

# **An app monitors cancer patients' health status and rewards participation**

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Close2U, an electronic device application, has been developed by researchers at the Complutense University (UCM) and the University of Zaragoza (UZA) to monitor cancer patients' physical and mental health using gamification.

Users answer a series of daily questions about their mood and where they are experiencing pain. In return, the app rewards them in the form of advice or songs, resources intended to increase their motivation.

"The use of gamification enables more continuous monitoring of [cancer patients](#) by obtaining frequent information about their mood. Among other things, this lets us know if they are depressed, stressed or in pain," explained Iván García-Magariño, a researcher in the Department of Software Engineering and Artificial Intelligence at the UCM.

The study was conducted in collaboration with the Spanish Cancer Association (Spanish initials: AECC), primarily at its branch in Teruel, where patients tested the app.

Researchers from both universities have reported development of the app and the results obtained in the *Journal of Biomedical Informatics* and *Journal of Healthcare Engineering*.

## **Exchange of resources among patients**

For example, for the question "How did you sleep?", users mark a point on a horizontal line between the two extremes "very badly" and "very well," while for the question "Where in your body are you experiencing pain?", the screen displays an image of a body on which patients mark areas affected by [pain](#).

The information obtained from their answers is sent to a hospital or association physician.

In return, patients are rewarded with advice or songs which "are intended to amuse and entertain them, and which they can also share with other [cancer](#) patients to provide mutual support," observed García Magariño.

He also noted that the researchers were working on incorporating the app on other devices such as smart furniture or watches. "We don't know exactly when our products will be available to the general public because that will depend on our resources and interest from potential users," he concluded.

Close2U is an e-Health action and meets objectives such as automatic data capture without requiring any explicit action on the part of users, and smart data analysis, alerting healthcare staff when appropriate.

**More information:** Javier Navarro-Alamán et al, Close2U: An App for Monitoring Cancer Patients with Enriched Information from Interaction Patterns, *Journal of Healthcare Engineering* (2020). [DOI: 10.1155/2020/3057032](#)

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