

## Abstract

**Background:** A large part of explanation for endoscopy is repetitive task from the medical staff perspective. To reduce the labor of the medical staff, substitution of explanation by information technology is expected. This capstone project illustrated the process of video materials and chatbot system for endoscopy explanation and evaluated them with the medical staff and potential users.

**Methods:** We designed the intervention after collecting information from the medical staff by semi-systematic interviews and group meetings after mapping stakeholders. Some updates were executed for conventional explanation. Video materials were made with VYOND animation software. A rule-based chatbot system was developed with Dialogflow-cx on LINE. Usability, feasibility and technical stability were assessed by two potential users with a system usability scale and additional questionnaires. They were also assessed by the medical staff with non-systematic interviews.

**Results:** We developed 8 video materials and a chat system in accordance with information collected from the medical staff. Three video materials were evidence-based videos while five video materials were process-explanation videos. How to take care of low digital literacy patients was the largest concern. We developed a system separately taking care of low digital literacy patients and high literacy patients. Potential users valued the products as 90 points for system usability scale and they said that patients younger than 60 years old could use the system. The medical staff also evaluated the system as usable, feasible and technically stable.

**Conclusion:** We developed video materials and a chatbot system for endoscopy explanation. The feasibility, usability and technical stability was validated by two potential users and the medical staff. The system could be implemented in clinical settings in the future.

**Keywords:** video, chatbot, endoscopy