A Comparative Study of Textual vs. Tactile Identification: Implementing Universal Health Icons on Prescription Medication Bottles for the Visually Impaired

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Despite the availability of digital assistive technology, visually impaired adults often use traditional printed medication labels, which hinder independent identification of medications. Consequently, there is a likelihood of incorrect identification of medications. The aim of this study is to assess whether 3D printed tactile stickers with universal health icons and patterns can enhance the accuracy of medication identification, reduce the time required for identification, and increase the level of independence in identification. It is hypothesized that 3D printed tactile stickers can significantly perform better compared to traditional printed labels. Studies on tactile printlets, Braille labels, Universal Design Systems, among other haptic identification methods, have shown that haptic identification can increase the accuracy of medication identification compared to traditional methods. The aim of this study is to use a convergent parallel mixed method to quantitatively compare the time and accuracy of identification of medications by visually impaired adults. Additionally, the study will use the NASA TLX scale to qualitatively compare the level of workload and satisfaction of the users. The pending results will show an improvement in medication identification accuracy and time when using 3D tactile labels compared to printed labels. For further research, I would like to look into the efficacy of these tactile labels with a larger and more diverse set of participants, as well as more long-lasting manufacturing processes.

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