

Exploring ChatGPT's Communication Behaviour in Healthcare Interactions: a Psycholinguistic Perspective

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Objectives: Conversational artificial agents such as ChatGPT are commonly used by people seeking health-care information. This study investigates whether ChatGPT exhibits distinct communicative behaviors in healthcare settings based on the nature of the disorder (medical or psychological) and the user's communication style (neutral vs. expressing concern).

Method: Queries were conducted with ChatGPT to gather information on the diagnosis and treatment of two conditions (arthritis and anxiety) using different styles (neutral vs. expressing concern). ChatGPT's responses were analyzed using Linguistic Inquiry and Word Count (LIWC) to identify linguistic markers of the agent's adjustment to different inquiries and interaction modes. Statistical analyses, including repeated measures ANOVA and k-means cluster analysis, identified patterns in ChatGPT's responses.

Results: ChatGPT used more engaging language in treatment contexts and psychological inquiries. It exhibited more analytical thinking in neutral contexts while demonstrating higher levels of empathy in psychological conditions and when the user expressed concern. Wellness-related language was more prevalent in psychological and treatment contexts, whereas illness-related language was more common in diagnostic interactions for physical conditions. Cluster analysis revealed two distinct patterns: high empathy and engagement in psychological/expressing-concern scenarios, and lower empathy and engagement in neutral/physical disease contexts.

Conclusions: These findings suggest that ChatGPT's responses vary according to disorder type and interaction context, potentially improving its effectiveness in patient engagement.

Practice implications: Through context and user-concern language adaptation, ChatGPT can enhance patient engagement.

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Primary author: BIASSONI, Federica (Dipartimento di Psicologia, Università Cattolica del Sacro Cuore)

Co-author: GNERRE, martina (Università Cattolica del Sacro Cuore)

Presenter: BIASSONI, Federica (Dipartimento di Psicologia, Università Cattolica del Sacro Cuore)

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