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ABSTRACT

The increasing need for enhanced safety and security for persons with disabilities (PWDs) has prompted the development of specialized assistive technologies, also categorized as wearable technologies. This thesis presents the design, development, and evaluation of "Kalasag", which is a modern security jacket for PWDs, specifically for the Deaf, who currently face language barriers amidst verbal and non-verbal communication.

The jacket integrates a range of features, including a help caller, security alarm system, and digital health record, embedded in a multifunctional jacket to address various safety challenges faced by individuals with sensory impairments.

Employing a user-centered design approach, the project involved consultation with PWDs and experts in clothing and assistive technology to ensure that the jacket meets practical needs while maintaining comfort and ease of use.

The development process of the prototype utilized materials and technologies that enhance durability, functionality, and user comfort, including non-static fabrics and the use of basic electronics. Evaluation results from the creative project involving a target group of three Deaf participants demonstrate that Kalasag has shown potential to improve users' confidence in their personal safety and facilitate efficient emergency response.

This thesis concludes with recommendations toward the incorporation of more advanced technology and in-depth research towards the creation of the jacket for other PWD classifications for further refinement of the jacket's features and potential pathways for commercial production and broader dissemination. The findings contribute to the ongoing efforts to enhance the quality of life for PWDs through innovative assistive solutions.

Keywords: Wearables, PWD, Deaf, Security, Jacket, Technology

Permission Access: Invention; Publication