HEALTHCARE INNOVATION TECHNOLOGY LAB (HITLAB)

A User Experience Study of Rubitection's Skin Care Application

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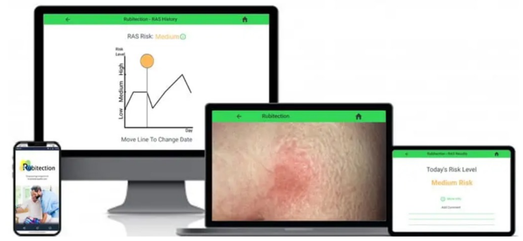


ABSTRACT

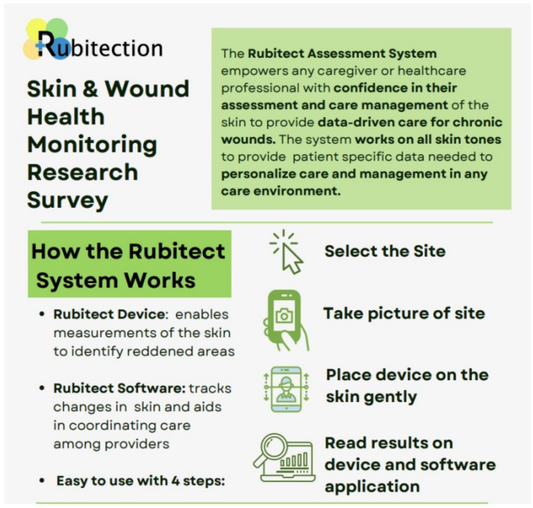
The skin, our body's largest organ, serves multiple functions, including protection against microbes, regulation of body temperature, and facilitation of touch sensation. Skin inflammation or injury often manifests as skin redness, signaling a problem. However, assessing and monitoring skin conditions based on redness can be unreliable, especially as the healing process evolves or worsens, leading to changes in skin color. This manual identification of redness is challenging and inconsistent, complicating accurate risk assessment, condition identification, and healing progress monitoring. Additionally, this challenge is more pronounced in individuals with darker skin tones, as redness cannot be visually or manually detected, exacerbating the issue of accurate assessment and monitoring.

Rubitection aims to address this problem by developing an early skin health monitoring and care management system for wound care, dermatology, and cosmetics. Rubitection's Rubitect Assessment System is a low-cost, easy-to-use handheld device that empowers anyone to monitor the health of their skin to identify a range of conditions early. The device works by measuring the skin's redness, which is an early sign of inflammation and injury. The device then sends the data to a care management software platform that provides personalized care recommendations.

Rubitection's technology has the potential to improve the lives of millions of people who suffer from skin conditions. The company's early skin health monitoring system can help to prevent serious complications from developing, and its care management software can help to improve patient outcomes.

Benefits of Rubitection Technology:

- **Early detection of skin condition**
- **Personalized Care**
- **Reduced Costs**



OBJECTIVES

- To conduct a Customer reference narrative for the Rubitection software currently in development.

Deliverable elements:

- Uncover certain patterns and themes emerging.
- Build a better understanding of a user and how the user reacts to the product.
- Generate feedback for developmental directions.

STUDY METHODOLOGY

- This user experience study used customer reference narrative.
- The reference narrative is a form of qualitative research in which the researcher focuses on a topic and collects narrative data from interviews, surveys, observations or other similar methods.
- HITLAB generated a survey for 360 potential users of the Rubitection software and presented the descriptive data for the further development of the software.
- The current prototype in 2 forms is being developed for use by bedside nurses and consumers (at-home care givers).
- Survey responses were collected from physicians, wound care nurses and at home care-givers.
- The survey examined the typical user experience of the platform from the perspective of a consumer (at-home care giver) and clinical user (bedside or wound care nurse and physician).
- Consumers (at-home caregivers) and clinical users (bedside or wound care nurses) were recruited from LinkedIn prototype and asked to complete a survey concerning usability of the prototype.

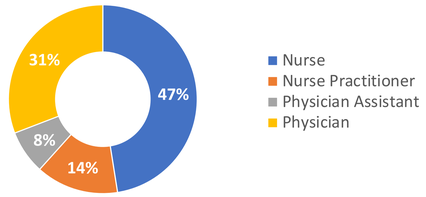
The Rubitect Assessment System

RESULTS

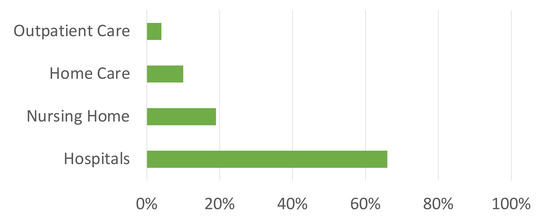
Demographic and Respondent Background Data

- Collected data on Job title, Location of care provided, Number of patients cared for on a daily basis, Number of patients with active or potential bed sores, Respondents with family members as patients, Trained in detecting and assessing pressure injuries, Time spent on pressure injuries per day, Respondents with wound care training, Current method of managing wounds and pressure injuries.

Breakdown of respondents



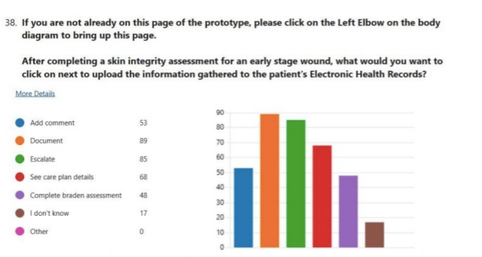
Location of work



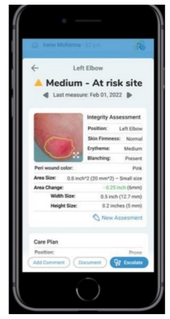
- Most participants **cared for 4+ patients per day** and 73% of responders reported that their patients are not family members.

Skin Assessment User Testing

- Collected information on how well the participants knew how to do following on the app: Getting started, Starting a Skin Integrity Assessment, Capturing an image, Expectation of information in the app, Documenting a skin integrity assessment, Completing a skin integrity assessment, Braden Scores, New wound assessment, Documenting a wound, Care Plan, Repositioning. Below is an example question and response:



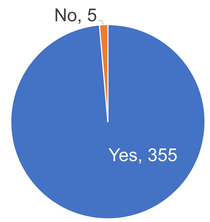
- Responses such as "Complete Braden assessment" seem to indicate that some responders were not paying attention or do not understand



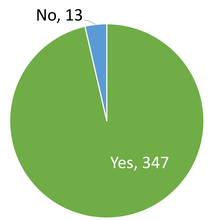
Usability and Likability

- Collected feedback on missing functions, enjoyability, likability, improvement suggestions, usability, and user experience.

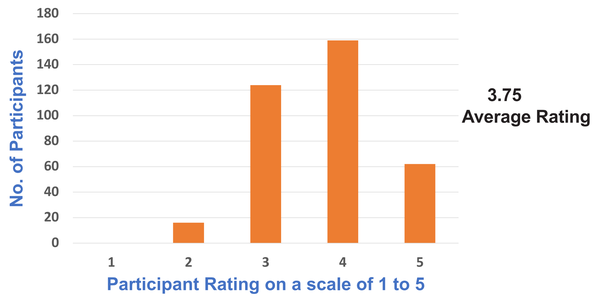
Did you find the application easy to navigate?



Did you enjoy your experience testing this prototype?



Do you think this product will be helpful to you for skin integrity and wound care assessment and management?



CONCLUSION

- Caution should be taken when interpreting results across the board as many responders and responses appear to be exact duplicates and not necessarily logical. Examples:
  - "The device supports multi-language functionality, making it accessible and user-friendly for healthcare professionals from diverse backgrounds."
  - "The device's battery life and charging capabilities ensured continuous usage without interruptions during clinical rounds."
  - "The device's advanced algorithms and machine learning capabilities assisted in early identification of high-risk wounds."
- For many of the prototype functions, there was not a strong consensus on the "correct" choice or answer.
  - Confusion about the prototype
  - Hasty answers without real thought or consideration
  - Following direction from others (copying answers)
- Strong interest and curiosity about the technology.

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