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Pain Assessment Method and Apparatus for Patients Unable to Self Report Pain

Tech ID: 29571 / UC Case 2018-520-0

BRIEF DESCRIPTION

Though pain assessment is a crucial part of many medical treatment plans, most physicians rely on patients self-reporting their own pain levels. This self-reporting strategy may be convenient to some patients trying to determine whether the patient should get to a doctor, but in some situations, especially where a patient is non-communicative or incapacitated, these patients may be unable to clearly express themselves to a medical professional. As such, researchers at UCI have developed a novel device that automatically and objectively monitors a patient's pain levels by tracking/monitoring subconscious facial movements in real-time.

FULL DESCRIPTION

Pain tracking and management is a crucial part of most medical treatment plans, particularly in the case of post-operative and chronic disease care. Medical care professionals typically rely on the patient to self-report their pain levels, which is often communicated verbally or in writing, using finger spans or blinking patterns. Self-reporting pain methods can potentially pose problems for patients who are unable to express their pain levels clearly, such as patients in intensive care, young children, and those who have cognitive or physiological disabilities. Additionally, pain and pain interventions are largely subjective and can depend on age, mood, culture, and hospital policies and biases.

To provide an objective measure of pain that does not rely on patient's input, researchers at UCI have developed an automatic pain assessment tool that can replace the self-reporting method. This novel device by our researchers consist of a soft plastic mask which continuously monitors a patient's facial expressions and subsequently determines pain levels according to a protocol. The invention also includes an accompanying web application which processes the data exported by the mask, presenting the physicians with near, real-time and objective measure of the pain experienced by the patient.

SUGGESTED USES

For the objective, real-time assessment of patient pain levels

ADVANTAGES

· Continuous, automatic, and objective: The device provides a continuous and objective measure of pain and as such, does not rely on patient input.

· All-inclusive and rapid: The device is linked to an external web application which automatically processes the data, providing physicians with near-real-time analysis of a patient's pain levels.

· Comfortable and customizable: As the mask is made from a soft and stretchable plastic, it is comfortable and easily molded to the shape of the patient's face. The mask itself is disposable after each use, reducing the risk of inter-patient contamination.

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OTHER INFORMATION

CATEGORIZED AS

» **Computer**
  » Software
» **Medical**
  » Devices
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  » Research Tools
  » Software
» **Engineering**
  » Other

RELATED CASES

2018-520-0

· Adaptable: The device can be used in conjunction with other methods of objective pain assessment, such as an EKG.

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Published Application	20220160296	05/26/2022	2018-520
United States Of America	Published Application	20190343457	11/14/2019	2018-520

STATE OF DEVELOPMENT

This device is currently in the working prototype stage.