

Audio Computer-Assisted Self-Interview (ACASI) Implementation Across Languages and Cultures

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Overview

- What is ACASI and why use ACASI?
- Design considerations and implementation issues
- Field experiences: NSFG, CMHS, KSA

What is ACASI?

- Technique used in combination with CAPI in order to provide increased privacy for respondents answering questions about sensitive or stigmatizing behavior.
- Respondents listen to recorded questions using headphones and enter answers directly into the computer.

Why Use ACASI?

- It can be used with any respondent who can hear; it does not require reading literacy.
- It offers the traditional advantages of computer-assisted survey technologies.
- It provides a completely standardized measurement system.



Why Use ACASI?

- Since mid-1990's, used on various U.S. surveys such as:
 - National Survey of Adolescent Males
 - Longitudinal Study of Adolescent Health
 - National Survey of Family Growth
- Results: increased reporting of sensitive behaviors.

New Advances in ACASI

- Text-to-Speech technology instead of human recordings.
- Currently being used on NSFG.
- Analysis: more use of ACASI by respondents, less time to complete, less missing data, higher reports.



Human Voice Recordings: Pros and Cons

Pros:

- Sounds like an interviewer
- Natural pronunciation, esp. for other languages.

Cons:

- Human labor
 - Coordination
 - Re-recording
 - Inconsistency
- Equipment and facilities



Text-to-Speech Recordings: Pros and Cons

Pros:

- Very Quick and Easy
- Inexpensive
- Consistency of Affect

Cons:

- Inflection Issues
- Potentially Off-Putting Computer Voice



National Survey of Family Growth (NSFG) Background

- Conducted by the National Center for Health Statistics (NCHS) in the U.S.
- Data collected by the University of Michigan
- Currently in Year 2 of Cycle 8
- National, area probability sample of 15-44 year olds
- CAPI with ACASI

ACASI

- Respondents complete approximately 15 minutes of the interview on their own.
- Questions are sensitive in nature—sexual risk behaviors, abortions, drug use.

Evaluation of Human Voice vs. TTS

- Male and Female instruments
- Data from last cycle
 - Females: n=12,279
 - Males: n=10,403
- Data from two quarters of current cycle
 - Females: n=1,398
 - Males: n=1,235

Data Quality Indicators

- ACASI observations
 - While R completed ACASI, interviewer completed observation form
- Paradata
 - Item-level times
- Substantive data
 - Missing data
 - Substantive distributions



ACASI Observations

- R's needed less assistance.
- R's used headphones more.
- R's used text-only less (no audio).

Paradata

- Evaluated item-level timings for variables common in both cycles.
- ACASI lengths shorter in C8 for both males and females.
- Spanish ACASI lengths also shorter.



Discussion of Time

- If respondents are making more use of ACASI, why are they taking less time?
- Three possible explanations
 - TTS audio files are significantly smaller
 - Fewer “empty spaces” at start and end
 - Pace of TTS audio slightly faster



Missing Data Rates

- Slightly lower rate of Don't Know/Refused is C8 (but non-significant).
- Higher reporting of sensitive behaviors related to sexual activity and drug alcohol use.

Summary of NSFG Text to Speech

- Production of TTS files took less effort than human recording
- Interviewer observations suggest respondents may be making more use of the audio in ACASI
- But TTS takes less time than recorded ACASI
- Suggests some efficiency gains
- Slightly lower (but n.s.) missing data rates in C8 than C7
- No evidence that substantive responses are negatively affected by transition to TTS
- Adoption of TTS judged successful

Current NSFG Outcomes

- Very low refusal rate—In current cycle, 25 respondents out of 7922 completed interviews (.3%).
- Of those who have refused, only two respondents were Spanish-speaking.
- CAPI interview transitions to ACASI at end; no option to do ACASI content in CAPI mode.



China Experiment

- Proposed use of ACASI on China Mental Health Study (part of World Mental Health initiative).
- Experiment conducted on rural village sample to determine feasibility.
- College sample experiment forthcoming.

China Design

- Rural area of Hunan Province
- 13 interviewers
- Used Suicide and Marriage modules of Composite International Diagnostic Interview (CIDI) 3.0.
- Investigate respondent's acceptance of ACASI mode and reporting of sensitive topics.

China ACASI Sample

- Sample size was 1223
 - 696 assigned to ACASI
 - 527 assigned to CAPI
- CAPI administered interview prior to sensitive questions.

China ACASI Outcomes

- Respondents informed of the mode to be used.
- Refusal Rates
 - 30.6% ACASI
 - 7.0% CAPI
- Difference is significant.

Willing to Participate

	ACASI	CAPI	TOTAL
YES	483 69.4%	490 93.0%	973 79.6%
NO	213 30.6%*	37 7.0%*	250 20.4%
Total	696 100.0%	527 100.0%	1223 100.0%

$\chi^2=102.56$

$P<0.001$



China ACASI Outcomes

- Have you ever seriously thought about committing suicide?
- Among the respondents who were willing to participate, 8.3% said 'yes' in ACASI compared to 5.3% in CAPI.
- Difference is not significant at 0.05 level.

Ever Seriously Thought About Committing Suicide

	ACASI	CAPI	TOTAL
YES	40 8.3%*	26 5.3%*	66 6.8%
NO	443 91.7%	464 94.7%	907 93.2%
Total	483 100.0%	490 100.0%	973 100.0%

X²=3.406

P<0.065



Outcomes by Age

- 55 Years or Less
 - Significant difference in the rate of refusal (17.9% for ACASI vs. 6.1% for CAPI)
 - No significant difference in reporting of suicide intentions (8.8% vs. 7.2%).
- Older than 55 Years Old
 - Significant difference in the rate of refusal (49.1% for ACASI vs. 8.3% for CAPI)
 - Significant difference in reporting of suicide intentions (6.9% vs. 2.5%).



Summary

- Respondents who were informed of the ACASI mode to be used tended to refuse participation more than CAPI mode. Older respondents were more likely to refuse ACASI.
- Reporting of suicide intentions was higher for ACASI, but only significant for the oldest respondents.

Next Steps for China

- Continue experiment on college student sample.
- Refine training on ACASI for interviewers and re-design introduction of ACASI for respondents.
- Decide on ACASI use for China's Mental Health Study.

ACASI Use on KSA WMH

- Saudi National Mental Health Survey (KSA)
- Currently in data collection.
 - January-June 2013 – Eastern, Western, and Central regions
 - September-December 2013 – Northern and Southern regions
- Experimental design, ACASI and CAPI.
 - Sections include: Suicide, Marriage, Social Satisfaction, Attitudes towards Substance/Alcohol Use, Alcohol, Illegal Substance Use, Religiosity, Conduct Disorder



KSA ACASI Sample

- Group 1: 758 respondents were interviewed with Suicide, Marriage modules.
- Group 2: 149 respondents were interviewed with Social Satisfaction, Attitudes towards Substance/Alcohol Use, Conduct Disorder modules.
- Group 3: 148 respondents were interviewed with Alcohol, Illegal Substance Use, Religiosity modules.

KSA Experimental Design

- Group 1: Assigned to ACASI (CAPI option only offered if ACASI is refused).
- Group 2: Randomized half ACASI, half CAPI (ACASI offered if CAPI was refused).
- Group 3: All respondents from Group 2 assigned to ACASI right after Group 2 modules.

Outcome – Group 1

- 758 respondents were selected into the Suicide module and 16.9% of respondents refused to do ACASI but were willing to be interviewed with CAPI.
 - Higher refusal rate for female respondents

	ACASI	CAPI	TOTAL
Female	261 75.9%	83 24.1%	344 100.0%
Male	369 89.9%	45 10.1%	414 100.0%
Total	630 83.1%	128 16.9%	758 100.0%

Outcome – Group 2

- 149 respondents were randomized into the Social Satisfaction module and 24.2% of respondents refused to do ACASI but were willing to be interviewed with CAPI.
 - Higher refusal rate for female respondents.

	ACASI	CAPI	TOTAL
Female	46 66.7%	23 33.3%	69 100.0%
Male	67 83.8%	13 16.2%	80 100.0%
Total	113 75.8%	36 24.2%	149 100.0%

Outcome – Group 3

- 148 respondents were selected into the Social Satisfaction module and 20.9% of respondents refused to do ACASI but were willing to be interviewed with CAPI.
 - Higher refusal rate for female respondents.

	ACASI	CAPI	TOTAL
Female	67 74.4%	23 25.6%	90 100.0%
Male	50 86.2%	8 13.8%	58 100.0%
Total	117 79.1%	31 20.9%	148 100.0%

Summary

- Group 1 (16.9%) has the lowest refusal rate, then Group 3 (20.9%), and Group 2 (24.2%).
 - The lowest refusal rate happened at the first time ACASI was assigned.
 - Respondents still refused ACASI after having experience with Group 1 and 2 modules.
- Female respondents are more likely to refuse to proceed with audio sessions.

What We've Learned So Far

- Importance of interviewer training.
- Strategies for introducing ACASI to respondents with low education/little or no computer experience.
- Hardware considerations—small keyboard.
- Gender considerations based on KSA results.