South West Hospital and Health Service

Building better health in the bush

Can Occupational Therapy hand assessment & treatment sessions be conducted via Telehealth?

Tess Worboys[1], Melinda Brassington[2], Elizabeth Ward[3], Petrea Cornwell[4]

[1] Occupational Therapy, St. George Hospital, South West HHS
[2] Occupational Therapy, Charleville Hospital, South West HHS
[3] Centre for Functioning and Health Research, Metro South HHS and The University of Queensland
[4] Allied Health Research Collaborative, Metro North HHS, and Menzies health Institute of Queensland, Griffith University

Queensland Government

Hand Injuries

- Upper limb injuries most common to the body, approximately 50%
- Commonly acquired through manual or farm work.
- Financial and health burden associated with hand injuries

Barriers in Rural Health

- Access to specialist hand services in metro centres
- Ongoing care best provided locally
- Recommended treatment intensity not always available locally
- Issue for patient in rural and remote locations

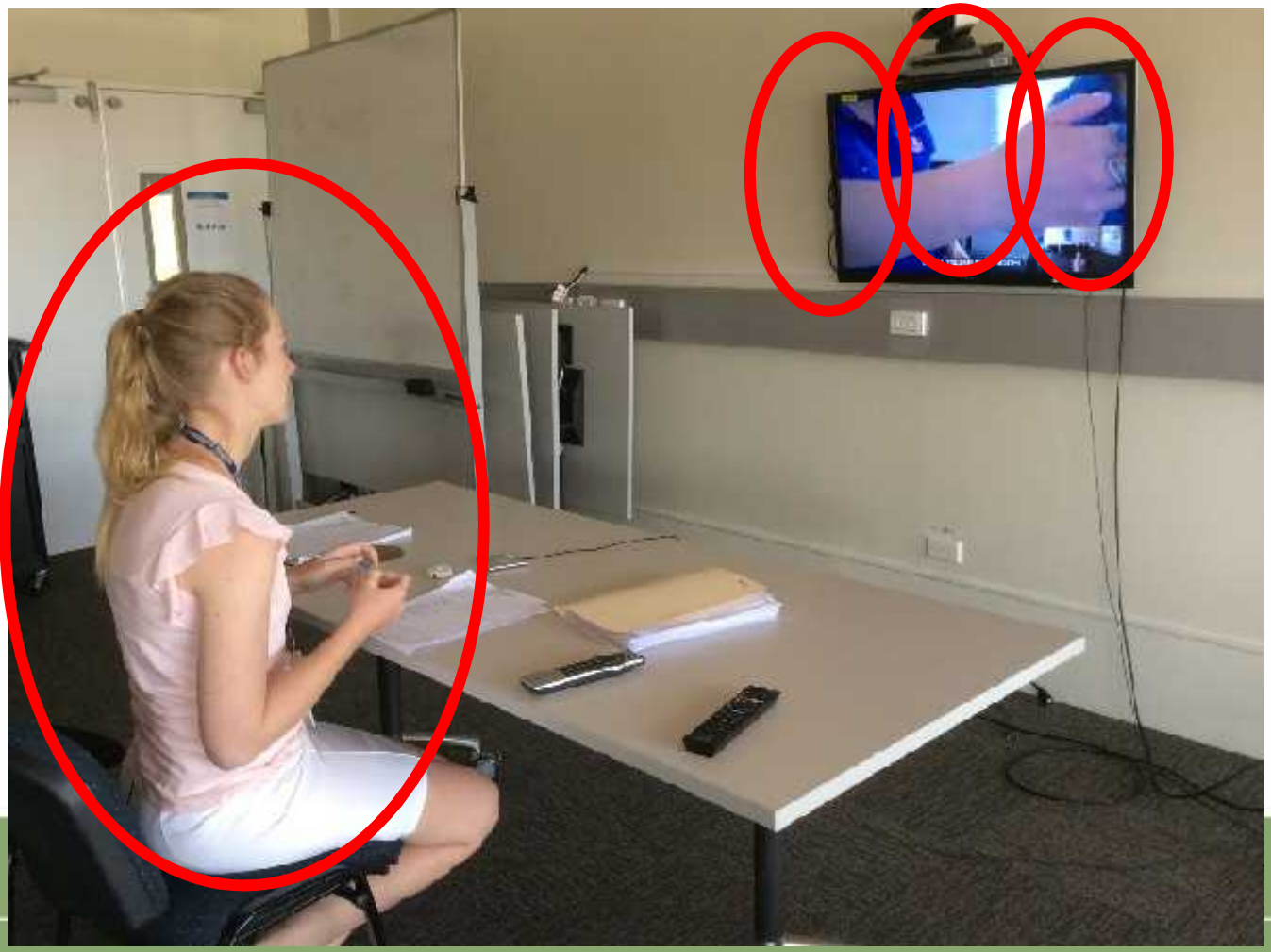
A possible solution…

- No research to date supporting telehealth as service model for OT hand therapy/mgt sessions
- However….related studies have shown
  - Successful use of telehealth for PT assessments of elbow disorders (Lade et al., 2012)
  - Successful delivery of home based upper limb therapy via telehealth (Langan et al., 2013)

Aims

- **Primary Aim:** Examine level of agreement for clinical decisions made by the telehealth OT and face-to-face OT during hand assessment and treatment session delivered via telehealth
  - ***Secondary Aim:*** *Examine patient and clinician satisfaction with telehealth as a service delivery model for hand therapy sessions*

Study Design



Participants

Demographic		N (%)
Gender	Male	10 (55)
	Female	8 (45)
Patient Location	Charleville	10
	St. George	5
	Roma	3
Employment Status	Working	11
	Not working	7
Nature of injury[1]	Fracture/Dislocation/Bone fusion	8
	Tendon conditions	4
	Nerve conditions	3
	Pain (CRPS, RSI)	3
	Other (Amputation, wound infection)	2
Time post initial presentation	Within 8 weeks	10
	≥ 8 weeks+	8
Hand Dominance	Left	1
	Right	17

cont.....

Affected Limb	Left	9
	Right	9
	Injury to dominant hand	8
Affected part of limb[2]	Phalanx (+/- joints)	3
	Metacarpal (+/- joints)	3
	Carpals	2
	Radius/Ulnar	3
	Tendon	6
	Nerve	3
Surgery	Yes	10
	No	8
Active Treatment[1]	Exercises (ROM, Strengthening)	15
	Graded functional hand use	5
	Pain management	8
	Desensitisation	6
	Scar management	6
	Wound management	0
	Oedema management	7
	Compression garments	5
	Splint	5

Participants

- Occupational Therapists
  - Four OTs served as either the T-OT or FTF-OT
- Allied Health Assistants (AHA)
  - Four AHAs were involved
  - All received a minimum of 1 hour training regarding measurement tools, and using the telehealth equipment

Methods

- Videoconferencing via the QLD Health secure network.
  - T-OT directed session and AHA
  - T-OT and FTF-OT collected session data using data collection form
  - AHA facilitated session at patient end

Data Collected

- Multiple outcome measures
  - Objective:
    - Dynamometer/Pinch Gauge;
    - Goniometer;
    - Tape measure
  - Subjective Ratings:
    - Appearance/oedema
    - Vancouver Scar Scale
    - QuickDASH
    - Exercise compliance
  - Patient reported:
    - Sensation
    - Pain

Other Outcomes

- Session statistics
  - Re dropouts, durations, failed sessions
- Patient & Clinician perceptions

Analysis

- Percent exact agreement (PEA)
  - Criteria set at ≥80% PEA
    - Error analysis completed whenever exact agreement not obtained
- Descriptive analysis (pt & clinician perceptions)
  - 5 point scale collapsed to 3 levels:-
    - % agree, % unsure/neutral, % disagree

RESULTS

Objective Measures

Measure	% PEA
Grip/Pinch Strength Left/Right	100%
AROM Flexion	89%
AROM Extension	82%
Circumferential Measure	89%

Subjective Clinician Ratings

Task Parameter	% PEA
General Observation	83%
Oedema	89%
Scar capillary refill	100%
Scar appearance	82%
Scar sensitivity	100%
Activities of Daily Living	89%
Exercise Compliance (ROM, Strengthening)	94%
Compression (glove, bandage) application and fit	100%
Splint application and fit	100%
Scar management compliance	80%
Overall recommendation	100%

Patient reported parameters

Task Parameter	% PEA
Pain Severity	100%
Nature of pain	94%
Location of pain	94%
Pain Triggers	100%
Pain Relief	100%
Altered Sensation	100%
Location of altered sensation	100%
Sensation Triggers	92%
Sensation Relief	100%
Patient reported change for:- Oedema; Strength; ROM; Scar Status; Pain Sensation; ADL; Exercise	95-100%

Error analysis

Session Statistics

- Technical Issues?
  - 9 sessions with low visual quality
    - only 3/9 sessions were impacted
    - 1 session T-OT unable to see scar
  - 2 sessions with low audio quality
    - 0/2 sessions not impacted
  - 1 system drop out, which was reconnected
- Average Session Duration = 49 minutes

South West Hospital and Health Service
Building better health in the bush

Participant Satisfaction

Question	Agree
1. I am comfortable to use telehealth if it is available in the facility nearest to my place of residence in the future.	100%
2. I was comfortable to undergo an assessment/treatment for my hand injury via telehealth.	100%
3. I would rate the telehealth session as being equal to a session conducted traditionally in the face-to-face method.	83%
4. The instructions given during the telehealth session were clear and easy to follow.	100%
5. I had difficulty seeing the telehealth OT	0%
6. I had difficulty hearing the telehealth OT.	0%

Question	Agree
7. I had sufficient time to follow instructions given during the session.	94%
8. I had opportunities to clarify any doubts I had during the session.	100%
9. I was comfortable being on the videoconference unit and would consider using this if possible in the future for hand therapy treatment.	94%
10. Telehealth will allow easy access to healthcare.	100%
11. Telehealth will save me travelling time & money	89%
12. Telehealth may benefit other patients with hand injuries living in a rural community.	100%
13. I would prefer a traditional (face-to-face) consultation with the OT despite possible costs and inconveniences.	17%

Clinician Satisfaction

Question	Agree
1. I was satisfied with the level of service the telehealth system allowed me to provide clients.	94%
2. I am happy with the level of client-clinician rapport generated during this session.	100%
3. I found the telehealth system easy to use during the session.	100%
4. The audio quality of the system was appropriate for the assessment and treatment performed.	100%

Question	Agree
5. The visual quality of the system was appropriate for the assessment and treatment performed	83%
6. I feel that I was able to satisfactorily and competently assess and treat the client to the best of my abilities using the system.	83%
7. I feel that the telehealth system was an efficient means of service delivery for this particular patient.	94%
8. I feel the telehealth system would be a useful service delivery tool for patients with hand injuries.	100%

Discussion

- High levels of agreement between:
  - Objective data
  - Subjective data
  - Patient reported data
  - Therapy activities
  - Decisions regarding patient progress
  - Session outcome
- Positive telehealth experience reported
- Study supports use of telehealth as method of delivering hand therapy

Conclusion

- Further information is required to evaluate the subsequent:
  - Wound management
  - Providing service in home
- From here?
  - Implementation of telehealth service model

Acknowledgements

- Mentors: Prof Liz Ward & Dr Petrea Cornwell
- Funding: Health Practitioner Research Scheme
- Teams!
  - Roma & St. George Hospital OT Departments
  - SWHHS Allied Health Assistants
  - SWHHS Management

Thank you

For more information please contact:

Tess Worboys

tess.worboys@health.qld.gov.au

Melinda Brassington

melindapetkov@hotmail.com