

Using Innovative Communication Technology to Improve the Health of Young African-American Women

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Target Population: Racial or Ethnic Minorities*: African Americans, Teenagers, Women*

Summary: Clinical health care for young women has been a focus of national attention since the 1980s, when research revealed significant racial disparities in pregnancy outcomes. At that time, national programs to improve poor pregnancy outcomes centered largely on providing care for women during pregnancy and helping women enter prenatal care early were initiated. This project is part of an emerging effort to engage young adults and improve their health before they are pregnant.

The project includes the development of an intervention to promote the health of African American women who are 15 to 21 years old. It uses theory-based behavioral change techniques and an existing clinical patient education system—the Virtual Patient Advocate (VPA)—to deliver the behavior change intervention. The VPA is an innovative communication channel that features an animated computer character that simulates face-to-face conversation with patients via the Internet. Aspects of this technology have been previously applied by the researchers to provide patient education at hospital discharge. This VPA system will feature novel social networking capabilities to increase the reach and efficacy of the new intervention.

Study staff will conduct focus groups to solicit participants' recommendations to maximize the target population's uptake of the system by building relevant behavioral messages and ensuring that the VPA system is convenient and easy to use. The system will be adapted from the VPA originally designed for the ReEngineered Discharge program (Project RED) to provide: 1) a personalized and comprehensive assessment of preconception risks, 2) culturally appropriate health promotion messages, and 3) an individualized behavior change discussion for each risk identified. This integration of social networking technologies will increase the reach of the intervention while increasing adherence to its recommendations.

Project Objectives:

- Design a new VPA for a Web-based behavior change and patient activation system that is informed by qualitative research with the target audience. **(Achieved)**
- Develop VPA dialogue for 15- to 21-year-old African American women. **(Achieved)**
- Develop a social networking interface that allows users to recommend other people who could benefit from the intervention, and perform a proof-of-concept test of this new system to improve the health of African American women. **(Achieved)**
- Analyze the impact of the newly designed system. **(Ongoing)**
- Disseminate this new technology to at least two other academic medical centers. **(Ongoing)**

2010 Activities: Pre-testing was done with 20 participants and included observation of participants' use of all program phases: risk assessment, intervention with VPA, listening to and writing stories, and creating a My Health To-Do List. The team conducted one-on-one interviews with participants. As the focus of this project is to develop a Web-based education system, it was decided that at the initial stage of development both usability testing and pilot testing would be used for eliciting feedback and suggestions for future development.

Current development of the VPA system is complete and the programming team is inputting and revising scripts. Using the template created by the study team, all scripts have been drafted for the complete set of 74 health risks. Each woman hears the scripts delivered by the VPA that correspond to her personal health risks. The scripts include a basic description of the risk and how it pertains to her current and any future pregnancies. The woman can decide to add the recommended action to her plan. If she chooses to add it, the VPA will suggest other relevant activities, such as talking to her family, partner, or provider; learning more information; or hearing a story from another participant. If she chooses not to add the item to her plan, the VPA will ask her to explain why. Women who have already successfully addressed a specific risk will be encouraged to share their stories.

Web forms for patients to answer screening questions before their first conversation with the VPA have been developed. Edits and suggestions from 19 experts from the National Advisory Board have been incorporated into the Intake Questionnaire and VPA scripts. The next version of the system will be sent to the National Advisory Committee. The basic health information provided through the scripts is complete and efforts are now focused on ways to use information gathered through the intake questionnaire to tailor the scripts to the individual participant. The Stages of Change assessment for each health risk was written and programming completed. The assessment will determine which stage of change the user is in for each of her risks at intake and at 2-month followup. In this manner, the project can track any risk-reduction progress made.

The team is developing a platform to give participants story-authoring capabilities so they can share their experiences overcoming individual health risks. Audio and video transformations to automatically de-identify participants' recorded stories were reviewed, but the team concluded that they do not offer sufficient privacy guarantees. The team also reviewed research on encouraging knowledge sharing in social networks and decided to provide a feedback system to participants so that they know when others have heard their stories and whether the stories were useful. A story-authoring tool was developed that lets users contribute stories by first writing text then "storyboarding" the story by adding static images of one of six avatars and 12 possible poses developed by the team. Additionally, the team has written the stories necessary to pre-populate the system with one story per risk, so that there are stories available for early users.

Participants in the focus groups conducted in October reviewed the draft "Reproductive Life Plans," which is called the "My Health To-Do List." Overall feedback was positive, with suggestions for changes in design and color. Participants stressed the importance of having the choice to print the document or view online only. Programming of the My Health To-Do List will be pre-tested after focus group feedback has been incorporated.

Preliminary Impact and Findings: The team has conducted a total of eight focus groups to guide the development of the VPA system. A formal analysis will be conducted at a later date. Below are preliminary key findings:

VPA appearance: Early focus groups chose the VPA character for the program and later focus groups decided that either the name “Leela” or “Gabby” would fit. The system is now called the “Gabby system”.

Stories: The team found that participants preferred shorter stories. The team has written seed stories for the system that are about six sentences long. Participants also indicated that the stories should be in first person and from the perspective of the system users instead of the VPA agent. Participants did not want a lot of slang or informal language in the stories. Finally, focus group participants wrote their own stories. Those deemed appropriate will be used in the system.

Social Networking: Participants across all eight focus groups confirmed that they use Facebook and that the system should have at least some Facebook-like functionality, or even be integrated into Facebook. For this phase of development, they will include Facebook-like features, such as “like” buttons for stories and a pseudonym given to each user.

Intake Questionnaire: Participants thought that overall the layout and design of the questionnaire was straightforward and easy to navigate. However, they recommended changing the progress bar at the top to show the names of the different pages and those completed instead of a percentage to indicate progress because they found the percentage to be discouraging. Also, participants thought that the questionnaire was quite long and would prefer the option to complete over multiple sessions.

The system was presented to 15 pre-testers who were taught to use the system. The project staff gathered quantitative and qualitative feedback about the system from these patients, and their physicians were interviewed by a qualitative researcher using open-ended questions. The pretesting showed that the system works well, there were few problems, participants liked the system, and two-thirds stated that their interaction with the system would help them to change some aspect of their health or health care.

Strategic Goal: Develop and disseminate health IT evidence and evidence-based tools to support patient-centered care, the coordination of care across transitions in care settings, and the use of electronic exchange of health information to improve quality of care.

Business Goal: Knowledge Creation

* *AHRQ Priority Population*