Goal9 Realization of a mentally healthy and dynamic society by increasing peace of mind and vitality by 2050.

Realization of a society where people can live a forward-looking life in the face of adversity.

Here begins our new MIRAI

MOONSHOT
RESEARCH & DEVELOPMENT PROGRAM

R&D Theme

Maemuki (Forward-looking) ELSI and social applications

Progress until FY2022

1. Outline of the project

This R&D theme is responsible for the ELSI and social application of "Maemuki (forward-looking)". By accomplishing this R&D theme, we will evaluate Maemuki in various social situations and clarify the elements and degree of Maemuki leading to desirable mental states in populations with various attributes and situations (different life stages such as children, adults, and the elderly; different mental states such as palliative care patients and mania and depression) This will contribute to the project's goal of developing positive estimation and assistive technologies.

The challenge in achieving this goal is that the definition of "Maemuki" is different depending on life stage and health status, and at the same time, it is difficult to conduct an objective evaluation method of Maemuki based on the same criteria because of differences in physical functions and body size. We are also working on the development of Maemuki evaluation and intervention methods that take ELSI into account, with the idea of assisting and training Maemuki in accordance with the individual's situation and needs.

Fig.1 Evaluation of developmental stage, aging stage, and patient's Maemuki based on posture.

2. Outcome so far

(1) Multi-faceted definition of Maemuki: Literature review and discussions were conducted, and a total of nine study meetings were held during the fiscal year. In relation to Maemuki concept and resilience research, we focused on the medio-passive view of Maemuki. This was considered to be an important perspective when considering ELSI for Maemuki assistive technology.

(2) Interview survey with palliative care patients: Through direct interviews with cancer patients, we clarified the psychological state unique to cancer patients and the way they perceive Maemuki.

(3) Interview survey of patients with psychiatric disorders: Through direct interviews with patients with depression, mania, and addiction, the unique psychological states and Maemuki of patients with psychiatric disorders were clarified.

(4) Improvement of the experimental environment for patients: We established a recruiting and experimental support system necessary for conducting surveys and measurements on palliative care patients and patients with neuropsychiatric disorders.

(5) Interview survey targeting the developmental period: Through direct interviews with students from early elementary school to high school, we clarified the psychological state and Maemuki during the developmental period.

(6) Development of an experimental environment for the developmental period: We held meetings with the principals of elementary schools, junior high schools, and high schools, and prepared an experimental environment to conduct posture measurement and Maemuki questionnaire survey targeting the developmental period.

(7) Construction of a simple posture measurement system: We combined two digital cameras and body motion measurement software using AI video analysis to construct a system that enables posture measurement in a short period of time per person, and can collect large scale data.

Fig.2 Motion capture and plantar sensor with AI

Fig.3 Posture measurement for college students

3. Future plans

In FY2023 and beyond, we will collect data from palliative care patients, patients with neuropsychiatric disorders, and children in the developmental period. As these data are obtained, patient-specific, life-stage-specific, and developmental age-specific characteristics will be identified, and "Maemuki" evaluation methods for each will be developed. In parallel, the ELSI for "Maemuki" assistive training based on the needs of society will also be studied.
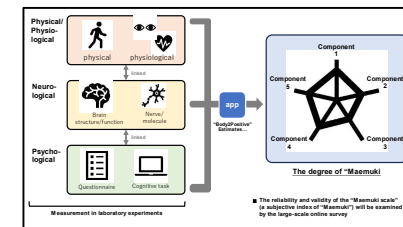

Fig.3 Our future plan

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