Wise Hands: Tonic-Clonic Epileptic Crisis Alert Device

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Epilepsy affects about 3 million Brazilians and 50 million people worldwide, with 50% of cases having tonic-clonic seizures. The project "Wise Hands - Tonic-Clonic Epileptic Crisis Alert Device" aims to develop a device for monitoring people with this crisis so that, when it occurs, alert caregivers and/or family members in order to prevent further damage to the epileptic during sleep. Therefore, the objective of the research is to develop a prototype capable of detecting this crisis through tremors and contractions of the patient's hand and sending an alert through an application. The research methodology aims to develop the prototype and has eight stages. The first consists of bibliographic research on the crisis. A questionnaire was carried out that addresses questions and main points for the continuity of the project, with nine questions in total. To be sure that the symptoms together can easily indicate a seizure, a two-question interview was conducted with a neurologist. Then, the electronic circuit for the assembly was developed, the sensors that will be used to detect the symptoms are: the micro switch and the accelerometer. These, which are controlled by the micro:bit and packaged in a glove, when activated, allow the card to emit signals so that the application can sound the alarm. The interview and the questionnaire brought positive responses and confirmed the need and the interest of the target audience in this project. The results of the prototype are partial: the micro switch is promising for the detection of the symptom, as the programming when pressed presses an LED. After bibliographic research, the accelerometer is expected to act in the same way so that the device is effective and comfortable in detecting tonic-clonic epileptic seizures.

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