TITLE: E-HEALTH SOLUTIONS FOR AMYOTROPHIC LATERAL SCLEROSIS PATIENTS: A CHATBOT FOR DIETARY MONITORING

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ABSTRACT

Background and aims: Nutritional status is one of the most relevant prognostic factors in Amyotrophic Lateral Sclerosis (ALS), and close monitoring can help avoid severe weight loss over the disease course. We aimed to describe the impact of a technological chatbot on improving the communications between healthcare providers and patients and caregivers for dietary monitoring.

Methods: We developed a chatbot that provides patients a tool to register their meals through a simple and carefully designed conversational interface. Patients recorded dietary intake three times a week, and they received a nutrition recommendation biweekly. Of these, we monitored body mass index (BMI), caloric intake, need for artificial supplementation and/or thickeners, and ALSFRS-R.

Results: A total of 26 patients were enrolled and monitored for six months, for a total of 554 fillings (mean of 21/patient). From the recorded data, it appears that patients, on average, ate ¾ of recommended portion, and 66% maintained the caloric intake during the six-month follow-up. The mean BMI at chatbot onset was 24.00 (SD: 3.82) which remained stable over time (BMI 23.67 (SD: 2.87)). During chatbot monitoring, 45% of patients required artificial supplementation, 11.5% had a gastrostomy tube placed.

Conclusions: A positive evaluation was obtained both on patient well-being and physicians' perspective. Also, following these patients with frequent monitoring turned out to help prevent further weight loss due to integrating caloric needs and dietary changes. The solution discussed in this work also provided a significant impact during the COVID-19 emergency.