Talking Prescription Label: Impact on Blood Pressure and Self-Efficacy in Low Health Literate, Hypertensive Patients

Melonia Sue Lillie, DNP
Department of Veterans Affairs, DefinedIT, Slidell, LA, USA

Purpose: Evaluate a talking prescription Digital Audio Label (DAL) and its impact on the potential to decrease blood pressure and increase self-efficacy for prescription medication administration in patients with low health literacy (LHL) and chronic hypertension as well as evaluate the patient perception of usability and ease of use of the DAL to deliver verbal prescription medication information.

Methods: A quasi-experimental, two group, pretest-post-test study was conducted at a free outpatient medical clinic to answer three research questions: (1) is there a statistically significant difference between groups in the mean blood pressure levels before and after the intervention at 30 days, (2) is there a statistically significant difference between groups in the mean Self-efficacy for Appropriate Medication use Scale before and after the intervention at 30 days, and (3) do LHL hypertensive patients score the DAL as easy to use and usable for verbal delivery of prescription medication? A randomized convenience sampling was implemented on chronic hypertension patients with an intervention group who received the DAL and a control group who received usual verbal prescription information from the pharmacist.

Results: A total of 84 patients were evaluated, 52 patients chose to participate, and 26 of the volunteered patients used the DAL. The majority of participants were > 50 years old with an approximate even distribution of males versus females and Caucasians versus African Americans. There were no statistically significant differences found between the groups based on demographics, for blood pressure changes or improvements in self-efficacy scores. The majority of the participants had an overall high perceived usability and perceived ease of use.

Conclusion: Blood pressure decreased, and self-efficacy scores increased after using the DAL inferring a possible positive impact of DAL use. The DAL was rated as very useful and easy to use. Ongoing research is needed to explore the DAL use in patients with new onset hypertension with a larger sample size and longer duration to eliminate the effect of established medication regimes.

Title:
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Keywords:
blood pressure, self-efficacy and talking prescription digital audio label

Abstract Summary:
A randomized, quasi-experimental study to evaluate the effect of talking prescription digital audio labels on decreasing blood pressure, increasing medication self-efficacy and the patient's

perception of usability and ease of use of the label to deliver verbal prescription medication information.

References:

- Allnatt, R., Engelhardt, J., Gao, J., & Mariano, A. (2001). An evaluation of the functionality and acceptability of the voice prescription label. Journal of Visual Impairment & Blindness (JVIB), 95(11). Retrieved from http://web.b.ebscohost.com.graceland.idm.oclc.org/ehost /pdfviewer/pdfviewer?vid=6&sid=b69e9329-184a-45d2-9bbc-eaabc63ba1ec%40session mgr101
- Kamal, A. K., Khalid, W., Muqeet, A., Jamil, A., Farhat, K., Gillani, S. R. A., ... Mustafa, M. (2018). Making prescriptions "talk" to stroke and heart attack survivors to improve adherence: Results of a randomized clinical trial (The Talking Rx Study). PloS one, 13(12). https://doi.org/10.1371/journal.pone.0197671
- Lam, A. Y., Nguyen, J. K., Parks, J. J., Morisky, D. E., Berry, D. L., & Wolpin, S. E. (2017). Addressing low health literacy with "Talking Pill Bottles": A pilot study in a community pharmacy setting. Journal of the American Pharmacists Association, 57(1), 20-29. http://dx.doi.org/10.1016/j.japh.2016.07.003
- Lamarche, L., Tejpal, A., & Mangin, D. (2018). Self-efficacy for medication management: a systematic review of instruments. Patient Preference and Adherence, 12, 1279–1287. Retrieved from http://doi.org/10.2147/PPA.S165749
- Lertwiriyaprapa, T., & Fakkheow, P. (2015). A low-cost audio prescription labeling system using RFID for Thai visually-impaired people. Assistive Technology, 27(3), 149-157. http://doi.org/10.1080/10400435.2014.1004000
- Mullen, R. J., Duhig, J., Russell, A., Scarazzini, L., Lievano, F., & Wolf, M. S. (2018). Best-practices for the design and development of prescription medication information: A systematic review. Patient Education & Counseling, 101(8), 1351–1367. https://doi-org.graceland.idm.oclc.org/10.1016/j.pec.2018.03.012
- Wali, H., Hudani, Z., Wali, S., Mercer, K., & Grindrod, K. (2016). A systematic review of interventions to improve medication information for low health literate populations. Research in Social and Administrative Pharmacy, 12(6), 830-864. https://doi.org/10.1016/j.sapharm.2015.12.001
- Wolf, M. S., Davis, T. C., Curtis, L. M., Bailey, S. C., Knox, J. P., Bergeron, A., ... Wood, A. J. J. (2016). A patient-centered prescription drug label to promote appropriate medication use and adherence. Journal of General Internal Medicine, 31(12), 1482–1489. http://doi.org/10.1007/s11606-016-3816-x
- Zullig, L. L., McCant, F., Melnyk, S. D., Danus, S., & Bosworth, H. B. (2014). A health literacy pilot intervention to improve medication adherence using Meducation® technology. Patient education and counseling, 95(2), 288-291. http://dx.doi.org/10.1016/j.pec.2014.02.004

First Primary Presenting Author
Primary Presenting Author
Melonia Sue Lillie, DNP
DefinedIT
Department of Veterans Affairs
Data Scientist
Slidell, Louisiana
USA

Author Summary: Dr. Lillie is a Board Certified Nurse Informaticist and Data Scientist with the Department of Veterans Affairs. Her specialty is in scientific data analysis and innovative medical solutions designed to reduce health-related errors and increase electronic health record interoperability. Her 20+ years of dedication to nursing expertise is demonstrated by her certifications as a CCRN and CPAN, but also her certifications as a PMP, CPHIMS professional and her recent acquisition of her Doctorate in Nursing.