

Use of Technology to Reduce Communication Barriers at the Point-of-Care

Tasnim Abdalla, Pascal Fallavollita, University of Ottawa, Faculty of Health Sciences, Interdisciplinary School of Health Sciences

Introduction

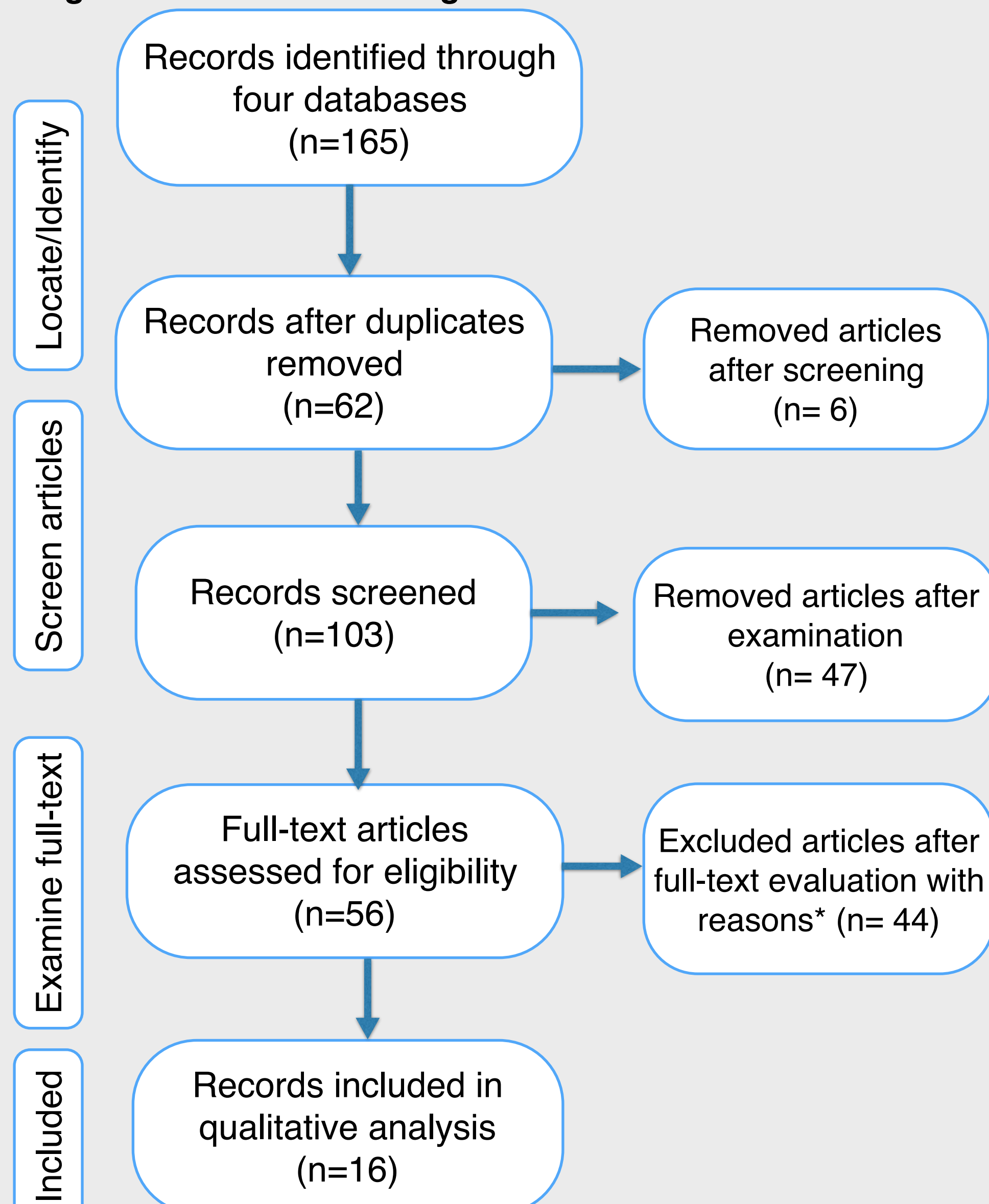
- Effective directive and instructive communication depends on many factors related to context, patients and providers
- Emerging tools used at the point-of-care may alleviate common communication barriers that impact patient health outcomes
- The field of Healthcare Technology has focused on tools for documentation, translation, and disease management
- Relatively little work has examined technologies developed solely to aid in-clinic communication
- Highlighting relevant articles may reveal the potential of these technologies in clinical practice

Aim

- Identify, screen, examine and evaluate relevant articles (past five years) on technologies used at the point-of-care
- Summarize the tool's utility in improving patient-physician communication

Methodology

Figure 1: PRISMA flow diagram³



*Excluded articles dealt with: Therapeutic and health information technologies (and not aiming to improve communication), outpatient settings, technologies replacing communication (online at-home tools), non-physician-patient communication (for example, nurse-patient or dentist-patient)

Results

- In total, 165 results were found: 39 from Google Scholar, 26 from PubMed, 45 from SCOPUS, and 55 from Medline (Ovid). After the four-step review process, 16 articles met the inclusion criteria
- Full-text examination of articles reveals in-clinic tools supplementing communication taking the forms of 3D models, cards and web-, software-, tablet-based tools
- All tools foster patient-physician dialogue
- Tool-specific barriers of communication are highlighted in Table 1



Figure 2: Patient-physician communication supplemented with tablets

Literature review highlights:

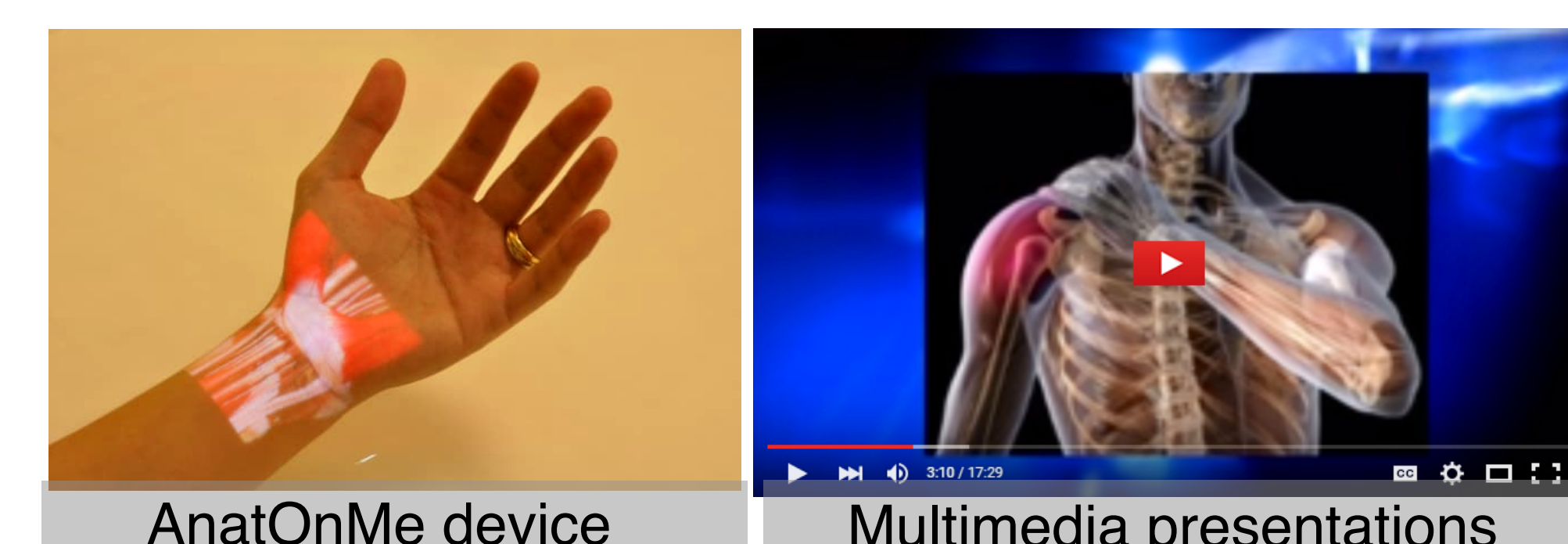
- Most tool motivations are to improve patient understanding during a medical encounter (use of tablets, multimedia tools)
- Information-based tools may ease the digital divide among patients with low accessibility to health information
- Audio-visual presentations may address patient fears before surgery and empower patients during consent

- Technologies aiming to improve a patient's understanding may also improve participation
- Patient distress is a key barrier to communication, yet only three track the reduction of anxiety after technology use

Conclusion

Summary and future directions

- Technologies that improve patient-physician communication act on key barriers
- A consistent study design may benefit future research on in-clinic technologies and tools
- More research is necessary to understand the impact of emerging health communication tools and to integrate technology awareness in physicians and patients
- Patient satisfaction and overall health outcomes may be improved by implementing technologies focused on specific communication barriers



Tablet-based information

Table 1: Proposed barriers and solutions for effective patient-physician communication

Identified barrier	Technology/tool as a possible solution during visit	Barrier primarily involving		
		Patient	Physician	Setting
Lack of understanding	Multimedia presentation, computer-animated videos or information tablets	✓		
Sociodemographic factors	Ethnic-specific computer-mediated information, modules or animated videos	✓		
Emotional state leading to low retention of complex information	Personalized information tablet, audiovisual presentation, visit recording tool, or tablet-based slideshow	✓		✓
Lack of participation or shared ownership	AnatOnMe projection device, interactive assessment tool, or tablet with results and images	✓	✓	
Power differentials (expert to non-expert)	Multimedia presentation or computer-animated videos	✓	✓	
Time constraints	Multimedia presentation or portable tablet with results and images			✓
Blocking non-verbal cues	Real-time feedback device of non-verbal cues		✓	

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Contact Information:

Tasnim Abdalla
tabda096@uottawa.ca

Bachelor of Health Sciences, Minor Chemistry
Université d'Ottawa | University of Ottawa

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Images from: <http://www.imedicalapps.com/2016/04/stroke-app-language-therapy-study/>