brain function.

Spread of health promotion activities for the brain and mind in the community

These results are beginning to spread in trials to support efforts for the prevention of dementia, lifestyle-related diseases, and bed confinement, and improve QOL and ADL of the elderly. Through middle-aged leader training and the formation of clubs that accompany the classes, motivation and the awareness of one's role among the elderly are increased, leading to more active seniors. In

addition, with regular rounds by specialized staff including public health nurses, exercise instructors and psychologists, and proper living guidance and encouragement, we may look forward to these clubs continuing and taking root. Strengthening social support systems focused on community residents themselves, which support health promotion of the brain and spirit, will become increasingly important in the future. In the coming age, sleep will no longer be a simple life maintenance phenomenon in which people sleep because they are tired. Rather, the time has come for us to change our understanding so that measures to prevent insomnia are regarded as essential in health promotion for both the brain and the spirit, and the community as a whole addresses this issue in earnest.

Appendix

Sleep Health Risk Index (five sleep-health risk factors)

Question 1. Intermittent waking

How many times during the night (during sleep) do you wake up?

(1) None (2) About ___ times per night

If you do not wake up during the night, score 0 points. Score 1 point for each time you wake up until 4 times. Score 4 points if you wake up 4 times or more. Multiply your total score by 3/4 so that all questions are evenly weighted. The maximum score is thus 3.

Question 2. Feeling of sound sleep

How deep is your usual sleep?

(1) Sound (2) Generally sound (3) Neither
(4) Generally poor (5) Poor

Score 0 points for a response of "Sound" and 4 points for a response of "Poor." Multiply your total score by 3/4 so that all questions are evenly weighted.

Question 3. Frequency of nocturnal urination

About how many times do you go to the toilet during the night?

(1) Do not go (2) Go about ___ times per night

As with mid-sleep arousal, score 0 points for 0 times, and 4 points for 4 or more trips to the toilet. Multiply your total score by 3/4 so that all questions are evenly weighted.

Question 4. Early morning awakening

Do you awake too early in the morning?

(1) Frequently (2) Sometimes (3) Occasionally
(4) Never

Score 0 points if you answered "Never" and 3 points if you answered "Frequently." The maximum score is 3. Score each of the following questions (5–14) in the same manner.

Table 3

Comparison of sleep, mental and physical fatigue, and brain function between pre- and post-intervention in the Wellness Program

	Pre	Post	t/χ^2 value	<i>P</i>
Subjective symptoms of fatigue	6.9 (4.2)	4.2 (2.8)	2.49	<.05
Complains of disorientation	29.4%	5.9%	3.24	<.10
Complains of apprehension	52.9%	17.6%	4.64	<.05
Loss of patience	41.2%	5.9%	5.88	<.05
Score of the <i>kana</i> syllabary	27.2 (9.3)	38.4 (14.8)	4.00	<.05

Question 5. Nocturnal partial arousals

Are you told you are groggy at night?

- (1) Frequently (2) Sometimes (3) Occasionally
(4) Never

Question 6. Kanashibari

When sleeping at night are you struck with a feeling of being tied down (Kanashibari)?

- (1) Frequently (2) Sometimes (3) Occasionally
(4) Never

Question 7. Vivid nightmare during falling asleep

Do you have vivid, frightening dreams as you are about to fall asleep at night?

- (1) Frequently (2) Sometimes (3) Occasionally
(4) Never

Question 8. Restless legs, abnormal limb movements

Are you told your legs twitch or kick during the night, or do your legs become restless and uncomfortable when you get sleepy?

- (1) Frequently (2) Sometimes (3) Occasionally
(4) Never

Question 9. Hypnotics

Do you take sleeping medicine or tranquilizers to sleep?

- (1) Frequently (2) Sometimes (3) Occasionally
(4) Never

Question 10. Snoring

Do you snore?

- (1) Frequently (2) Sometimes (3) Occasionally
(4) Never

Question 11. Sleep breathings

Are you told that you stop breathing during your sleep?

- (1) Frequently (2) Sometimes (3) Occasionally
(4) Never

Question 12. Difficulty arising

Can you get out of bed when it is time to get up?

- (1) I can get up easily (2) I can get up with a little effort
(3) I can get up with considerable effort
(4) I cannot get up no matter how hard I try

Question 13. Sleep latency

How long does it normally take you to fall asleep after getting into bed?

Generally about ___ minutes

Score 0 points if sleep latency is less than 10 minutes, 1 point if 10–20 minutes, 2 points if 20–30 minutes, and 3 points if more than 30 minutes.

Question 14. Getting out of bed

About how long does it take you get up after waking in the morning?

Generally about ___ minutes

Score 0 points if the time until getting up is less than 10 minutes, 1 point if 10–20 minutes, 2 points if 20–30 minutes, and 3 points if more than 30 minutes.

Five sleep-health risk factors

- (1) sleep maintenance problems, Question 1, 2, 3, 4
(2) parasomnia-like problems, Question 5, 6, 7, 8
(3) sleep apnea, Questions 10, 11
(4) difficulty waking up, Question 12, 14
(5) difficulty initiating sleep, Questions 9, 13

From the questionnaire involving life habits and sleep health [23,24], five sleep-health risk factors were determined by factor analysis, and these were scored as follows: (1) sleep maintenance problems, (2) parasomnia-like problems, (3) sleep apnea, (4) difficulty waking up and (5) difficulty initiating sleep. Furthermore, the total score of each factor score was calculated as the Sleep-Health Risk Index.

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