Does Gender and Accent of Voice Matter? An Interactive Voice Response Experiment

Eman Mubarak¹, Taoba Shahid², Maryam Mustafa³, Mustafa Naseem¹
¹University of Michigan, ²Massachusetts Institute of Technology, ³Lahore University of Management Sciences

Introduction

- In Pakistan, health outcomes of women continue to fall short of intended goals.¹ It is important to understand how to improve health literacy and access for women in Pakistan, particularly those of low-income and low-literate backgrounds.²

- In Interactive Voice Response (IVR) systems, the impact of the characteristics of the voice, such as gender or accent, on the trust in the disseminated information is still not clearly understood.³,⁴,⁵

- The goal of this study is to determine whether low-literate men and women within an urban setting in Lahore, Pakistan have certain gender and accent preferences in Urdu when receiving maternal health information via an IVR system.

Methods

- University janitorial staff
- Vocational training center
- Free maternity clinic
- Local factory
- Male Formal voice
- Male Informal voice
- Female Formal voice
- Female Informal voice
- Short structured interviews consisting of 10 T/F statements
- Qualitative commentary

Script

FACTS

F1: Pregnant women should take folic acid supplements.
F2: Pregnant women should have at least one ultrasound scan during the first trimester of pregnancy.
F3: Breastfeeding should continue for up to two years after birth and beyond.
F4: A mother with a child at the age of 19 or less increases the risk of complications for both newborns and young mothers.
F5: Births that occur without the assistance of a doctor are at a higher risk for complications.

MYTHS

M1: Pregnant women are more vulnerable to evil forces and should therefore be more careful.
M2: Eating garam (hot) foods during pregnancy can cause miscarriage.
M3: After delivery, water intake should be restricted because it causes bloating and makes it harder to lose weight.
M4: Having back to back babies is beneficial for maintaining a happy family.
M5: The sex of the baby is determined by the mother.

Results

- Male gullibility to formal voice: Male respondents correctly identified more myths out of 5 when listening to a recording with an informal accent (M = 3.10, SE = 1.20) than with a formal accent (M = 1.57, SE = 1.87), t(22) = 2.27, p = 0.03.

- Male participants perceive male voices as providing more accurate information: Male participants that listened to a male recording correctly identified more facts out of 5 (M = 4.89, SE = 0.15) than those that listened to a female recording (M = 4.36, SE = 0.12), t(21) = 2.82, p = 0.01.

- Trust in IVR or participant response bias? 37.5% of participants responded “true” to 9/10 or all 10 statements regardless of voice characteristics, suggesting either trust in an IVR-based health dissemination or participant response bias due to interviewer demand characteristics.

Conclusions

- Our study provides some basic guidelines on the potential characteristics of the voice used in IVR systems when deployment is in low-literate and patriarchal communities.

- Future studies may choose to increase sample size and expand breadth of script content.

References