

Connection and Connectivity: A Systematic Review of Telehealth Survey Instruments

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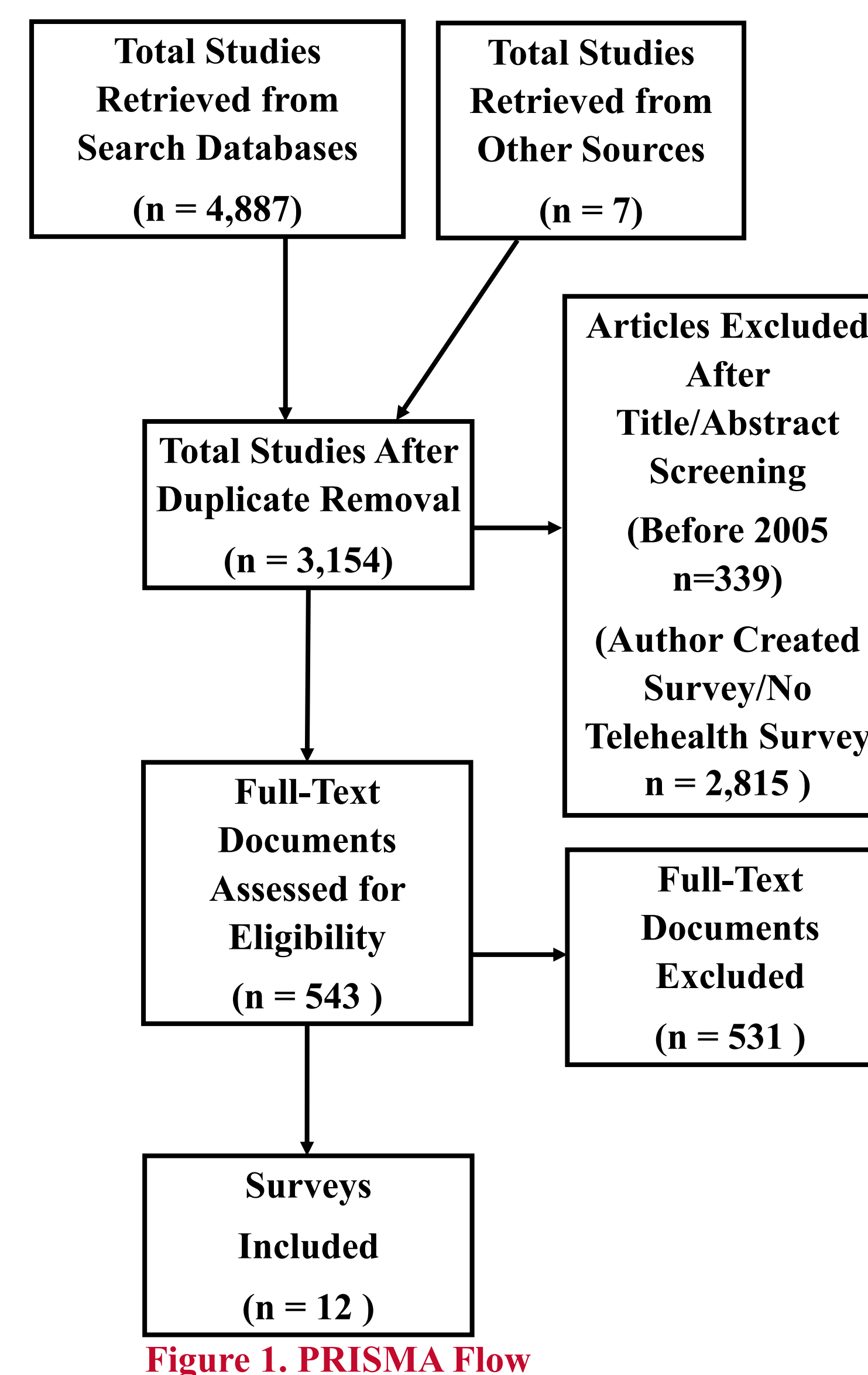
Background

The current upsurge in telehealth use in palliative and hospice care warrants consideration of patient, family caregiver, and interdisciplinary perspectives on telehealth modality and communication experiences.

This study purpose was to locate survey instruments available to assess telehealth interactions, to determine the content and constructs covered by the available instruments, and to describe the patient populations previously surveyed by the existing instruments.

Methods

The review protocol was registered with PROSPERO. Databases (PubMed, EMBASE, and CINAHL) were queried with search terms approved by a research librarian. Keywords of interest included “telehealth” and “telemedicine”, “survey(s)” and “questionnaire(s)”, “experience(s)”, “communication”, “validity” and “reliability”.



A standard extraction form was piloted and utilized with two blinded reviewers per data point.

Inclusion and Exclusion Criteria

Included studies were available in English, published between 2005-2020, and contained a survey instrument that measured patient or provider perceptions of telehealth-based communication.

Survey Summary

Table 1. Instruments and Constructs

Instrument	Subject	Constructs Measured
Telehealth Satisfaction Scale (TeSS)	Patient	Voice/visual quality, length of time to access, personal comfort, ease of use, length of time, privacy, & overall attitude towards telemedicine experience
Technology Acceptance Model (TAM)	Patient + Provider	Usefulness, ease of use, attitude towards, intention to use
Telemedicine Satisfaction and Usefulness Questionnaire (TSUQ)	Patient	Usefulness, effectiveness, ease of use, attitude, intention to use, comparing telemedicine versus in-person visit(s)
Patient Assessment of Communication During Telemedicine (PACT)	Patient	Patient-centered communication, provider competence, interpersonal skills, convenience
Telemedicine Perception Questionnaire (TMPQ)	Patient	Communication, privacy/confidentiality, time and cost savings for patient and provider, difficulty, accessibility, physical contact, trust in equipment, standardization for future, satisfaction
Telehealth Usability Questionnaire (TUQ)	Patient	Usefulness, ease of use and learnability, interface quality, interaction quality, reliability and effectiveness, and satisfaction
Telemedicine Satisfaction Questionnaire (TSQ)	Patient	Satisfaction, technical quality, interpersonal manner, communication, financial aspects, time spent with the physician, and accessibility and convenience
System Usability Scale (SUS)	Patient + Provider	Technical quality
Perceived Efficacy in Patient-Physician Interactions (PEPPI-5)	Patient	Self-efficacy, communication mastery
Patient Experience Questionnaire (PEQ)	Patient	Clinicians' ability to clearly communicate, professional competence of clinician, information exchange, decisional roles in communication, wait times, satisfaction
Computer System Usability Questionnaire	Patient + Provider	System usability
Tele-Nursing Interaction and Satisfaction Questionnaire (TISQ)	Patient	Interaction quality, satisfaction

Results

- Surveys (mean 20-items) relied on Likert scales; minimal open-responses
- Validation was inconsistently and under-reported; reliability reported as internal consistency was high (mean >0.78)
- Lack of language diversity noted with only 5 surveys available in languages other than English (n=2 Chinese, n=2 Dutch, n=1 Spanish, n=1 Swedish).
- Communication theory was rarely used in survey development (n=3/12).
- Few applications included pediatric cohorts (n=2/13).
- Participant demographics are under-reported in telehealth experience studies with a frank lack of diversity in ethnic/racial, geographic, age, educational, and income representativeness in current telehealth survey instrument respondents

- While the surveys claimed to assess communication experience, most (n= 3/13) only assessed technology interface rather than domains of communication experience.

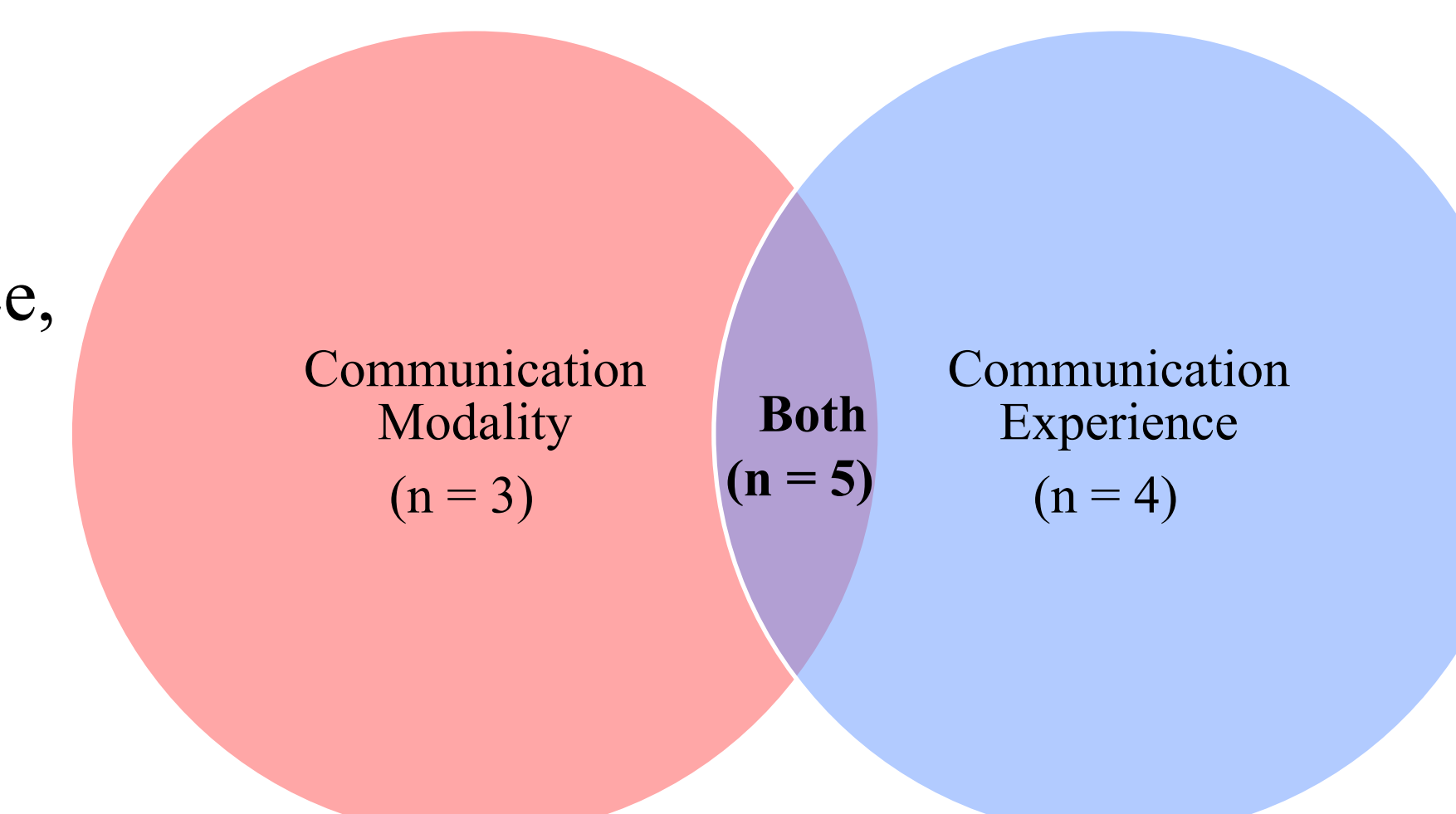


Table 2. Summary of Diversity Inclusion by Survey Instrument

Instrument	Number of papers	If diversity information is quantified, percent represented in sample per group*				
		percent female	percent non-white	percent low-income	percent HS education or below	percent rural
SUS	13	70%	30%	x	21%	x
TAM	10	64%	38%	62%	55%	x
TUQ	6	58%	8%	x	25%	x
TeSS	3	49%	x	x	53%	58%
PEPPI-5	3	69%	25%	x	40%	x
TSUQ	2	51%	46%	x	x	x
PEQ	2	64%	x	x	x	x
TSQ	2	x	x	x	x	x
PACT	1	4%	4%	16%	x	x
TMPQ	1	57%	x	x	x	x
TISQ	1	x	x	x	x	x
CSUQ	1	66%	x	x	87%	x

Conclusion Palliative care teams may consider familiarity with telehealth survey instrument as an essential component to progress from description of telehealth use to evaluation of telehealth experiences. Current survey instrument outcome reports do not represent inclusivity or diversity, although telehealth is now being clinically applied across settings.

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