Proposal of LLM-Based Chatbot for Clinical Psychological Counseling of Autistic Adolescents

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The diagnosis rate of ASD in adolescents has increased since 2002. According to the Centers for Disease Control and Prevention's 2020 report, there is 1 child with ASD in every 36 children. As early intervention for autism results in a better prognosis, the needs for early intervention are subsequently augmented. Mitigation effects on difficulties in the social communication of children with ASD through continuous exposure to communication situations have been proved, while robots can provide these communications. However, former studies on Human-Robot interaction for psychotherapy of people with ASD are limited in technological terms as the robot only deals with simple instructions. Hence, this study introduced an advanced technology in psychotherapeutic practices, the Large language model(LLM). Through training and prompt engineering on the Chat-GPT 3.5 turbo model from OpenAI with diagnostic features of ASD and ethical consideration in psychotherapy provided by DSM-5 and Ethic Codes from APA, this model provides advanced communication practices optimized for ASD patients. The model can streamline the early stages of consultation of exploration and problem identification as it reports the conversation summary to professionals. This study explores the potential usage of LLM in real-world psychotherapeutic practices which can prospectively relieve increasing stress upon a limited number of professions in the field of psychotherapy for ASD patients, which will lead to an increased number of ASD patients to get the intervention that they need. Further research with more refined LLM may prove enhancement in direct social communication skills of people with ASD.

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