Non-Immersive Virtual Reality Gaming to Promote Weight Loss Management amongst African-American Women in the Diabetes Prevention Program


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ABSTRACT

Background: Effective behavioral interventions for obesity have been impeded by poor adherence among racial and ethnic minorities. We conducted a pilot study combining the Diabetes Prevention Program (DPP) with a Non-Immersive Virtual Reality (VR/Avatar) exercise gaming system (video cameras and a motion sensor). Participants control the gaming console using body movement, and see a life like avatar moving in real-time during exercise. The aims of this pilot were to demonstrate feasibility of the VR/Avatar gaming approach and show preliminary efficacy in promoting adherence to DPP and promoting weight loss among African American adult women.

METHODS

We hypothesized that patients would enjoy exercising using the gaming console, exhibit regular attendance at DPP, and lose weight by the end of 16 weeks of the core program. A total of 20 African American women deemed eligible by physicians have been enrolled. A gaming coach/technician visited homes to setup and demo the gaming system between weeks 6 and 8 of DPP. Attendance at DPP sessions, total exercise minutes, gaming exercise minutes, exercise self-efficacy and body weight were measured.

RESULTS

As of this writing the first cohort of 8 participants (aged 56-72) had completed 16 weeks of the DPP with an average baseline BMI of 36.8. For women 56-70, average overweight 25.5 weekly exercise minutes, including 47 minutes of VR/Avatar gaming. All participants lost weight, mean weight loss was 8.8 lbs (SD=4.9), 4.5% body weight (SD=2.1). Focus group analysis indicated enthusiasm for the VR/Avatar gaming as a way to ease into and continue exercising in the privacy of one’s own home with “anytime” convenience. Participants reported increased confidence, and cognitive and stress reducing benefits from using the gaming system.

ACKNOWLEDGEMENTS

Ubisoft

CONCLUSION

In preliminary evidence, VR/Avatar Fitness gaming is a feasible and efficacious method for promoting adherence to DPP, exercise and weight loss among older African American women.

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