Development and Evaluation of an Audio Computer-Assisted Self-Interviewing System for Handheld Computing Devices

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RTI has developed an audio computer-assisted self-interviewing (ACASI) system for handheld computing devices, a technology that allows questionnaires to be self-administered. Respondents view questions and responses on the screen while listening as each are read through headphones to ensure the privacy of the respondent. The system uses prerecorded sound (WAV) files for the audio component. When a response is selected, it is highlighted and read again so that responses are recorded accurately. The respondent selects the answer by touching the response using a touch screen. ACASI technology is especially effective in collecting sensitive respondent data (e.g. drug use, sexual practices, etc.) and with low-literacy respondents.

The system offers the ability to administer numerous survey questionnaires in multiple languages and provides skip logic, numeric range checks, and date checking. Standard question types include informational, select-one, select-all, numeric, date and text entry. In addition, new methods of data capture are supported including the ability to record spoken responses and collection of participants signatures, allowing for verification of informed consent. The system is well-suited for global clinical trials due to its support for multiple languages, subject randomization and data blinding techniques.

The system will save project resources by requiring fewer interviewers to conduct group surveys, improving response rates by offering greater mobility and convenience for data collection, decreasing time required of staff and participants due to its ease of use and quick setup, and increasing response accuracy with systematic error checking during data entry. Handheld devices may be carried discreetly, which makes them a viable alternative where security is a concern.

An initial evaluation of usability and performance has strongly supported the use of handheld devices for ACASI-based data collection, concluding that the handheld system can provide similar functionality to current laptop-based systems.