

Exploring Telehealth Delivery of Early Intervention Services: A review of the literature.

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Introduction

Early intervention (EI) programs provide physical therapy, occupational therapy, speech-language pathology, and special education to children aged birth to three years who are at risk for, or diagnosed with, developmental delays. Most often these services are provided in the home, however the New York State Department of Health approved the delivery of EI services via telehealth during the COVID-19 pandemic. Because of the unprecedented circumstances, EI providers were treating via telehealth with no formal guidelines or structured training. Healthcare policy must grow as the delivery of care changes, and therefore stakeholder opinion on telehealth in the EI population must be assessed. The goals of this project are to perform (1) a systematic review of the current evidence for EI services to be delivered using telehealth, and (2) a mixed-method, investigator-initiated study evaluating perspectives and satisfaction of EI stakeholders with regard to the provision of services via telehealth in Suffolk County.

Methods

A comprehensive search of the literature was conducted from January 2000 through October 2020. Searches were performed in MEDLINE (Ovid), CINAHL, PsychInfo, Cochrane CENTRAL, and Web of Science. A combination of controlled vocabulary and text words were used to represent the concepts of Early Intervention, Telehealth, and Children. All results were exported to Endnote and duplicates were removed.

1638 abstracts were screened by two independent reviewers and a third reviewer made final inclusion decisions with regards to any conflicts. "Rayyan - a web and mobile app for systematic reviews" (2016) was utilized to upload all articles and allow reviewers to independently record their inclusion decisions. Inclusion and exclusion criteria as stated below.

Exclude: Foreign language (non-English); Not original research articles (systematic reviews and meta-analyses); Do not have a telehealth component; Do not include children; Only use basic science or vitals/metabolic outcome measures (cellular studies, blood pressure changes, metabolic rate, etc.); Only protocols for future studies; Only describing a type of technology without implementation

Include: Early intervention services provided remotely in any form; Cover telehealth in pediatrics; Cover telehealth for rehabilitation; Specify Special education, psychology, nutrition, social work (social services), nursing, PT, OT, or Speech therapy services for children provided remotely; Discuss state or federal funding for the early intervention program or rehabilitation; Discuss state or federal policies around telehealth; Qualitative articles that examine stakeholder perspectives of telehealth; Studies from other countries that are written in English

Following the abstract screening, a full text screening of the remaining 363 articles was completed in the same fashion. Inclusion and exclusion criteria as stated below.

Exclude: Anything before 1986; Not English; Medical intervention without rehabilitation component; Anything with participants over 18 that do not have participants under 18 as well; Apps or other digital interventions without telehealth component (audio and video interaction with rehabilitation professional); Asynchronous interactions; Physician (not rehabilitation specialist); Clinician training of other clinicians unless the child/pediatric patient is part of the study; Exclude psychiatric conditions outside of autism issues related to rehabilitation; Exclude drug, alcohol rehabilitation unless it is a child born with an addiction due to parent issues who is receiving physical rehabilitation services.

Include: Telerehabilitation – must have a video component; Speech pathology; Occupational Therapy; Physical Therapy; Nursing; Nutrition; Psychology; Special Education; Social Worker; Parent training performed by a rehabilitation professional; Rehabilitation clinicians training clinicians for pediatric healthcare delivery

Next Steps

The included articles will be assessed using the Joanna Briggs Institute standardized data extraction tools with independent assessment of the methodologic validity before inclusion in the study, followed by verbal discussion in a group setting to resolve disagreements. This systematic review of the literature aims to identify:

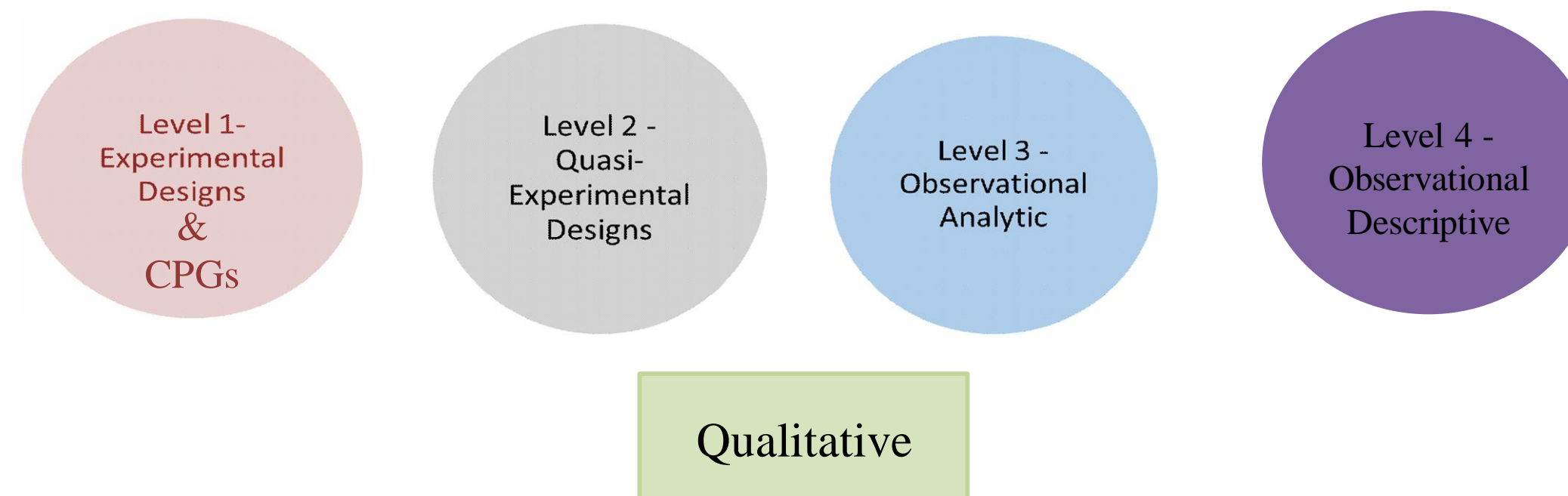
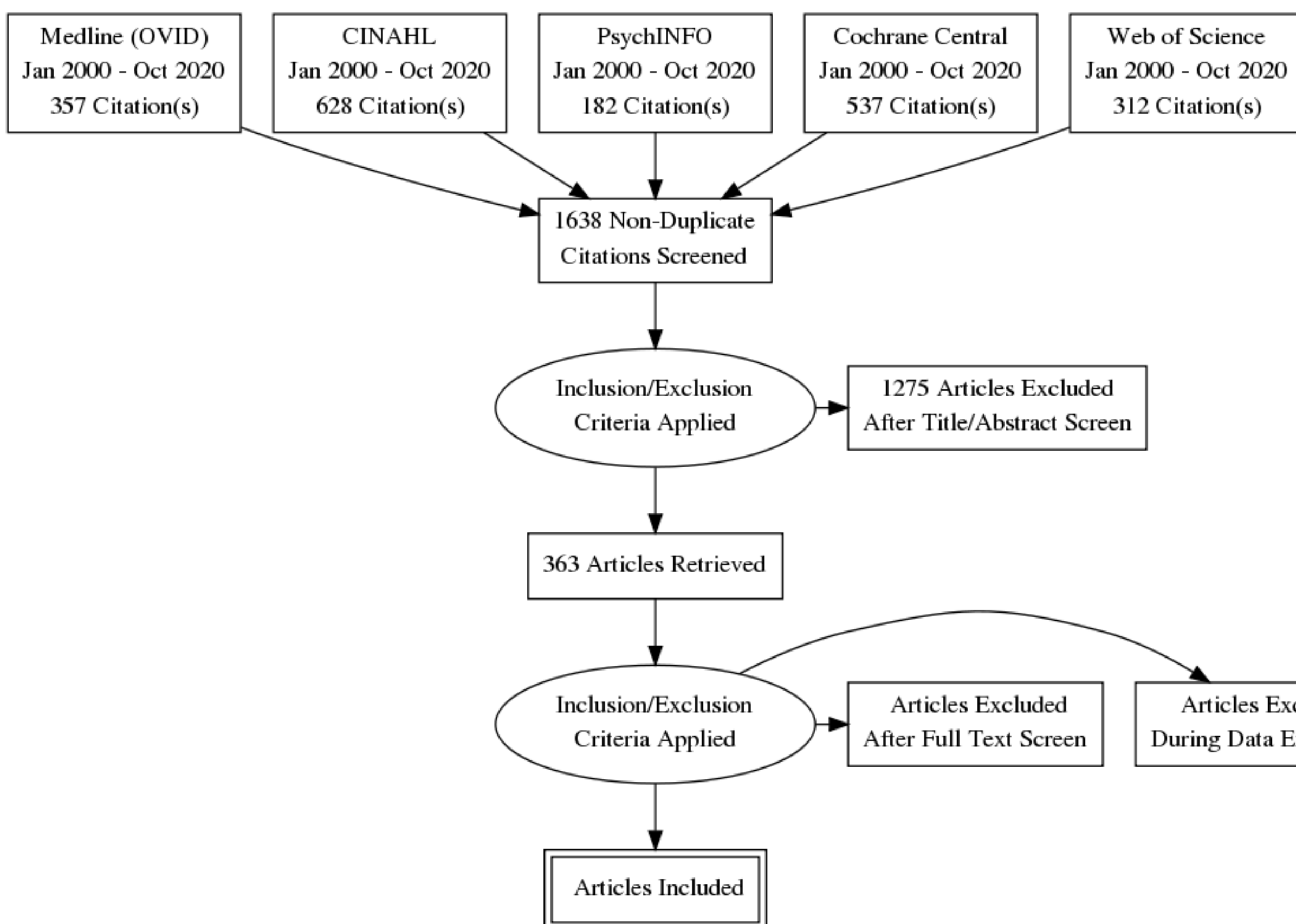
- Current policies in place in the US to guide practitioners for the delivery of EI service in NYS.
- Other state influence on policies and procedures in NYS.
- Known barriers and facilitators to the implementation of telehealth and the relationship to implementation in NYS.
- Stakeholder perspectives, including levels of satisfaction, facilitators and barriers during telehealth delivery of EI services in Suffolk County NY in response to COVID-19 pandemic as a temporary replacement of in-person service delivery.

Surveys and semi-structured interviews will be used to determine barriers and facilitators for EI services as perceived by both caregivers and service providers in Suffolk County, levels of satisfaction and effectiveness among these populations, and differences in barriers/facilitators and levels of satisfaction/effectiveness in those who have social disparities (e.g. digital literacy, access/reliability of technology, single parent households). The long-term goal of this project is to expand the sample beyond Suffolk County and use the information to help develop guidelines for best practice in telehealth in EI programs across New York.

Clinical Implications

Evaluating perspectives and level of satisfaction from all stakeholders is vital to objectively determine the positive and negative effects of telehealth interventions. Undoubtedly, COVID-19 brought about substantial changes to the delivery of early intervention services. This review will present objective practice recommendations to providers and bridge the gap between providers and consumers of early intervention telehealth services. This data has the potential to be used in curriculum development for health professional student programs in which treatment in the EI setting is appropriate. If deemed successful, telehealth could be used in EI service delivery for immunocompromised children as well as those living in areas where access to a provider is scarce.

PRISMA Flow Diagram



References

1. Hsieh HF, Shannon SE. Three Approaches to Qualitative Content Analysis. *Qual Health Res.* 2005;15(9):1277-1288. doi:10.1177/1049732305276687
2. Merriam SB, Tisdell EJ. *Qualitative Research: A Guide to Design and Implementation.* 4th ed. San Francisco: Jossey-Bass; 2016.
3. Braun V, Clarke V. Thematic analysis. In: *APA Handbook of Research Methods in Psychology, Vol 2 Research Designs: Quantitative, Qualitative, Neuropsychological and Biological.* Vol 2. Washington, DC: American Psychological Association; 2012:57-71. doi:10.1037/13620-004
4. Cappelto L. A New Long Island: Demographic, Economic, and Social Transformations in New York City's Historic Suburbs, 1990 - 2016 (Revised). 2019. https://academicworks.cuny.edu/cgi/viewcontent.cgi?article=1085&context=clacls_pubs.
5. Health NYSD of. Number and Percent of Children Within Municipalities Enrolled in the Early Intervention Program By Age Age Group.; 2018. https://www.health.ny.gov/community/infants_children/early_intervention/docs/enrollment_by_age_2017-2018.pdf.
6. Cason J, Orr L, Behl D, Ed M, Ringwalt S. Overview of states' use of telehealth for the delivery of early intervention (IDEA Part C) services. *Int J Telerehabilitation.* 2012;4(2):39-46.
7. Kelso GL, Fiechl BJ, Olsen ST, Rule S. The feasibility of virtual home visits to provide early intervention: A Pilot study. *Infants Young Child.* 2009;22(4):332-340.
8. Burke BL, Hall RW. Telemedicine: Pediatric applications. *Pediatrics.* 2015;136(1):1-25. doi:10.1542/peds.2015-1517.Telerehabilitation
9. Cason J. A Pilot telerehabilitation program: Delivering early intervention services to rural families. *Int J Telerehabilitation.* 2009;1(1):29-38.
10. Cole B, Pickard K, Stredler-Brown A. Report on the use of telehealth in early intervention in Colorado: Strengths and challenges with telehealth as a service delivery method. *Int J Telerehabilitation.* 2019;11(1):33-40.
11. Behl DD, Blaiser K, Cook G, et al. A Multisite study evaluating the benefits of early intervention. *Infants Young Child.* 2017;30(2):147-161. doi:10.1097/IYC.0000000000000090
12. World Confederation for Physical Therapy. International Network of Physiotherapy Regulatory Authorities. Report of the WCPT/INPTRA Digital Physical Therapy Practice Task Force.; 2019. http://www.inptra.org/portals/0/pdfs/ReportOfTheWCPTINPTRA_DigitalPhysicalTherapyPractice_TaskForce.pdf.
13. Martinianno R, Rosdat C, Baker B, et al. Case Studies of Telehealth Programs in New York. *Ronsselaar, NY;* 2018.
14. Wade YA, Elliott JA, Hiller JE. Clinician acceptance is the key factor for sustainable telehealth services. *Qual Health Res.* 2014;24(5):682-694. doi:10.1177/1049732314528809
15. Mourad Ouzzani, Hossam Hammady, Zbys Fedorowicz, and Ahmed Elmagarmid. *Rayyan — a web and mobile app for systematic reviews.* *Systematic Reviews* (2016) 5:210, DOI: 10.1186/s13643-016-0384-4.