The HOPE App: An Immersive Telehealth Solution for Older Adults with Diabetes

Mitchell Suzanne, Bhaskara Amith, Dowd Genevieve, Goldberg Abigail, Baker Ariel, Asante Gifty, Londono Angelina

See Yourself Health , Beverly MA

ABSTRACT

- New technologies integrating DSME/S programs have emerged as tools to foster health behavior change, improve diabetes control, and decrease avoidable health service use and cost.
- Type 2 diabetes (T2DM) is an epidemic. An estimated 34 million people in the US have T2DM, and 84 million have pre-diabetes - nearly half of whom are adults 65+ yo, putting many older adults at higher risk of unhealthy aging and cognitive decline. Most technologies supporting DSME/S programs have failed to meet the unique needs of older adults with limited technology fluency, creating a new digital divide.
- See Yourself Health (SYH) aims to bridge this digital health gap for older adults with a newly designed immersive learning and telehealth application – the HOPE App – designed to deliver high-impact, high-engagement diabetes care and DSME/S tailored for older adults with diabetes

OBJECTIVES

Our aims were to **(1)** Develop an immersive telehealth platform for diabetes care using virtual reality and cloud gaming technology enabled with telehealth capabilities and tailored educational content for mobile devices.

(2) Conduct usability testing of the HOPE APP immersive telehealth diabetes care platform with 20 adults over 65 years of age with Type 2 Diabetes.

(3) Explore the feasibility of using the HOPE APP for diabetes care management by older adults over 4 days in a real-life setting using mobile devices.

MATERIALS & METHODS

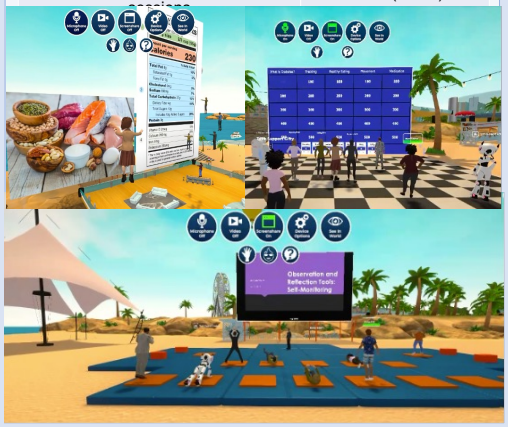
- We designed the HOPE APP, a cloud-based application with touchscreen navigation and content tailored for older adults with diabetes. Two focus groups with target participants identified 20 areas for content development and implemented ten new educational modules.
- We conducted usability testing of the HOPE App and calculated a usability score with the System Usability Scale (SUS). We measured usability in a single one-hour onboarding session and again after participants completed 2-4 group-based DSME sessions using the HOPE App following the onboarding session. Feasibility was determined by evaluating the average user logins and use time from a home setting.

Table 1. Phase I Usability Participants	N=20
Mean age, years	73yo (60-84yo)
Gender, % female	67%
Race/Ethnicity, % Non-Hispanic white	90.50%
Prior experience with VW software	38%
Daily or Multiple times a day internet use	81%
Internet at home	90%
Health literacy, confident completing medical forms without assistance	86%
Late technology adopter	57%

RESULTS

- The mean SUS assessed for the HOPE App after a single 1-hour tutorial session was 66% (56%-82%), which proves the usability of the HOPE APP. In assessing participants who attended 2-4 group-based DSME sessions during feasibility testing, the mean SUS was 71% (60%-83%) indicating enhanced usability with repeated use of the platform.
- All participants **(100%)** successfully logged in remotely. On average, user logins were 3.25 times/week (min 2, max 4) for an average participation time of 3 hours/week, proving the HOPE APP's feasibility.

Table 2. Hope App Usability Testing	Mean SUS
Usability Phase I – after 1 hour tutorial	66.07 (56-82)
Usability Phase II – after feasibility sessions	71.00 (60-83)



CONCLUSIONS

The results of the phase 1 study suggest that the HOPE App is feasible for aging adults to use in home settings for DSME/S and has the potential to become a ubiquitous diabetes management tool to transform persons with diabetes into high-performing drivers of their own care.

REFERENCES

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Connect with us on LinkedIn !

Website: https://www.seeyourselfhealth.com/

Email: info@seeyourselfhealth.com

Phone: (617) 315-8250