Addressing Health Inequities in Gastroenterology: The Impact of a Digital Digestive Health Program with Virtual Dietitian and Health Coach Support for Socially Vulnerable Populations

Erin Commons, MS, RDN[1], Alicen Black, MS, RDN[1], Pen-Che Ho[1], Hau Liu, MD, MPH, MS[1,2]

[1] Cylinder Health, Inc. Chicago, IL;, [2]NYU Grossman School of Medicine, Dept of Medicine, NY, NY

Background

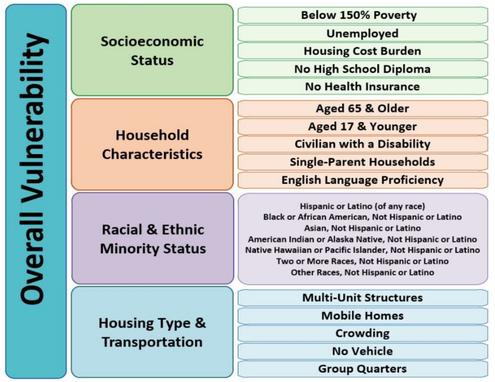
- Gastrointestinal (GI) disease includes conditions such as irritable bowel syndrome, acid reflux, inflammatory bowel disease, constipation, and diarrhea.
- Socially vulnerable populations, including those with lower socioeconomic status and minority groups, typically have less access to quality GI care[1,2].
- Telehealth services provided by Registered Dietitian Nutritionists (RDNs) and Health Coaches (HCs) have been shown to improve digestive health outcomes[3,4,5].
- Implementing telehealth may increase access to digestive care and help reduce healthcare disparities among these vulnerable populations[2,3,4].

Objective

- To describe how digital telenutrition services can be used to optimize clinical outcomes and care for participants with digestive conditions and symptoms.
- To evaluate the impact of a multi-modal digital digestive health program, including telehealth visits with RDNs and HCs, on reducing GI symptoms in socially vulnerable populations.
- To assess whether telehealth visits provide additional benefits in symptom reduction compared to app-only usage, with a focus on participants' Social Vulnerability Index (SVI) as a determinant of health outcomes.

Methods

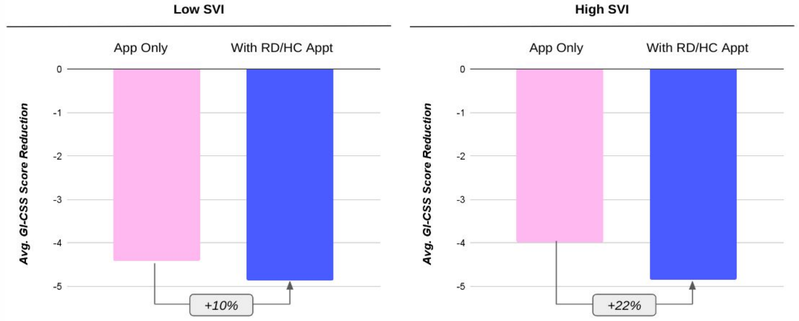
- A comprehensive, digital digestive care program was provided to U.S. employees of participating companies via their employee benefits.
- Participants were recruited using employer-approved marketing, targeting diverse groups with common GI symptoms.
- All participants met the following inclusion criteria: enrolled in the program between January 1, 2022, and November 28, 2023, and tracked symptoms at least twice within 30-90 days.
- The program offered in-app courses, symptom tracking, targeted education, and optional telehealth visits with RDNs and HCs.
- The study measured changes in GI symptoms from baseline to up to 3 months, comparing those who opted for telehealth visits with those who only used the app.
- Participants were stratified by Social Vulnerability Index (SVI) to assess the impact on symptom improvement; regression adjustment controlled for age, gender, race, BMI, and pre-existing GI conditions[1].



Results

- N = 1,934
- 81.6% (n = 1,579) scheduled at least one telehealth visit
- 18.4% (n = 355) only used app-based resources
- 85% of participants saw GI symptom improvement, with a 60% average reduction ($p < 0.0001$).
- Telehealth users had a 15% greater symptom reduction than app-only users ($p = 0.010$).
- High SVI participants (> 0.4, median) showed an additional 22% reduction with telehealth ($p = 0.039$).
- Low SVI participants (≤ 0.4, median) saw a 10% additional reduction, though not statistically significant ($p = 0.098$).

Impact of Multi-Modal Digital Digestive Health Program on GI Symptom Reduction by Social Vulnerability Index (SVI)



Conclusion

- The digital digestive health program significantly improved GI symptoms across all levels of social vulnerability.
- Telehealth appointments with RDNs and HCs enhanced symptom improvement for participants in both high and low SVI groups.
- Participants with the highest levels of social vulnerability saw the greatest benefit when utilizing telehealth support, showing an additional, statistically significant reduction in symptom severity.
- High SVI participants experienced a 22% greater reduction in symptoms compared to those using app-only resources.

Summary

- Digital digestive health programs can effectively reduce GI symptoms, especially among socially vulnerable populations.
- Telehealth visits with RDNs and HCs further enhance access to GI care, promote digestive health outcomes, and improve health equity.
- These findings suggest that digital health solutions are crucial for advancing equitable access to quality GI care and addressing disparities among populations with high social vulnerability.

References

1. Agency for Toxic Substances and Disease Registry. (2023). *CDC/ATSDR Social Vulnerability Index (SVI) 2018 Documentation.* Centers for Disease Control and Prevention. Retrieved from https://www.atsdr.cdc.gov/placeandhealth/svi/overall-social-vulnerability.html
2. Bravata, D., Liu, H., Colosimo, M. M., et al. (2024). *Digital disease management programme reduces chronic gastrointestinal symptoms among racially and socially vulnerable populations. BMJ Open Gastroenterology, 11,* e001463. https://doi.org/10.1136/bmjgast-2024-001463
3. Bravata, D. M., Liu, H., Colosimo, M. M., et al. (2024). *Improvements in Digestive Symptoms After Participation in an App-Based Chronic Digestive Disease Management Program: A Prospective Cohort Evaluation. Cureus, 16*(8), e66941. https://doi.org/10.7759/cureus.66941
4. Commons, E., Liu, H., & Sepulveda, R. (2023). *Deployment and Evaluation of an Integrated Digital Digestive Solution Deploying App-based Telenutrition Services for a Commercially-insured Population with Chronic Digestive Conditions. Journal of the Academy of Nutrition and Dietetics.* Advance online publication. https://doi.org/10.1016/j.jand.2023.06.008
5. Liu, H., Colosimo, M. M., Bullock, A., Kalmbach, K., Bravata, D. M., & Pimentel, M. (2023). *Improvements in Digestive Symptoms After Participation in a Digital Digestive Chronic Care Program. The American Journal of Gastroenterology, 118*(S1731), S1731-S1732. https://doi.org/10.14309/01.ajg.0000956564.98996.92

NYU Grossman School of Medicine

Cylinder

Contact: Erin Commons, MS, RDN, ecommons@cylinderhealth.com