

Corroborative Research Related to Internet Based Mental Health Evaluation and the Usefulness of Mental Health Counseling

— Establishing a System That Busy Workers Can Use at Anytime From Any Where —

Field name "Worker's mental health"



We established a convenient Internet-based mental health checkup system (MENTAL-ROSAI) (Fig. 33) that workers can use whenever and wherever they wish. We clarified that MENTAL-ROSAI is a useful screening method for early detection of depression ^{1, 2, 3}.

6 Develop an Internet-based system that replies to the responder with a "Personalized report" comprising the above information

7 Furthermore, based on the test results of the individual system we collect information from the individual workplaces regarding the presence or absence of stress, stressor types, the degree of stress, and how to improve the situation

8 Develop a business-cooperative system that generates reports for business

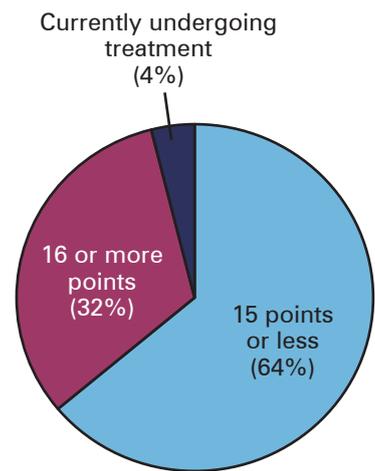


Fig. 32. CES-D test results
32% of the participants in the mental health check exhibited a CES-D score of 16 or higher indicating suspected depression and were encouraged to consult a specialist. We clarified that in this way MENTAL-ROSAI can effectively prevent depression and escalation to the level of a serious disease.

Fig. 33. Outline of the Internet-based mental health checkup

References:

- 1) Yamamoto H., et al.: Research on the relationship between the workplace and worker mental health disorders and research, development, and dissemination of a treatment method and preventative measures, Research report. The Japan Labour Health and Welfare Organization, Clinical Research Center for Worker's Mental Health, 2008.
- 2) Yamamoto H.: Corroborative research related to Internet based mental health evaluation and the usefulness of mental health counseling - establishing a system that busy workers can use at anytime from any where. Research report, The Japan Labour Health and Welfare Organization, Clinical Research Center for Worker's Mental Health, 2007.
- 3) Yamamoto H.: Corroborative research related to internet based mental health evaluation and the usefulness of mental health counseling - establishing a system that busy workers can use at anytime from any where - (Part 2). Research report. The Japan Labour Health and Welfare Organization, Clinical Research Center for Worker's Mental Health, 2008.

Research and Development of Objective Evaluation Method for Depression Using ^{99m}Tc-ECD SPECT Imaging of Cerebral Blood Flow

— Research and Development of an Objective Rating System for Depression Images Based on Images of the Brain —

Field name "Worker's mental health"

Based on an objective evaluation method of brain images taken of patients suffering from depression using ^{99m}Tc-ECD Single Photon Emission Computerized Tomography (SPECT) imaging, we observed decreased blood flow in the left brain (frontal / parietal lobes, etc.) of the patients in the group suffering from depression and the decreased

blood flow ameliorated in the remission stage (Fig. 34). Furthermore, we clarified that there was a decrease in the blood flow in the right cephalic fold due to the accumulation of fatigue in the group suffering from depression^{1, 4, 5, 6} (Fig. 35).

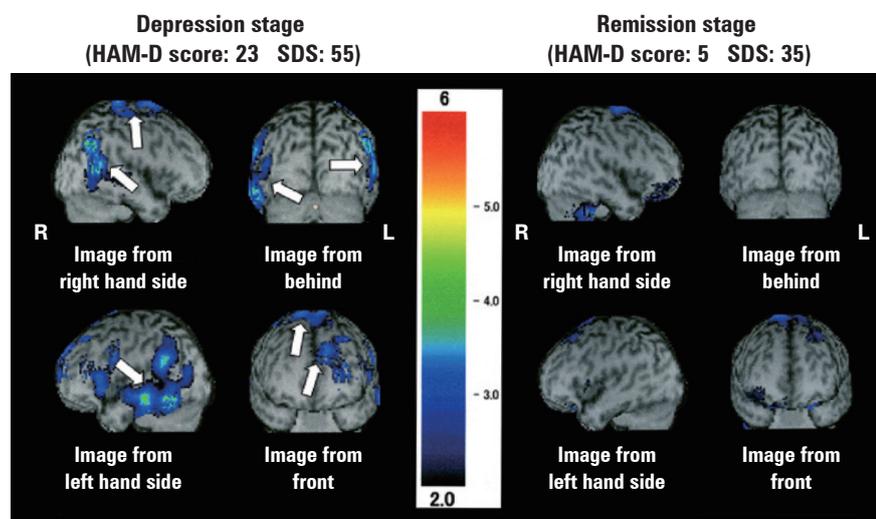


Fig. 34. Examination of the cerebral blood flow using ^{99m}Tc-ECD SPECT imaging

The large blue regions indicate decreased blood flow during the depression stage. In the remission stage, the blue areas are smaller (^{99m}Tc-ECD is a cerebral blood flow scintigraphy agent used in SPECT imaging).

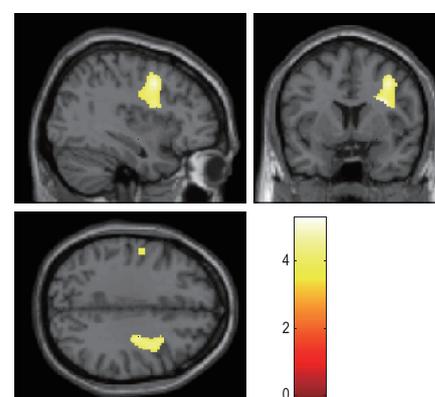


Fig. 35. SDS fatigue item and SPECT

In the group suffering from depression, the higher that a person scored on the fatigue item point scale in the SDS (Self-rating Depression Scale) test, the more significant blood flow decrease is expressed (yellow region) in the right frontal lobe.

References:

- 4) Koyama F.: Research and development of objective evaluation method for depression using ^{99m}Tc-ECD SPECT imaging of cerebral blood flow - Research and development of an objective rating system for depression images based on images of the brain. The Japan Labour Health and Welfare Organization, Clinical Research Center for Worker's Mental Health, 2007.
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- 6) Koyama F., Hojo K., Otsuki K., and Yamamoto H.: Changes in regional cerebral blood flow correlate with symptoms of depression and severity of fatigue in ^{99m}Tc-ECD SPECT study in 45 Workers. Japanese Journal of Occupational Medicine and Traumatology, 56:122-127, 2008.

* Reference 1 can be viewed at <http://www.research12.jp/h13/index2.html>, a site dedicated to the research and development, and dissemination projects related to the 13 fields of occupational injuries and illnesses.

* References 3 and 5 can be viewed at <http://www.research12.jp/h13/index.html>, a site dedicated to the research and development, and dissemination projects related to the 13 fields of occupational injuries and illnesses.