

EVIDENCE FOR USE OF TELEHEALTH IN OCCUPATIONAL THERAPY

OT KNOWLEDGE BROKER MEETING

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HILL HEALTH CENTRE**

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Evidence-Based Practice Resources



STEP 1: Formulating Your Clinical Question

- Prioritising Your Clinical Queries
- Tools for Writing Clinical Questions
- Knowledge Product Templates



STEP 2: Searching for Evidence

- Documenting Your Current Practice
- Sources of Evidence
- Database Search Tips
- How to Find Full Text
- Citation Management Tools
- Saving Your Search
- Choosing Your Best Evidence



STEP 3: Appraising the Evidence

- Appraisal Tools
- Level of Evidence Rating Tools
- Study Design Identification Flowchart
- Statistical Methods Appraisal Flowchart
- Clinical Applicability Form



Level of Evidence and
Narrative Summary

STEP 4: Applying Evidence to Practice

- Traffic Lighting Overview and Resources
- Practice Change Plan
- Knowledge Translation Plan
- Developing Education Materials
- Evidence for Practice (E4P) Resources
- Identifying Research Directions



STEP 5: Evaluating Evidence Use

- Selecting an Outcome Measure
- Knowledge Translation Evaluation Tools



STEP 1: CLINICAL QUESTION



STEP 1: CLINICAL QUESTION/PICO



- P: Adults and Pediatrics
- I: Variety of OT Interventions provided via Telehealth
- C:
- O: Improved Body Structures, Function or Participation
or
Improved Client, Parent or Clinician Satisfaction

STEP 2: SEARCHING FOR EVIDENCE



STEP 2: SEARCH



SEARCH SOURCES

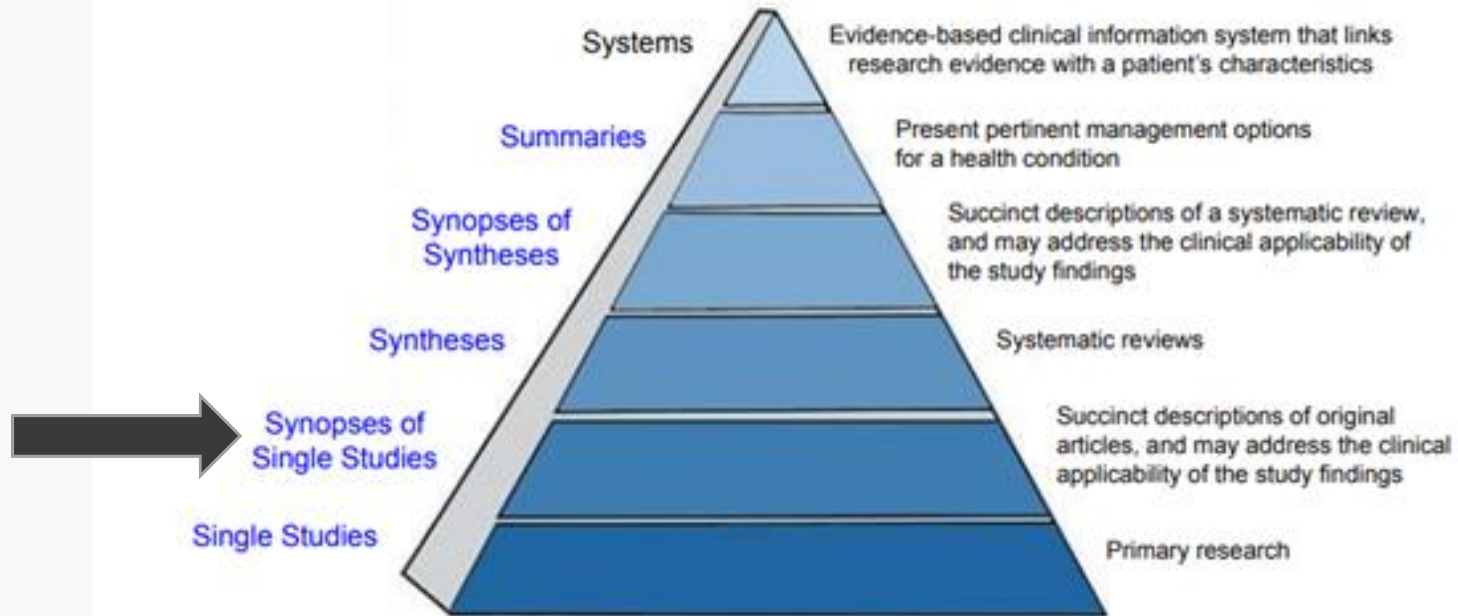
- CINHAL
- PUBMED
- OT SEEKER
- Google Scholar

SEARCH TERMS

- Telehealth
- Virtual Health
- Occupational therapy
- Adults
- Pediatrics
- Children

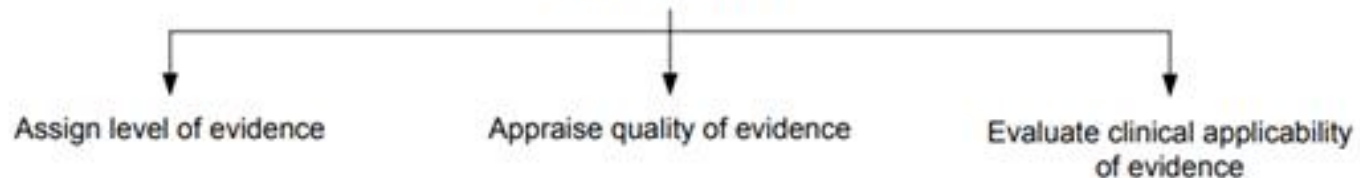
BEST EVIDENCE IDENTIFIED

Determine where your best evidence fits on the 6s Hierarchy of Pre-Appraised Evidence¹

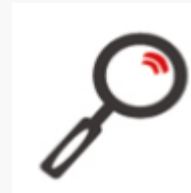


Reference: DiCenso, A., Bayley, L., & Haynes, R. B. (2009). Accessing pre appraised evidence: Fine-tuning the 5s model into a 6s model. *ACP Journal Club*, 151(3), JC3-2-JC3-3.

Appraisal Steps



STEP 3: APPRAISING AND SYNTHESIZING THE EVIDENCE



PURPOSES FOR CONDUCTING A SCOPING REVIEW:

- To identify the types of available evidence in a given field
- To clarify key concepts/ definitions in the literature
- To examine how research is conducted on a certain topic or field
- As a precursor to a systematic review
- To identify and analyse knowledge gaps

SCOPING REVIEW

NOBAKHT ET AL., 2017

Telehealth in occupational therapy: A scoping review

Zahra Nobakht, Mehdi Rassafiani, Seyed Ali Hosseini, Mina Ahmadi

Adult and Pediatric Populations

Nobakht, Z., Rassafiani, M., Hosseini, S.A., & Ahmadi, M. (2017). Telehealth in occupational therapy: A scoping review. *International Journal of Therapy And Rehabilitation*, 24(12), 534-538.

NUMBER OF PUBLICATIONS IN THE REVIEW PERIOD 1990–2015



STUDY POPULATIONS

Study populations			n (%)
Clinical population	Clinical diagnosis: neurological	E.g. stroke, tetraplegy, cerebral palsy, multiple sclerosis, Parkinson's disease, traumatic brain injury	11 (41%)
	Clinical diagnosis: other	Brest cancer, autism, fragile x, hip and knee replacement, intensive care unit survivors, disabled elders, families in need of early intervention, mobility-impaired adults, work-related musculoskeletal disorder	11 (41%)
Other population	Adults		1 (4%)
	Older adults		2 (7%)
	Occupational therapist		1 (4%)
	Computer user		1 (4%)

OCCUPATIONAL THERAPY SERVICES PROVIDED BY TELEHEALTH

Provided services		n (%)
Tele-intervention	Problem solving, oral care, physical rehabilitation, fatigue management and energy conservation, providing feedbacks, cognitive orientation to daily occupational performance and early intervention	20 (74%)
Tele-evaluation	Activities of daily living and hand function, home evaluation Feasibility, validity and reliability study of tele-evaluation	4 (15%)
Teleconsultation		2 (7%)
Telemonitoring		1 (4%)
Telesupervision		-

QUALITY OF THIS SCOPING REVIEW

Overall – Fairly well done however there was no:

- A priori review protocol
- Modified PRISMA flow diagram/peer reviewed search strategy
- Standardized data extraction forms

Therefore we should have somewhat limited confidence in the findings

RESULTS/CONCLUSIONS

- Telehealth is an underused resource—it *can* have beneficial effects on clients who are not able to travel to receive in-person OT services
- OTs should very carefully use this resource to consult with, evaluate, and monitor their clients. Supplemental in-person follow-up would be ideal
- More studies with larger numbers of participants are needed in order to ratify the effectiveness of this service

NARRATIVE REVIEW ZYLSTRA, 2013

Evidence for the Use of Telehealth in Pediatric Occupational Therapy

SHERYL ECKBERG ZYLSTRA, MS, OTR/L

Zylstra, S. E. (2013). Evidence for the use of telehealth in pediatric occupational therapy. *Journal of Occupational Therapy, Schools, & Early Intervention*, 6(4), 326-355.

POPULATIONS

- Populations were mixed and somewhat vague and included:
 - “Special needs” preschoolers
 - Young children receiving early intervention
 - CP
 - ASD
 - Children with handwriting challenges
 - Children with speech and communication challenges
(Both OT and Speech studies – “tele-rehab” were included)

RESULTS - SATISFACTION

- 9 of the 12 articles (75%) measured parent satisfaction with pediatric telehealth
- Of the nine articles that looked at parent satisfaction outcomes, eight (89%) found a high level of parent satisfaction with the telehealth process
- Only one study demonstrated mixed results, with the responses of parents being either somewhat satisfied or somewhat dissatisfied with services.

RESULTS - SATISFACTION

- In addition to *parent* satisfaction, three of the satisfaction studies also looked at *therapist* satisfaction with telehealth services
- All three of those studies (100%) demonstrated a high level of therapist satisfaction with the provision of telehealth services

DISCUSSION - SATISFACTION

- Based on the articles included in this review, it *appears* that there is now sufficient evidence in the pediatric rehabilitation literature to demonstrate a high level of *parent and therapist satisfaction* with telehealth services, thus supporting the use of these services in our daily practice... however...

DISCUSSION - SATISFACTION

However:

- The satisfaction studies each had a different set of criteria for measuring the construct of “satisfaction” (survey questions and ratings in each of the nine studies measuring satisfaction were quite varied)
- Therefore, it is difficult, if not impossible, to directly compare the results. Because each study used a different means to measure satisfaction with services and appeared to have different definitions of satisfaction altogether, there must be caution in interpreting the results

ONE FINAL CAUTION:

- Is the fact that six of the nine studies (67%) in this review looking at parent satisfaction with telehealth services also incorporated some form of face-to-face services
- Keeping this in mind, a more appropriate conclusion of this review might be that parents are satisfied with telehealth services when they are provided in combination with face-to-face services.
 - a face-to-face meeting with team members prior to instigation of the telehealth intervention
 - parents may be more willing to accept telehealth services if they have met the therapist on at least one occasion in order to establish a therapeutic rapport

RESULTS:

DISCIPLINE SPECIFIC OUTCOMES

- Although evidence is emerging, there does not yet appear to be the same level of evidence available to support the use of telehealth in the pediatric rehabilitation population when examining discipline specific outcomes
- Only six of the studies in this review (50%) looked at discipline specific outcomes

RESULTS:

DISCIPLINE SPECIFIC OUTCOMES

- Three of these six studies specifically looked at **pediatric occupational therapy** outcomes:
 - Improvements in handwriting skills among 6- to 11-year-olds attending an online public school, when provided OT intervention through telehealth technology
 - Improvements in fine-motor outcomes in children with hemiplegia following a virtual reality video game intervention
 - Sensory processing outcomes in four children with autism:
 - Three of the children either improved, or made no changes, in their sensory processing
 - One child's sensory processing outcomes worsened

RESULTS – COST SAVINGS

- 2 articles in this review looked at cost savings
- Both supported the theory that telehealth services can be cost-effective.
 - telehealth services could result in savings at the state level
 - virtual home visits resulted in an average savings of \$42.52 per visit and a potential savings, on average, of \$510.27 per year per child

(\$ 2013 thus the \$ figure would be higher now)

QUALITY OF THIS NARRATIVE REVIEW

Overall – Moderately well done however there was no:

- Peer reviewed search strategy

There was however:

- Transparent, replicable search strategy
- Standardized data extraction forms
- Appropriate/valid conclusions that are congruent with the strength of the study/ies being synthesised/appraised

Therefore we should have fair confidence in the findings

BOTTOM LINE:

- In summary, current literature supports the cautious use of telehealth as a viable service delivery option in pediatric occupational therapy, including in early intervention and school-based settings, especially when used as a supplement to face-to face services

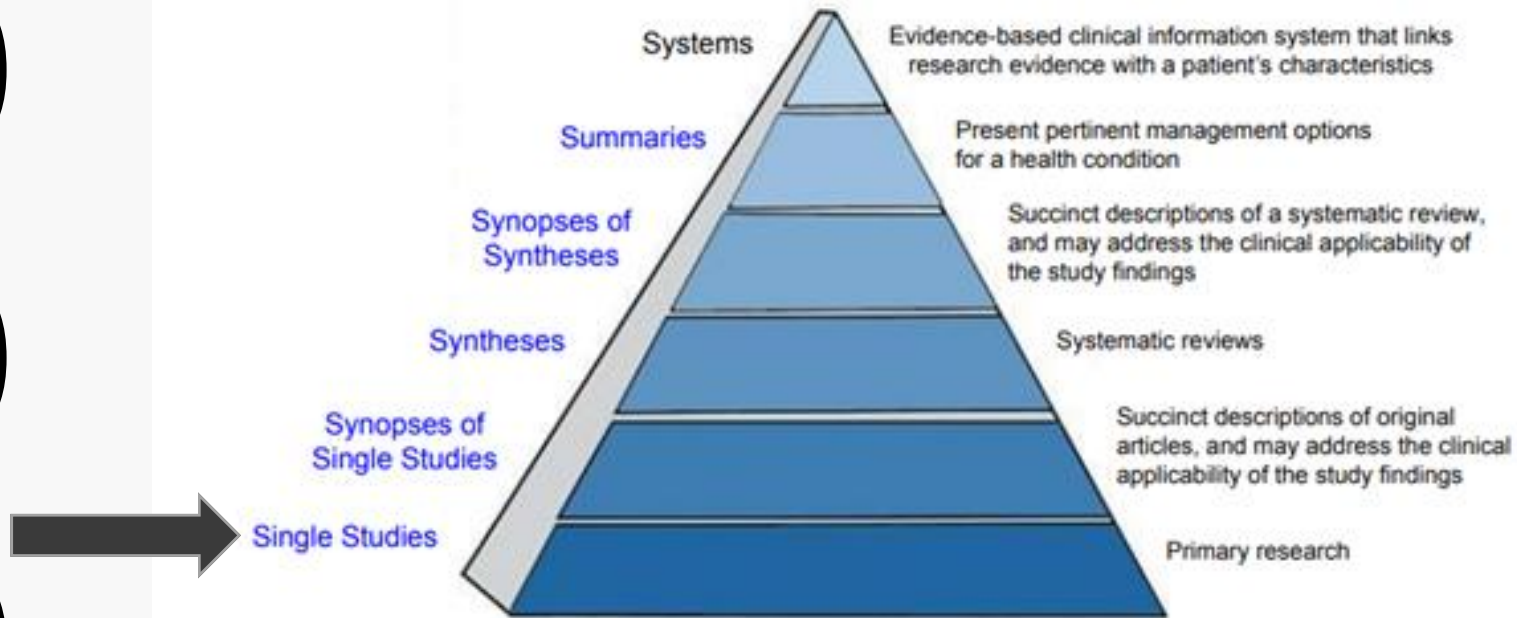


A LIST OF ADDITIONAL MORE RECENT POPULATION-SPECIFIC STUDIES

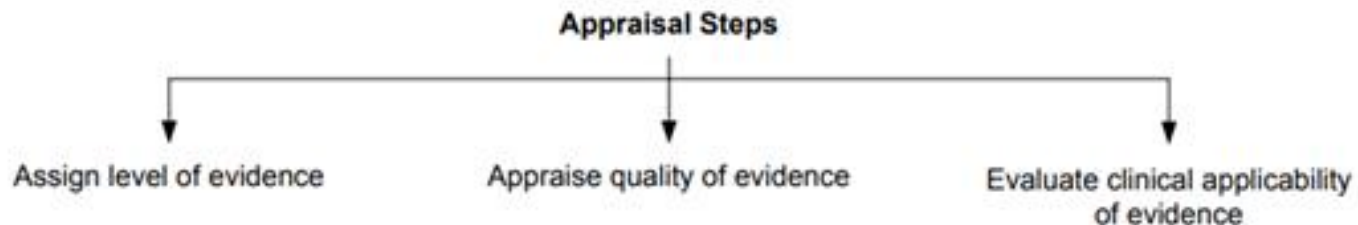
**SINCE 2016 (PLUS ONES RELEVANT TO
AREAS OF PRACTICE)**

BEST EVIDENCE IDENTIFIED






Determine where your best evidence fits on the 6s Hierarchy of Pre-Appraised Evidence¹



Reference: DiCenso, A., Bayley, L., & Haynes, R. B. (2009). Accessing pre appraised evidence: Fine-tuning the 5s model into a 6s model. *ACP Journal Club*, 151(3), JC3-2-JC3-3.



Client, provider and community referrer perceptions of telehealth for the delivery of rural paediatric allied health services

Jessica Campbell MSLP ^{1,2}  | Deborah Theodoros BSpTher (Hons), PhD^{1,2}  |
Trevor Russell MPhty, PhD^{1,2}  | Nicole Gillespie PhD^{2,3}  | Nicole Hartley PhD^{2,3} 

PURPOSE: Qualitative study to examine allied health client, provider and community referrer perceptions of telehealth for the delivery of rural paediatric allied health services to facilitate adoption.

2019

Campbell, J., Theodoros, D., Russell, T., Gillespie, N., & Hartley, N. (2019). Client, provider and community referrer perceptions of telehealth for the delivery of rural paediatric allied health services. *Australian Journal of Rural Health*, 27(5), 419-426

PARENT PERSPECTIVES OF AN OCCUPATIONAL THERAPY TELEHEALTH INTERVENTION


ANNA WALLISCH, PHD, OTR/L¹, LAUREN LITTLE, PHD, OTR/L², ELLEN POPE, OTD,
OTR/L³, WINNIE DUNN PHD, OTR, FAOTA^{3, 4}

PURPOSE: Qualitative study undertaken to understand the lived experiences of parents who participated in a 12-week, telehealth-delivered occupational therapy intervention (Occupation-Based Coaching) for young children with ASD in everyday routines such as mealtime, bedtime, and play

2019

Wallisch, A., Little, L., Pope, E., & Dunn, W. (2019). Parent perspectives of an occupational therapy telehealth intervention. *International journal of telerehabilitation*, 11(1), 15.

Developing and Implementing a Telehealth Enhanced Interdisciplinary Pediatric Feeding Disorders Clinic: a Program Description and Evaluation

Racheal R. Clark¹ · Aaron J. Fischer¹  · Erica L. Lehman¹ · Bradley S. Bloomfield²

PURPOSE: This study described a model for outpatient feeding services serving clients with intellectual and developmental disabilities within a coordinated health care model through a telehealth enhanced clinic.

2019

Clark, R. R., Fischer, A. J., Lehman, E. L., & Bloomfield, B. S. (2019). Developing and implementing a telehealth enhanced interdisciplinary pediatric feeding disorders clinic: A program description and evaluation. *Journal of Developmental and Physical Disabilities*, 31(2), 171-188.

Availability, spatial accessibility, utilisation and the role of telehealth for multi-disciplinary paediatric cerebral palsy services in Queensland

Sisira Edirippulige¹, John Reyno¹, Nigel R Armfield^{1,2}, Matthew Bambling³, Owen Lloyd⁴ and Elizabeth McNevin⁴

PURPOSE: To understand the methods of current delivery of health care services to cerebral palsy (CP) patients and also to examine the current use of telehealth by clinicians and their perceptions about telehealth use.

2016

Edirippulige, S., Reyno, J., Armfield, N. R., Bambling, M., Lloyd, O., & McNevin, E. (2016). Availability, spatial accessibility, utilisation and the role of telehealth for multi-disciplinary paediatric cerebral palsy services in Queensland. *Journal of telemedicine and telecare*, 22(7), 391-396.

The use of telehealth in pediatric occupational therapy


Marta Figueiredo

PURPOSE: Evidence the use of telehealth in pediatric occupational therapy and its potential; Evidence the role of the occupational therapist (babies between 0–12 months of age; daily routines especially feeding and sleep)

2019

Figueiredo, M. (2019). The use of telehealth in pediatric occupational therapy. *Annals of Medicine*, 51(supl), 66-66.

Delivering Quality Allied Health Services to Children with Complex Disability via Telepractice: Lessons Learned from Four Case Studies

Monique Hines¹  • Kim Bulkeley¹ • Simone Dudley^{1,2} • Sue Cameron² • Michelle Lincoln^{1,3}

PURPOSE: Using mixed methods were conducted to achieve in-depth examination of the tele-practice services received by four children with disabilities and their families living in rural and remote Australia

2019

Hines, M., Bulkeley, K., Dudley, S., Cameron, S., & Lincoln, M. (2019). Delivering Quality Allied Health Services to Children with Complex Disability via Telepractice: Lessons Learned from Four Case Studies. *Journal of Developmental and Physical Disabilities*, 31(5), 593-609.

Occupation-Based Coaching by Means of Telehealth for Families of Young Children With Autism Spectrum Disorder

Lauren M. Little, Ellen Pope, Anna Wallisch, Winnie Dunn

PURPOSE: Investigated the efficacy of Occupation-Based Coaching delivered via telehealth for families of young children with autism spectrum disorder (ASD).

2018

Little, L. M., Pope, E., Wallisch, A., & Dunn, W. (2018). Occupation-based coaching by means of telehealth for families of young children with autism spectrum disorder. *American Journal of Occupational Therapy*, 72(2).

The Impact of Telehealth and Care Coordination on the Number and Type of Clinical Visits for Children With Medical Complexity

Holly D. McKissick, BS, Rhonda G. Cady, PhD, RN,
Wendy S. Looman, PhD, APRN, PNP, & Stanley M. Finkelstein, PhD

PURPOSE: To evaluate the effects of an advanced practice nurse–delivered telehealth intervention on health care use by children with medical complexity

2017

McKissick, H. D., Cady, R. G., Looman, W. S., & Finkelstein, S. M. (2017). The impact of telehealth and care coordination on the number and type of clinical visits for children with medical complexity. *Journal of Pediatric Health Care*, 31(4), 452-458.

Perspectives on the use of a telehealth service-delivery model as a component of school-based occupational therapy practice: Designing a user-experience

Daniel Rortvedt* and Karen Jacobs

PURPOSE: This study gathers information regarding perceptions, perceived barriers, and benefits of the use of telehealth in school-based occupational therapy practice.

2019

Rortvedt, D., & Jacobs, K. (2019). Perspectives on the use of a telehealth service-delivery model as a component of school-based occupational therapy practice: Designing a user-experience. *Work*, 62(1), 125-131.

Diagnostic accuracy of and patient satisfaction with telemedicine for the follow-up of paediatric burns patients

Anthony C Smith*, Roy Kimble†, Julie Mill†, Deborah Bailey†, Peter O'Rourke‡ and Richard Wootton*

PURPOSE: Compared the agreement between clinical assessments conducted via videoconference and assessments conducted in the conventional, face-to-face manner

2004

Smith, A. C., Kimble, R., Mill, J., Bailey, D., O'Rourke, P., & Wootton, R. (2004). Diagnostic accuracy of and patient satisfaction with telemedicine for the follow-up of paediatric burns patients. *Journal of telemedicine and telecare*, 10(4), 193-198.

ORIGINAL RESEARCH

Evaluation of a multisite telehealth group model for persistent pain management for rural/remote participants

PURPOSE: The aim of the present research was to perform a formative evaluation of a persistent pain management program implemented using a multisite telehealth group model, and to examine consumer perceptions

2019

Adult Population

Scriven, H., Doherty, D. P., & Ward, E. C. (2019). Evaluation of a multisite telehealth group model for persistent pain management for rural/remote participants. *Rural & Remote Health, 19*(1).

REFERENCES:

- Campbell, J., Theodoros, D., Russell, T., Gillespie, N., & Hartley, N. (2019). Client, provider and community referrer perceptions of telehealth for the delivery of rural paediatric allied health services. *Australian Journal of Rural Health*, 27(5), 419-426
- Clark, R. R., Fischer, A. J., Lehman, E. L., & Bloomfield, B. S. (2019). Developing and implementing a telehealth enhanced interdisciplinary pediatric feeding disorders clinic: A program description and evaluation. *Journal of Developmental and Physical Disabilities*, 31(2), 171-188.
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- Evidence-Based Practice Resources. (2013, July 09). Child Development and Rehabilitation. Retrieved April, 2020 from <http://www.childdevelopment.ca/Evidencecentre/EvidenceBasedPractice.aspx>
- Figueiredo, M. (2019). The use of telehealth in pediatric occupational therapy. *Annals of Medicine*, 51(sup1), 66-66.

REFERENCES:

- Hines, M., Bulkeley, K., Dudley, S., Cameron, S., & Lincoln, M. (2019). Delivering Quality Allied Health Services to Children with Complex Disability via Telepractice: Lessons Learned from Four Case Studies. *Journal of Developmental and Physical Disabilities*, 31(5), 593-609.
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