

A new app monitors cancer patients' quality of life, helps doctors make the best decisions for treatment

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Credit: Universitat Politècnica de València

A team from the Universitat Politècnica de València (UPV) has developed a new mobile application that facilitates the continuous

monitoring of the quality of life of cancer patients.

The app, called Lalaby, allows the patients' day-to-day life to be monitored from the information collected by sensors located in their [mobile phone](#) and other sources stored therein, which facilitate calculating their [physical activity](#) (movement), [social interaction](#) (voice frequencies) and web activity (amount of data used).

In addition, Lalaby can incorporate questionnaires, such as EORTC QLQ-C30 (European Organization for Research and Treatment of Cancer—QLQ-C30), which are widely used to assess the quality of life. It also allows the patient to directly record the activities they perform (household chores, personal hygiene, watching TV...), their symptoms (vomiting, shortness of breath, tiredness...) and their level of pain.

"In addition, to guide patients in their interaction with the app, Lalaby includes a notification system that reminds them what information they should report at a given time, and directs them with a click to the screen that they must use for that purpose," adds Ángel Sánchez García, a researcher from the BDSLab group at the Universitat Politècnica de València's ITACA Institute of Information and Communication Technologies.

From all this information, Lalaby can deduce user behavior patterns and relate them to quality of life indicators. "Such patterns can be of great help, for example, to monitor possible changes in the mood, activity, symptoms, etc. of people starting [cancer treatment](#), thus providing doctors with information that can be most valuable in helping them make the best decisions possible for the patients' day-to-day life," explains Juan Miguel García-Gómez, the director of the BDSLab group.

Among the most remarkable aspects of the Lalaby app, besides the fact that it incorporates and registers all the patient information so that

doctors can consult it on the app dashboard, are its user-centered graphic design and its intuitive nature. These "make this app much easier for patients to use and accept," points out Sabina Asensio-Cuesta, a researcher at the BDSLab group.

The Lalaby app's graphic design is the result of a competition, to which students from UPV's School of Design Engineering submitted 44 proposals. It was this competition that gave the app its name and provided the germ of its graphic design.

For the validation of the Lalaby app, the UPV team has had the advice and collaboration of Inmaculada Maestu, Head of the Medical Oncology Service of the Dr. Peset Hospital (València); Maria Martín, from the same hospital; and Teresa Soria, an oncologist. It is precisely with patients from this hospital—specifically, lung [cancer patients](#)—that the first trials for the validation and improvement of the app are being carried out.

Among the advantages of continuous monitoring, the team from the UPV and the Dr. Peset Hospital points out that it facilitates observing the evolution of patients during the course of active cancer treatment, when it is crucial to make decisions aimed at maintaining their functionality and quality of life.

Dr. Inmaculada Maestu draws attention to the fact that "the Lalaby app allows us to have more information regarding the patient's symptoms, both those related to the disease itself and those derived from the treatments applied. This facilitates controlling the disease, and can help us make therapeutic decisions. It also helps patients maintain better communication with the medical team, as it enables them to express their state of health in real-time. In this way, their quality of life can be improved by taking action at the right moment.

In addition to oncology patients, Lalaby can also be adapted to study the quality of life of people with migraine or chronic COVID-19 symptoms, among other pathologies.

"The app makes it possible to correlate the data stored by mobile phones with questionnaires used to evaluate these and other chronic diseases, hence its potential," concludes Sabina Asensio-Cuesta.

Provided by Universitat Politècnica de València

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