Acceptability and Ease of Use of an Educational Website among Women, Infants, and Children Program Participants in Puerto Rico: A Pilot Study

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Objective: To evaluate a website for an educational intervention among participants of the Baby-Act Trial. Baby-Act is a community-based intervention to prevent infant obesity by promoting physical activity, sleep, and healthy eating behaviors in Women, Infants, and Children (WIC) program participants in Puerto Rico. The intervention was designed to be delivered through a mobile application, but after the study was launched, participants reported many difficulties, and an alternative educational platform was developed.

Methods: Participants of the WIC program completed a face-to-face structured interview consisting of several open-ended questions. After completing the interview, they were instructed on how to access the newly developed webpage and completed the lessons found therein. Then followed a survey that explored the overall experience.

Results: Nine participants were interviewed; they all agreed that the website was easy to access, registration was simple, and the webpage was clear; 8 were able to complete at least 1 lesson (1 participant had a very poor signal), and all 9 reported being confident in using the webpage and stated they would use it again.

Conclusion: The study participants found this website to be user-friendly and a viable alternative for future educational intervention delivery to WIC participants. **[*P R Health Sci J 2023;42(3):246-248*]**

Key words: Education, Website, Infant, Parents, Obesity, WIC

Mobile health tools are suitable in terms of supporting parental involvement in preventing childhood obesity (1). These technologies are cost-effective and feature real-time data collection, feedback capability, lower participant burden, the potential for being tailored to different groups, and can be disseminated effectively and easily (2). Additionally, they are not restricted to a single location, which may help to eliminate some of the reported population barriers (1). Mobile applications (apps) offer a variety of features, such as providing health information, tracking health behaviors, and even taking and storing photos and videos (3).

The Baby-Act Trial is a community-based educational intervention in partnership with the Women, Infants, and Children (WIC) program in Puerto Rico to prevent infant obesity (4). The intervention was designed to be delivered using an app, with the intent that it be accessible and available to, feasible for, and usable by WIC participants. However, upon the study's launch, several issues were reported: problems that were (1) site-specific (poor connectivity to the internet), (2) platform-specific (technical errors and a complex multi-step process to use the app), and (3) population-specific (the inability of some of the participants' smartphones to support the app, language barriers [main features in English only], the lack of required email accounts for participants, and a complex process to register and use the app). Potential solutions were undertaken, such as providing hotspots (to deal with post–Hurricane Maria connectivity issues), working with the developers to improve the downloading, registering, and saving of data, reducing the file size of the content, and making additional contact with participants to help troubleshoot individual issues. Despite our efforts, the problems persisted, and an alternative educational tool became necessary. A website was considered to be an appropriate alternative (to a cell phone app), as websites are easier to update and maintain and can be accessed from different devices and locations. Apps are built for a specific platform (iOS or Android) and require downloading and installing on the phone, while websites do not. The present study evaluated the acceptability and ease of use of a web-based platform as an alternative educational tool for the Baby-Act Trial (4).

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Methods

The purpose of this study was to evaluate the ease of use and acceptability of the Lessonly, Inc. website as an alternative education tool for use in the Baby-Act Trial. The Baby-Act Trial targets mothers participating in the WIC program from pregnancy to 1-year post-partum. Women in this study would not normally participate in the trial but nevertheless share socio-demographic characteristics with Baby-Act participants, as required for WIC eligibility. For this reason, we did not collect demographic information. A convenience sample was chosen from a WIC clinic not randomized in the Baby-Act Trial. The inclusion criteria were being a participant in the WIC program and having a smartphone (for the sole purpose of evaluating the ease of use and acceptability of a web-based learning tool). There were no exclusion criteria. Lessonly, Inc. was chosen because it was website that had a framework to easily develop the lessons, readily accessible from a phone/tablet, and had components built in that are completely bilingual.

The convenience sample of WIC participants (18 years and older) was recruited at a WIC clinic with the help of the clinic staff. The study procedures were approved by the Institutional Review Board of the University of Puerto Rico Medical Sciences Campus; the informed consent was waived.

A cross-sectional, structured survey with open-ended questions was used. The survey explored the types of phones the participants commonly used, the names of their service providers, how frequently they accessed the internet from their phones, any connectivity issues that they experienced, and the websites they visited most frequently. After completing the survey, they received written instructions for accessing the website, setting up an account, and completing the lessons. Upon lesson completion, the participants were again interviewed to ask about their experiences with the website access and login, the completion of the lessons, their confidence in navigating the website, and their willingness to use it again. Three out of a total of 56 lessons were chosen as being representative of the total content; they ranged from the simplest (a relatively short session with fewer questions and less media content) to the most complex lessons (longer lessons and with more media content). The three lessons included all the different tasks for promoting participant engagement (answering questions, viewing media, and uploading a video showing the desired health behavior) that were part of the Baby-Act intervention. These lessons were created on the website by a member of the research staff after receiving some basic training from the company (Lessonly, Inc.). All the lessons were developed in culturally appropriate Spanish for the target population.

Our recruitment aim was to have participants with both android and iOS smartphones and who used three specific service providers, the largest providers in Puerto Rico. Once this aim was satisfied, recruitment ceased. Field notes were taken by researchers during the interview for later analysis; no video/audio recordings were made. Although the structured interview used open-ended questions, the field notes show that the participants answered categorically (yes/no). Therefore, the data were grouped and described as such. Data were categorized by a coder on an Excel spreadsheet, tallied, and described. The participants' quotations were not presented in a table.

Results

Ten WIC participants were invited to participate, but 1 of them did not bring her phone (n = 9). Table 1 shows the information on phones, service providers (various), having the internet at home, whether the internet was accessed on a given individual's phone, and websites frequented (mainly social media).

All the participants were able to register on the website (n = 9), the process of which took 1 to 5 minutes. Eight participants completed at least 1 lesson, which took 3 to 5 minutes. All reported that they were able to see the images without distortion, and 5 of them were able to view the videos to the pertinent lessons. The internet signal for three participants was poor and they had problems downloading the videos shown in the lessons, so they completed the lessons without viewing it. However, viewing the video is not a requirement for completing a lesson. Of the 8 women who completed a lesson, all of those who wanted to redo or erase an answer (n = 6) found the option that allowed them to do so (Table 2). None of the 9 participants reported the need for technical assistance, and all of them reported feeling confident while using the page and claimed that they would be willing to use it again.

Table 1. Phone, service providers, & internet usage

Variable	#
Smartphone operating system	9
Android	6
iOS	3
Personal phone	9
Yes	9
No	0
Government-subsidized phone plan	9
Yes	0
No	9
Service provider	9
AT&T	1
T-Mobile	5
Claro	3
Internet at home	9
Yes	2
No	7
Use phone to access the internet	9
Yes	9
No	0
Problems with internet connectivity while using their phone	9
Yes	0
No	9
Websites frequented on phone	9
Facebook	4
Google	2
Instagram	2
WIC webpage	1
Digital news	2
YouTube	2

Table 2. Completion of lessons

Variable	#
Able to open and register	9
Yes	9
No	0
Lessons completed by participants	9
None	1
One lesson	2
Two lessons	0
Three lessons	6
Distortion of images and content	8
Yes	0
No	8
Easy to progress through lesson content	8
Yes	8
No	0
Feedback was provided after answering questions	8
Yes	8
No	0
Were able to see video	8
Yes	5
Not applicable	3
Option to redo or erase an answer	8
Yes	6
Not applicable	2
Instructions provided were adequate	9
Yes	9
No	0

Discussion

The participants gave positive feedback about the website evaluated in terms of the site being user-friendly and addressing barriers that were previously reported in the Baby-Act Trial. In particular, the ease of the process of registering and of using the site and its being completely in Spanish were key for this population.

There are many health-related apps available, and their potential for technology-based health interventions is immense, as they have high user acceptability and feasibility (5) and have been successfully used in other studies with WIC participants (6). However, barriers to the use of these apps have also been documented and include the lack of infrastructure or equipment, technology gaps, literacy, and language (7). These findings highlight the importance of being receptive to feedback regarding the use of technology for education and intervention purposes and acting quickly to address specific barriers and difficulties faced by study populations.

Although the present study included a small sample size and the interviews were completed inside a WIC clinic with a limited internet signal, we found the Lessonly, Inc. website to be a viable alternative (among WIC participants) to an app for future Baby-Act Trial educational intervention delivery.

Resumen

Objetivo: Evaluar un sitio web como herramienta para implementar la intervención educativa a los participantes del estudio "Baby-Act". Baby-Act es una intervención comunitaria para prevenir la obesidad infantil mediante la promoción de la actividad física, el sueño y los hábitos alimentarios saludables en participantes del programa "Women, Infants, and Children" (WIC, por sus siglas en inglés) en Puerto Rico. La intervención se diseñó originalmente para una aplicación móvil, pero al iniciar el estudio, los participantes informaron muchas dificultades con esta aplicación y fue necesario buscar una alternativa. Métodos: Nueve participantes de WIC completaron una entrevista estructurada en persona luego de acceder al sitio web bajo evaluación y completar las lecciones asignadas para describir su experiencia. Se tomaron notas de campo para su análisis. Resultados: Nueve participantes completaron la entrevista; todas informaron que fue fácil acceder y registrarse en el sitio web y ver las páginas sin distorsión; 8 pudieron completar con éxito al menos una lección (una participante no tenía señal) y todas (9) informaron sentirse confiadas al usar la página web y afirmaron que la usarían nuevamente. Conclusión: Los participantes del estudio consideraron que este sitio web es fácil de usar y es una alternativa viable para futuras intervenciones educativas para participantes de WIC.

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References

1. Curtis KE, Lahiri S, Brown KE. Targeting Parents for Childhood Weight Management: Development of a Theory-Driven and User-Centered Healthy Eating App. JMIR Mhealth Uhealth. 2015;3(2):e69. Published 2015 Jun 18. doi:10.2196/mhealth.3857
2. Tate EB, Spruijt-Metz D, O'Reilly G, et al. mHealth approaches to child obesity prevention: successes, unique challenges, and next directions. Transl Behav Med. 2013;3(4):406-415. doi:10.1007/s13142-013-0222-3
3. Taki S, Russell CG, Wen LM, et al. Consumer Engagement in Mobile Application (App) Interventions Focused on Supporting Infant Feeding Practices for Early Prevention of Childhood Obesity. Front Public Health. 2019;7:60. Published 2019 Mar 22. doi:10.3389/fpubh.2019.00060
4. Campos M, Pomeroy J, Mays MH, Lopez A, Palacios C. Intervention to promote physical activation and improve sleep and response feeding in infants for preventing obesity early in life, the baby-act trial: Rationale and design. Contemp Clin Trials. 2020;99:106185. doi:10.1016/j.cct.2020.106185
5. Payne HE, Lister C, West JH, Bernhardt JM. Behavioral functionality of mobile apps in health interventions: a systematic review of the literature. JMIR Mhealth Uhealth. 2015;3(1):e20. Published 2015 Feb 26. doi:10.2196/mhealth.3335
6. Au LE, Whaley S, Rosen NJ, Meza M, Ritchie LD. Online and In-Person Nutrition Education Improves Breakfast Knowledge, Attitudes, and Behaviors: A Randomized Trial of Participants in the Special Supplemental Nutrition Program for Women, Infants, and Children. J Acad Nutr Diet. 2016;116(3):490-500. doi:10.1016/j.jand.2015.10.012
7. Kruse C, Betancourt J, Ortiz S, Valdes Luna SM, Bamrah IK, Segovia N. Barriers to the Use of Mobile Health in Improving Health Outcomes in Developing Countries: Systematic Review. J Med Internet Res. 2019;21(10):e13263. Published 2019 Oct 9. doi:10.2196/13263