EARLY CHILDHOOD RESEARCH ACROSS CULTURES

EARLY CHILDHOOD RESEARCH ACROSS CULTURES:

A SCOPING STUDY OF EARLY CHILDHOOD INTERVENTIONS

ACROSS LANGUAGE AND COUNTRY BOUNDARIES

BY BRANDON JAMES CHAPMAN, B.A.

A Thesis Submitted to the School of Graduate Studies in Partial Fulfilment of the Requirements

for the Degree Master of Science in Global Health

McMaster University MASTER OF SCIENCE (2019)

Hamilton, Ontario (Global Health)

TITLE: Early Childhood Research across Cultures: A Scoping Study of Early Childhood Interventions across Language and Country Boundaries

AUTHOR: Brandon J. Chapman, B.A. (MidAmerica Nazarene University)

SUPERVISOR: Dr. Magdalena Janus

Number of Pages: 1-88

ABSTRACT

Background

Research evidence strongly supports the influence of quality nutrition, cognitive stimulation and nurturing care on the extent that a child reaches full development. Reaching developmental milestones results in positive outcomes for individual health and well-being as well as communal stability and prosperity. Interventions to improve early childhood development are not a recent concept; however, the interaction of one early childhood development outcome on others form a complex, often interdependent, relationship. The complexity of a child's development also includes the child's family, home environment, community and national context. The complex and dynamic setting for implementing early childhood interventions requires more than efficiency or knowledge. It requires patience, cultural competency and a compassion to engage and support a child's family, society and nation. Interventions that are effective in multiple cultures or can be scaled up to a regional or global level are rare and usually focus on one aspect of early childhood development (ECD), like protein intake to prevent stunting. Context does matter, and ECD research is dispersed over vastly different political systems and often focused on specific people groups or subcultures. The scope and intensity of ECD research in the world has not been described and is often unknown to English-speaking researchers who are not personally connected by relationship or literacy to other languages and cultures.

Purpose

The purpose of this scoping study is to answer the research question: "What is being researched related to early childhood development interventions with children six years old and younger in Spanish and Portuguese-speaking countries?" A scoping study of published, peer-reviewed literature on interventions in early childhood development in English, Spanish and Portuguese was performed to understand the concepts in research on early childhood development (ECD). The thesis presents interventions in early childhood development and their usage in Mexico, Central and South America in particular and also in Europe and Africa because of the Spanish and Portuguese languages spoken there. The thesis highlights risk factors, assessment tools and interventions from peer-reviewed research providing a scope of ECD interventions for this world area.

Search methods

Databases searched were related to global health, health sciences, nursing and allied health, psychology and education. They were Global Health, Embase, Medline with PubMed e-ahead of print, PsycInfo, CINAHL, ERIC, LILACS and IBECS. The search strategy and data collection was guided by the research question to be thorough and methodical. Exclusion criteria were utilized to screen more than seven hundred articles to retrieve eighty-six articles that included the correct populations, relevant countries, ECD interventions and early childhood outcomes.

Findings

Macro and micro-context risk factors in early childhood development were highlighted across the literature. They were lower maternal education, informal maternal employment, larger household size, lower wealth index and rural residence. Findings related to child or home-centered interventions revealed varied but some positive outcomes in national programmes in Mexico, Brazil, Ecuador, Nicaragua, Colombia and Portugal. The research across all countries in literature found positive impact on early childhood development from age-dependent nutrition, higher socio-economic status and education in mothers, stimulating parent-child interactions and nurturing home environment.

Conclusions

While a scoping study of ECD provides an overview of the work happening and of the relevant key concepts, the eighty-six included studies can hardly be considered representative of all childhood development interventions being implemented or researched. Some state or national governments and non-government organizations implement early childhood interventions without publishing in a peer-reviewed journal. Many more interventions are not evaluated or monitored. Increased collaboration and networking between researchers and countries is needed. Necessary partnerships between educators, researchers and policy-makers based on national strengths across the globe can facilitate better sharing of knowledge and assessment of appropriate interventions for a population's needs. Further monitoring, evaluation and publishing of interventions in this region of the world is required.

ACKNOWLEDGEMENTS

Obviously, early child development matters to me personally, so I first thank God for life and daily provision for all my needs. What an adventure.

Also of great influence during the thesis process were the numerous adults who have been willing to support and guide me since conception.

My dear biological parents have always been willing to improve themselves in all facets. What examples! They typify what parental provision, listening and engagement can be, even with a strong-willed and wild firstborn son who went through a lot to do what most people do without much effort. May we continue to develop closer and deeper relationships. Thank you, Dad. Thank you, Mom.

Secondly, I have immense gratitude for my Hispanic parents. They modeled and shared Latin culture so freely with me, which has allowed me to expand my horizons and even my academic career to include their peoples, languages and cultures.

Much thanks also to my Canadian parents, who over the course of a year dedicated many calories and prayers for my graduate work in a foreign land.

May we all forever be like children and develop to be more like Jesus the firstborn of God's children (Matthew 18:3; Luke 10:21).

I would like to thank the individuals on my committee who supported me throughout my thesis process with expertise, resources and encouragement, Magdalena Janus, Laura Banfield and Michael Ladouceur.

A final thank you to the McMaster Global Health department for the opportunity and support to learn more about my passions and talents. The Master's in Global Health Class of 2014 was a superb cohort that challenged and encouraged one another through the entire process. Congratulations to my incredible and compassionate colleagues.

TABLE OF CONTENTS

LIST OF FIGURES, TABLES AND APPENDICES

ABBREVIATIONS AND SYMBOLS

ASQ: Ages and Stages Questionnaire

BMI: Body Mass Index

BSID: Bayley Scales of Infant Development

BVS: Biblioteca Virtual en Salud

CCT: Conditional Cash Transfer

CDI: MacArthur Communicative Development Inventories

DDST: The Denver Developmental Screening Test

DeCS: Descriptores en Ciencias de la Salud

ECCE: Early Childhood Care and Education

ECD: Early Childhood Development

ECE: Early Childhood Education

ECFS: Early Childhood and Family Support

ECI: Early Childhood Intervention(s)

EDI: Early Development Instrument

EOWPVT: Expressive One-Word Picture Vocabulary Test

HOME: Home Observation for Measurement of the Environment

ITPA: Illinois Test of Psycholinguistic Abilities

KIDI: Knowledge of Infant Development Inventory

MANOVA: Multivariate Analysis of Variance

MDI: Mental Development Index

MeSH: Medical Subject Heading

MSCA: McCarthy Scales of Children's Ability

NCHS: National Committee on Vital and Health Statistics

NGO: Non-governmental Organization

NLM: United States National Library of Medicine

PAHO: Pan American Health Organization

PDMS-2: Peabody Developmental Motor Scale, Second Edition

PIPPS: Penn Interactive Peer Play Scale

PPVT: Peabody Picture Vocabulary Test

PSM: Propensity Score Matching

SDQ: Strengths and Difficulties Questionnaire

TVIP: Test Visual de Imágenes Peabody

UNESCO: United Nations Educational, Scientific and Cultural Organization

UNICEF: United Nations Children's Fund

USA: United States of America

VHL: Virtual Health Library

WAIS: Weschler Adults Intelligence Scale

WHO: World Health Organization

WPPSI: Weschler Preschool and Primary Scale of Intelligence

DECLARATION OF ACADEMIC ACHIEVEMENT

The following declares the content of the research in this document to have been completed by Brandon James Chapman and also recognizes the contributions of Magdalena Janus, Laura Banfield, Michael Ladouceur, Nibaldo Galleguillos and John N. Lavis in the direction, process and finalization of this thesis.

Chapter 1: Introduction

Prior to exploring early childhood development across diverse communities, relevant concepts should be introduced. What is development? What is health? Are they related in some way? Is early childhood a more valuable time to invest energy, funding and research? How is knowledge transferred, especially cross-culturally and beyond national boundaries?

First, a definition and the context for development could be helpful. The Merriam-Webster dictionary defines the verb 'develop' as "to go through a natural process of growth, differentiation, or evolution". The suffix *-ment* in the word 'development' signifies a "concrete means" or "concrete result" of a specific action (Merriam-Webster, 1999). The term development can relate to either the means or result. Research in early childhood development can relate to the means of childhood development, its result, or both.

The means of development could be an action. The means could also be a set of actions which is then called a process. The result of development could be the effect of a single action or a process. In research, the action, or the process, is often the emphasis of research. The process and details of its method are considered an intervention (Vaivada, Gaffey & Bhutta, 2017). Therefore, research in early childhood development includes observing the natural process of growth, designing interventions and evaluating and monitoring the results of interventions.

For the phrase '*early* childhood development' the focus becomes the concrete means and results of human growth, differentiation or evolution during the earliest years. Examples of concrete interventions could be in nutrition, child rearing or social-emotional competency. Concrete results could be easy to assess like height and weight for physical development or more

dynamic like language or social development. These examples are far from exhaustive for an infant, toddler, or young child. Traditional interventions have been supporting early childhood care and education and improving children's nutrition and task-based skills, often related to academic success (Campbell et al., 2016; Grantham-McGregor et al., 2007). Many developmental results have been studied like child readiness for schooling, socio-emotional awareness and expression as well as adult wage-earning (Bornstein & Putnick, 2012; Grantham-McGregor et al., 2007; Olusanya, 2011). Research and policies in early childhood development usually reference health because of the significance of nutrition for a child's cognitive and physical development. An understanding of the use of the term health can be valuable for insight into early childhood development.

Decades ago, health care providers and researchers began to consider environmental and social influences of health such as lifestyle, environment and community (Evans & Stoddart, 1990; Green & Ottoson, 1994). In fact, since the adoption of its Constitution in 1946, the World Health Organization (WHO) has re-evaluated the concept of health. The first principle of the WHO Constitution states,

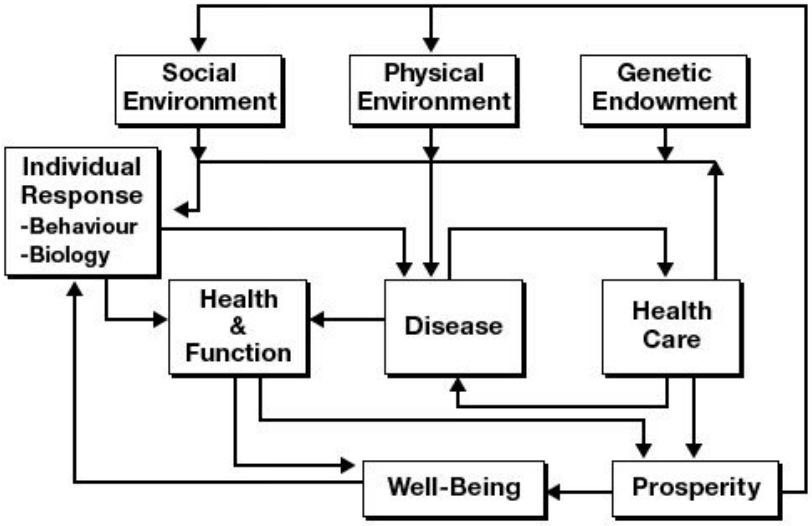
"Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity." (About WHO, n.d., para. 2)

In 1986, the World Health Organization had its first International Conference on Health Promotion, describing health promotion as the process to enable people to improve their health. The Health Promotion charter details a relationship between the concepts of health and well-being from the WHO principle in 1946.

"Health is, therefore, seen as a resource for everyday life, not the objective of living. Health is a positive concept emphasizing social and personal resources, as well as physical capacities." (The Ottawa Charter for Health Promotion, n.d.).

This conception of health as a resource - not a goal itself - is also shared by the researchers Evans & Stoddart (1990), who published a diagram describing health as a support for well-being and prosperity (Figure 1).

Figure 1: Determinants of Health Analytical Framework



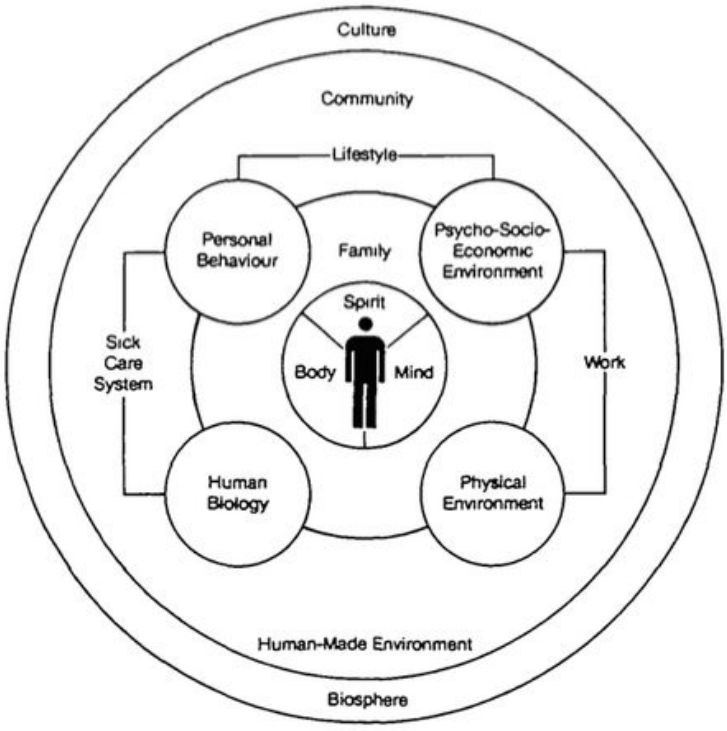
Source: Evans. R.G. and Stoddart G.L. (1990). Producing Health, Consuming Health Care. Soc. Sci. Med. 31(12), pp. 1347-1363.

Currently, the World Health Organization supports a vast range of policies and projects based on this concept of health. The organization addresses air and water pollution, inaccessibility to education, and inequity in employment and social inclusion (Public Health, Environmental and Social Determinants of Health, n.d.). According to medical directors and

population health academics, Kottke, Stiefel and Pronk (2016), these various influences on health are called determinants of health. The social determinants of health are recognized more and more as significant influences on health by health care providers. Evan and Stoddart's diagram details determinants of health beyond disease, such as social and physical environment. They are not the only health researchers to recognize the significance of the environment on health.

The globally active public health physician, Trevor Hancock (UNICEF, n.d.), describes health as an ecology of interactions which are not all related to the prevention of disease. Like the WHO Constitution and Evans and Stoddart's diagram, Hancock describes health care's influence as only one of several on a person's health. However, he describes human health and development as relational and dynamic rather than a direct cause and effect interaction. The model he uses is called The Mandala of Health (Figure 2). Instead of a flowchart, he utilizes an ecological model to describe human development as a relationship of an organism with its environment (Hancock, 1993).

Figure 2: A Model of the Human Ecosystem: The Mandala of Health



Source: Hancock, T. (1993). Health, human development and the community ecosystem: Three ecological models. Health Promot. Int., 8(1), 41–7.

Unlike Evans and Stoddart's inclusion of prosperity as a direct influence on well-being, Hancock includes the economic setting in a psycho-socio-economic circle. He identifies it along with personal behavior as "Lifestyle". The individual and family are within the larger circles of community and culture. The individual and family are also appropriately encompassed by the environmental circles of the human-made environment and natural biosphere. These concentric circles are a representation of the dynamic interactions in the relationships an individual has with the environment during development.

Hancock is not alone in his portrayal of human development as relational and multi-faceted. In a compilation of five papers for *The Journal of Applied Developmental*

Psychology, Campbell et al. (2016) describe many aspects related to early childhood development (ECD), such as school readiness, social and emotional development, and relationship building. They mention academic or task-based skills are often measured, but socio-emotional skills or competencies are not. Susanne A. Denham and Grace Z. Howarth from George Mason University in the USA discuss emotional competence as a part of socially responsible behavior and a necessary aspect for ECD policy makers to support. In fact, Denham and Howarth, and others, describe a need for more holistic approaches toward ECD to support overall outcomes for children and to improve, in their own words, *well-being* (Campbell et al., 2016; Olusanya, 2011).

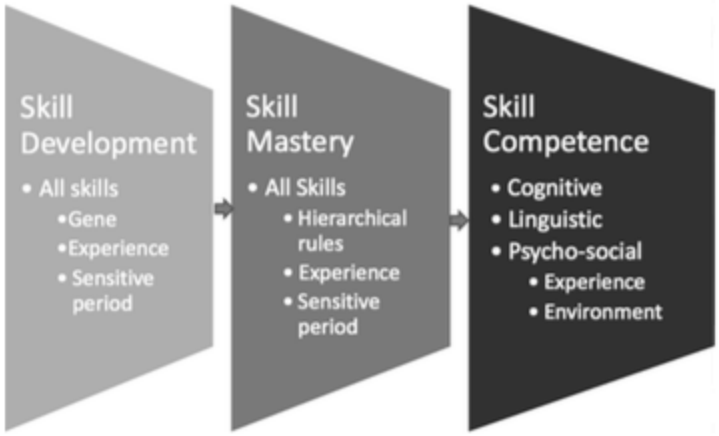
Based on this body of knowledge, some of the determinants of early childhood development are the relationships of the child within family, community, and culture. Some specifics do differ in early childhood compared to older individuals. For example, the home setting or preschool is the psycho-socio-economic and physical environment for a toddler rather than a workplace. This difference in early childhood context does not change the validity of the ecological model where the toddler develops within his or her environment relationally in an interactive way. Health services and health care are a part but not the only nor the largest component. In fact, the length and quality of life for many people are negatively affected because factors outside of the health care industry are not being recognized and addressed in health policy (Evans & Stoddart, 1990). Influences on a child's development go beyond individual behavior and biology, and beyond the environment made by humans. They also include human culture and the biosphere.

Children develop within the same environment as adults. Improvement in any determinant of health improves well-being. Improvements in a nation's economy, its social practices or its natural environment would broadly support people of all ages, not only those in early childhood. Why do some emphasize early childhood development? An emphasis on early childhood development is not to exclude any other person or stage of human development but to recognize the unique opportunity of early childhood. Adult health, abilities, behavior and well-being are largely based on the foundation of developmental stages from childhood (Olusanya, 2011; Webster-Stratton & Taylor, 2001; Yoshikawa, 1995). Early childhood development is a significant stage in the human life span because it is a unique and sensitive time period of human development (Maggi, Irwin, Siddiqi, & Hertzman, 2010; Walker et al., 2011). These first years of life are a time period of rapid growth and sensitivity to stimulation and nurturing (Shonkoff & Phillips, 2000). The cognitive stimulation, social interaction, and nutrition a child receives can be from parents, family or guardians in the home context or from educators and caretakers in childcare settings like preschool. The resources and experiences during early childhood impacts the cognitive, physical and socio-emotional competencies a child will have for the rest of life. (Olusanya, 2011). Deficiencies in one area impacts overall health and well-being because early childhood development outcomes are considered interdependent, especially the cognitive and socio-emotional (Vegas & Santibáñez, 2010). A child's health and well-being occurs as skills for life develop in the child's context and community.

Skill competence is based on hierarchical rules of building achievements on previously acquired skills. As Figure 3 details, skill development proceeds skill mastery and skill

competence. Genetic components provide the foundation for the physical structures used for a child's movement, feeding and communication. An infant can achieve rolling over because of a combination of genetic coding begun in-utero, physical maturation after birth and stimulating experiences from touch and attention by caregivers as a neonate. Developing skills related to movement, feeding and social interaction as an infant allows for mastery of walking and expressing needs for food and affection. These are foundational to develop competence in cognitive and social skills for more complex body movements, using language and participating in conversation. Oral muscles develop while infants feed providing a neural and physiological foundation for the toddler to use oral muscles for language skills later. Childhood experiences - in the family of origin, with parents, siblings, and extended care providers as well as preschool caretakers and educators - all influence a child's skill development, mastery and competence. Early childhood development is essential for further development related to school readiness, educational success, and adult physical and mental health (Olusanya, 2011). Because ECD is the foundation for further development, including later adult well-being, research and funding should increase to support the early development of children to reach recognized milestones and to provide evidence-based interventions for those at risk or delayed in developing skills.

Figure 3: Early Childhood Development Scientific Foundation



Source: Olusanya, B.O. (2011). Priorities for Early Childhood Development in Low-Income Countries. Journal of Developmental & Behavioral Pediatrics, 32(6), 477.

The World Health Organization (WHO) emphasizes investment during early childhood has greater effectiveness on health and well-being than efforts later in life. More significantly, the WHO cites early and appropriate interventions addressing risk factors can improve health, well-being and competencies in the long-term (WHO, 2014). Because the dynamic relationships of human development are ecological, the impact of healthy development is not limited to the child's good alone. Achieving developmental milestones in early childhood has been demonstrated to positively affect family and national contexts also. Positive changes in the intergenerational transmission of poverty, in a nation's development related to its workforce and economic growth, and in the amount of government support utilized by the population are all associated with reaching developmental outcomes early in life. This broader impact is largely due to increased success in education, higher earning power, lower fertility rates and more care in parenting (Grantham-McGregor et al., 2007).

The need for action to improve early childhood development (ECD) is apparent for many policy makers, government officials, parents, and educators; yet, this recognized area for investment has been neglected. The global action plan for ECD has been poorly formulated (Lake, 2011). Approximately 200 million children younger than five years old failed to reach their potential in cognitive development because of poverty, inadequate nutrition and insufficient stimulation (Grantham-McGregor et al., 2007). Broader determinants of ECD, such as the economy, family dynamics and social environment must be included in action plans. The issue is truly global, transcends national boundaries and might be best addressed with cooperative actions (Institute of Medicine, 1997).

At present much emphasis from the WHO and national governments is on maternal and childhood mortality and their access to vaccines and education. The United Nations Development Programme has also set goals to reduce child mortality and improve maternal health (UNDP, 2014). The international health emphasis on decreasing infant and child mortality has resulted in a growing proportion of annual births surviving (Olusanya, 2011). If mortality decreases, the requirements for developmentally appropriate care and interventions for those at risk will increase proportionately. Interventions for positive outcomes, like reaching milestones in language and social development, should be viewed as equal to interventions against infection and death (Campbell et al., 2016). If infant mortality is addressed and maternal health improved without parenting supports for families and language development and socio-emotional competency supports for their children, a possible result is fragmentation in society because of socially detached families with children and adolescents not reaching their potential. An increase

in usage of government support and decrease in wages would also be likely.

If factors of health and well-being are recognized and prioritized, risk factors can be addressed early in life. Positive outcomes in health, education, relationships and employment can be attained. Negative health consequences can be avoided. Through early childhood interventions (ECI), a propensity for negative outcomes can be redirected for health and well-being. Children throughout the world are at risk for developmental delays and slower growth because risk factors are not identified early and interventions are not taken to improve development and long-term well-being. Interventions in early childhood development should be a priority in policy-setting because they are the most immediate need once neonates are born (Engle et al., 2011).

Applying research and discovered interventions in early childhood development requires communication between researchers, policy-makers and stakeholders. In a publication of the USA-based Partnerships for Health Reform, Schmeer (1999) defines stakeholders as any actors: organizations or individuals, who benefit or have a vested interest in a policy. They can be categorized are international, public, national, political, commercial/private, non-governmental organization (NGO)/civil society, labor and users/consumers. Every intervention has stakeholders and requires policy-makers and researchers to consider the context of the intervention. For example, an evidence-based early childhood intervention, such as an early reading program, could be implemented as a policy with educators in a preschool, the enrolled children and their parents. Depending on the context for the early reading program, other stakeholders could be identified such as other at-home care providers like grandparents or

siblings and relevant government, educational, clinical or licensing organizations who could have an interest in outcomes and a capacity to scale up the program with evidence of its success.

The process of communicating research and implementing policies for interventions with stakeholders is known as knowledge transfer and is a field of study in its own right (Lavis, Robertson, Woodside, McLeod & Abelson, 2001). Knowledge transfer is a part of bridging the know-do gap between knowledge and practice (Bennett, 2011). Transfer of research knowledge is significant in connecting research to communities. Interventions necessary for children to reach full developmental potential depends on the capacity for knowledge to be transferred between researchers, policy-makers and stakeholders. The models of human development demonstrate how many stakeholders can be involved and how broad the fields of research can be, from economic to educational to clinical, social and political interests can be involved. This knowledge transfer between organizations and individuals in various fields of health requires collaboration. Collaboration across national or cultural boundaries is also necessary and ultimately essential for better research, better decision-making, better policies, better implementation and better health and well-being of the earth and its inhabitants. Knowledge transfer does not always necessitate translation or interpretation from one language to another like English to French. However, the strategy can include knowledge brokers to facilitate the knowledge transfer process between experts in different fields of study or academics and the general public. For the global health field, the transfer of research knowledge is between different geography, terminology, languages, governments and cultures. The focus and scope of global health emphasizes those who successfully bridge these differences with respect,

competence and patience. Ultimately, knowledge must be communicated between cultures to access and share knowledge different people groups have. Because culture is not the same between countries, areas or people groups, cross-cultural competency is crucial when considering global aspects of early childhood development.

Dialogue between cultures requires a more universal perspective on health than the absence of disease or presence of cultural norms of behavior. A model like The Mandala of Health could be valuable to understand complex settings and interactions or to transfer research over different cultural and political areas. The model can facilitate cross-cultural communication about how health is viewed and what interactions happen in different countries and cultures. The Mandala of Health could be helpful in communities with subcultures or within a country with its different communities. The model can facilitate a discussion of expectations and barriers in how the group functions and interacts within the larger community or country.

While cross-cultural communication is relevant when implementing or supporting early childhood development across cultural boundaries, the topic is beyond the scope of this introduction. However, terms related to how international organizations act across country or cultural boundaries is necessary because early childhood research and interventions are nearly always performed by individuals or organizations outside of the locale or culture where they are implemented.

The interaction of individuals, communities, and governments has changed with technology, international partnerships between groups, and organizations with cross-cultural perspective. Global organizations have emerged with their broad perspective, intercultural

relationships and diverse interests. Organizations like the World Health Organization, the World Bank and Médecins Sans Frontières (Doctors without Borders) have international stakeholders in many countries and people groups. These organizations above national boundaries or territorial regions are supraterritorial. The term describes an organization's influence beyond a single territory or nation while also operating in national and subnational spaces (Scholte, 2005). Their supraterritorial perspective and international networking can level the playing field for the disadvantaged and also highlight differences and inequities in development, health and opportunity between and within communities and countries.

Supraterritorial organizations can impact health and be a significant, unique part of the knowledge transfer process. These organizations influence health research and policies internationally. The actions and policies of bodies like the International Monetary Fund (IMF) and the World Trade Organization (WTO) as well as the worldwide sale of medicine and medical devices from corporations like F. Hoffman-La Roche Limited and Eli Lilly and Company influence health and well-being beyond the country or territory where they have a headquarters. Non-governmental organizations (NGOs) like Médecins Sans Frontières (MSF) and the International Committee of the Red Cross provide services in numerous countries and cultures. Additionally, supraterritorial organizations like the World Health Organization (WHO), United Nations Children's Fund (UNICEF) and the Pan American Health Organization (PAHO) are involved in care, research and decision-making about health around the world and for numerous countries. The scope and practice of these supraterritorial organizations often overlap and can be unclear because of the variety and synchronous actions of those involved. In addition

to the many businesses, institutes, government organizations and private individuals involved in health, three professional fields of health are identifiable: public health, international health and global health (Bozorgmehr, 2010).

The field of public health is the oldest of the three. In the West, public health as it is currently practiced began in the 1800s in multiple countries where sanitation, health care and public policy were jointly addressing epidemics to prevent disease like the bubonic plague and leprosy (Bryant, 2014 & Koplan et al., 2009). Traditionally, a city or country addressed the public health of its own residents or citizens. With the increase in knowledge about biology and medicine, partnerships formed related to disease prevention in populations based on evidence and formed for social reform to bring social equity and justice (Koplan et al., 2009). The scientific study, clinical care and public policies in hygiene and disease prevention were focused on a local community and might be implemented at the national level by the government of a particular country. Public health did not have a scope of practice beyond a country's boundaries.

In contrast, the term international health is connected to the evolution of the subspecialty of tropical medicine into international programs and partnerships to support countries without an infrastructure to address diseases, especially tropical. International health has been recognized as emphasizing differences between countries and the transmission of disease between them (Koplan et al., 2009). Although used for over a hundred years, the term international health had a slower rate of usage than the term global health during the 1990s and into the 21st century (Brown, Cueto & Fee, 2006). Some university programmes in the USA partnered with other countries actually replaced their use of the term international with global (Macfarlane, Jacobs, &

Kaaya, 2008). This change in term usage and the interaction between countries in international health alludes to similarities with global health.

The term global health has been identified to have several uses: the state of health worldwide, an objective or condition for people worldwide, or the interaction of a variety of health knowledge, methods and research (Koplan et al., 2009). Its use has grown out of a change in perspective and actions from many organizations like the World Bank, WHO, UNICEF, the Rockefeller Foundation and the United Nations Development Program as well as the environmental movement. Individuals like the physician, G. A. Gellert, with the International Physician's Movement and the public health professionals, Milton and Ruth Roemer, characterise this change in perspective (Brown, Cueto & Fee, 2006).

Because of the worldwide increase in interactions between governments and the increased speed and ability for individuals to travel, engage with others and participate in worldwide activity, local decisions and actions can take on global impact or goals. Based on this worldwide interaction and a worldwide public health strategy, some authors argue public health is the same as global health (Fried et al., 2010). The field of public health does not address or even consider the complex interactions between societies while global health does - such as supraterritorial organization involvement, historical intercultural interactions, regional politics or family gender roles. While public health considers the health sciences and social sciences for prevention, global health considers inter and multi-disciplinary ways for prevention, treatment and care (Koplan et al., 2009). Figure 4 details a more complete comparison of global, international and public health.

Figure 4: Comparison of global, international and public health

	Global health	International health	Public health
Geographical reach	Focuses on issues that directly or indirectly affect health but that can transcend national boundaries	Focuses on health issues of countries other than one's own, especially those of low-income and middle-income	Focuses on issues that affect the health of the population of a particular community or country
Level of cooperation	Development and implementation of solutions often requires global cooperation	Development and implementation of solutions usually requires binational cooperation	Development and implementation of solutions does not usually require global cooperation
Individuals or populations	Embraces both prevention in populations and clinical care of individuals	Embraces both prevention in populations and clinical care of individuals	Mainly focused on prevention programmes for populations
Access to health	Health equity among nations and for all people is a major objective	Seeks to help people of other nations	Health equity within a nation or community is a major objective
Range of disciplines	Highly interdisciplinary and multidisciplinary within and beyond health sciences	Embraces a few disciplines but has not emphasised multidisciplinarity	Encourages multidisciplinary approaches, particularly within health sciences and with social sciences

Source: Koplan, et al. (2009). Towards a common definition of global health. Lancet, 373, 1994.

The three fields are complementary, and a consensus on the meaning and scope of these fields can avoid conflict or redundancy (Bozorgmehr, 2010, Koplan et al., 2009). Interest from social, political and academic groups or evolution of philosophy, attitude and practice could influence the use of these terms. Current confusion about their different meanings might continue (Koplan et al, 2009). Ultimately, international and public health formed at a specific time in history in certain cultures and countries. In order to access all that is available in communities and share it across country boundaries or cultural differences, the field of global health formed.

The relevance of this discussion to the topic of early childhood development is to recognize that all three fields, global health, international health and public health are professional groups with resources and research relating to early childhood development; however, global health is the only one able to address prevention and implementation across, between and within countries and cultures. Global health facilitates mutual partnerships and considers evidence without an emphasis or precedent based on its origin. The authors, Koplan et al., for the Consortium of Global Health Executive Board (2009), highlight this mutuality as a unique aspect of global health in contrast to international health. To improve health and

well-being outcomes around the world based on evidence and for the benefit of all, an approach based on mutuality is necessary. Mutuality allows collaboration of knowledge and sharing of resources.

This mutuality is necessary for collaboration of knowledge and resources to improve health and well-being around the world based on evidence for outcomes and beneficial for all of those involved. This mutual interaction and transfer of knowledge occurs in local places and also through supraterritorial organizations and technology regardless of the geography of the actors involved. To describe these interactions the portmanteau ‘glocal’ was formed from combining global and local. Interactions from the telescoping between local and global form a new contextualization of global ideas, actors or actions in local settings, This idea was not first in the English language but used in Japanese related to agriculture and business practices of applying global concepts or products to personal land or local markets (Robertson, 1995).

The author, Scholte (2005), defines glocal generally as "reflecting and characterized by both local and global considerations", and the researcher, Roudometof (2015), describes the term as part of Global Studies. Based on these definitions, the scope of this thesis on early childhood interventions is glocal, involving individual children’s development, home-setting, family, local language and culture. The scope also discusses the macro-context in the country of residence, their cultural setting and additionally a glocal context for the transfer of research knowledge with the world area or through the national language used for ECD research. This scoping study in global health recognizes the significance of researchers who are bridging political or linguistic barriers with their research and the places where this research is being produced related to early

childhood interventions in Spanish and Portuguese-speaking countries.

The authors, Lavis et al., (2001) detail a framework for knowledge transfer and reference the role "knowledge transfer associates" play to be informed communicators who share knowledge with stakeholders in various settings or professions like at work parties or conferences, or with policy-makers or clinicians. Many researchers connect across political, cultural or language boundaries in their studies and relationships. Some are interested, capable, and competent to engage and overcome barriers in knowledge transfer from one area or location to another. They are unique knowledge transfer associates. Because of the glocal impact possible through this type of researcher, the novel phrase glocal associate is suggested to identify their unique role.

In addition to identifying people who are glocal associates and able to bridge national, political or linguistic barriers for knowledge transfer, the local institutions or supraterritorial organizations where these glocal associates create research are of significance also. When a glocal associate composes research, the knowledge could be produced at an academic institution with mostly national focus, like McMaster University, an organization with regional focus, like the Pan American Health Organization (PAHO) or a place with worldwide scope like the World Bank. The articles from this scoping study are potential resources to connect with affiliates for knowledge transfer in many different contexts worldwide.

Chapter 2: Background

This thesis intends to support the growing field of global health and describe published

research on early childhood interventions in Spanish and Portuguese-speaking communities published in English, Spanish and Portuguese. The approach is through a scoping study of English, Spanish and Portuguese peer-reviewed literature. These languages were selected because they are the national, de facto, languages of the three largest countries by population in the Americas: the United States of America, the United Mexican States and the Federative Republic of Brazil (US - CIA, 2018). An initial hypothesis was early childhood research in the Spanish and Portuguese countries of the world would be available in these research databases in one or more of these three languages. The author is capable of reading articles for data purposes in these three languages and has lived or worked in these languages for decades. For the interests of ECD research and its knowledge transfer, these languages are also spoken in communities and are the language of instruction in countries on all inhabited continents of the globe. Timor Leste and Equatorial Guinea are examples of Spanish and Portuguese being a language for knowledge transfer because of their de jure status and usage in education and politics despite other languages having prominent use (US - CIA, 2018).

Ultimately, the goal of the scoping study is to propel research toward improved evidence-based practices involving child development, family empowerment, nutrition, caregiving skills, school readiness and home environment in the Americas. A secondary outcome is to facilitate interaction between various researchers, universities, organizations, populations and countries throughout English, Spanish and Portuguese-speaking communities. Improved cross-cultural collaboration in early childhood development (ECD) and early childhood and family support (ECFS) can improve understanding and stability within and between nations,

especially across the Americas and also globally because of historical experiences and current interactions with these European languages and their cultures.

Much of the political and social change in Latin America has resulted in positive changes to health care and health policy, but inequities still exist for women and children, rural and Indigenous populations. These inequities hinder national and regional development. While the Americas have made great strides to reduce neonatal death and increase vaccination of childhood diseases, early childhood development has not been addressed sufficiently (PAHO, 2013). Mexico is an example of the condition of ECD and ECFS in the Americas. Mexico has recognized the inherent worth of early childhood development and begun promoting it, but a national standard does not exist. Monitoring, screening and referrals are not occurring for families and children at risk because no system is in place to evaluate and connect families to resources and supports (Castro de, Allen-Leigh, Katz, Salvador-Carulla & Lazcano-Ponce, 2013).

Authors with the World Bank, Vegas & Santibáñez (2010), divide factors in early childhood development (ECD) along two contexts: macro and micro (Figure 5). The macro-context includes aspects of ECD at the country level: economic factors, political, social and cultural prioritization of early childhood development, racial and ethnic diversity, gender participation in the workforce and human rights. The micro-context details the significance of factors at the family level: family characteristics, socio-economic background, parental education and employment, parenting practices, household income, home environment, nutrition, and maternal and child health. The prioritization of these factors can vary depending on

demographics, regions and countries in the Americas; however, all have applicability in early childhood development research because they influence ECD outcomes in growth and well-being. The analytical framework is complementary with previously introduced aspects of health and well-being from researchers, Evans and Stoddart (1990) and global policy educator, Trevor Hancock (1993) in the introduction of this thesis. While the different authors agree on ECD outcomes and much of the context for them, some differences do exist.

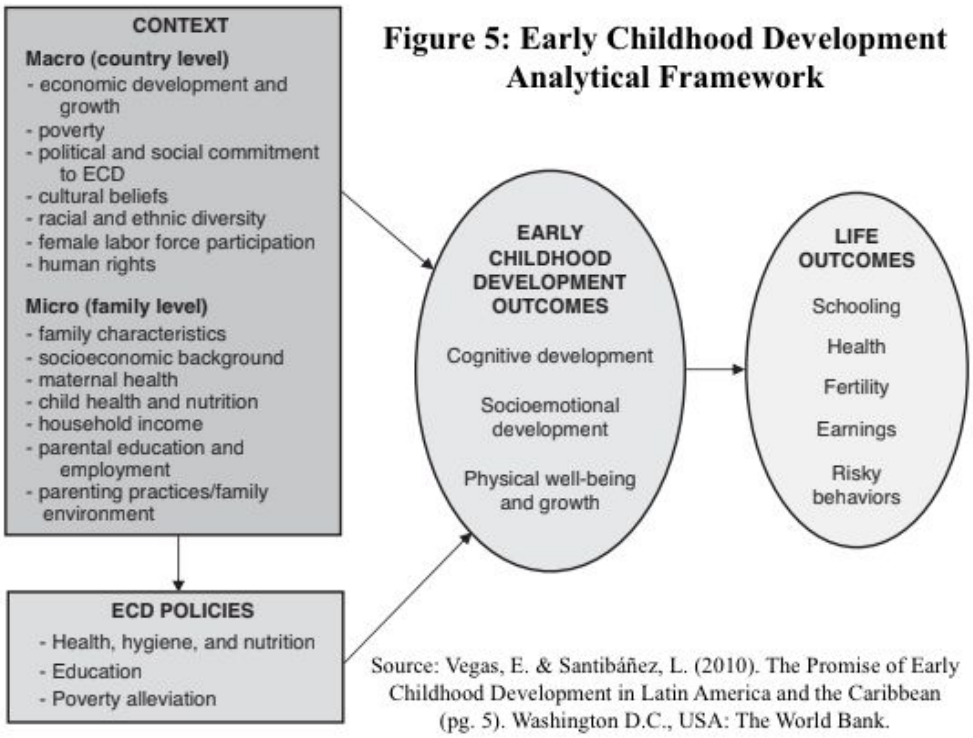


Figure 5: Early Childhood Development Analytical Framework

Source: Vegas, E. & Santibáñez, L. (2010). The Promise of Early Childhood Development in Latin America and the Caribbean (pg. 5). Washington D.C., USA: The World Bank.

A difference of the World Bank analytical framework by Vegas and Santibáñez is the inclusion of the political commitment to early childhood development in the macro context at the country level. Neither Evans and Stoddart's flow chart nor Hancock's Mandala of Health detail a political setting for health. Hancock (1993, pp. 42, 45) does recognize The Mandala of Health is

not "all encompassing" and includes political strategies implicitly in its outer circle. Although the political could be presumed in Hancock's terms like social environment, culture or community, only Vegas and Santibáñez's analytical framework explicitly state it.

The political commitment to ECD is more relevant than previously in history. Research in early childhood development historically occurred at institutions located within national boundaries. Currently, research can occur in supraterritorial organizations like the World Bank or other academic or political settings different from where it is being applied. Ultimately, all ECD policies are implemented with and for people in a political setting whether in the setting of family elders, tribal leaders, formalized elections, a monarchy or combinations of these forms. To analyze early childhood development at the macro level for intervention or public policy, the World Bank authors appropriately include the political setting of the country where development is being analysed. This aspect cannot be ignored. Even in a global environment of diversity and increased cross-cultural communication, an analysis of early childhood development must recognize, engage and respect the political setting of a country and support families and children without dishonoring or undermining their political leaders and context.

Absent from the World Bank's analytical framework, but included in Hancock's model, is the environment: both the natural environment, or biosphere, and the human-made environment. The dynamic relationships in Hancock's model with concentric circles easily include the environment. However, in the other model the environment is not easily represented with its direct relationships. The biosphere and human-made environment are relevant to ECD policies, especially health, hygiene and nutrition, which Vegas & Santibáñez (2010) include in

their framework. The environment can not be excluded from ECD policies. Interventions in ECD related to the environment are valuable in every context.

Although their analytical framework could be used for any country or population, Vegas and Santibáñez wrote for the World Bank region of Latin America and the Caribbean. They highlight the potential of policies in early childhood development for greater human development in that geographical area. The needed prioritization of aspects of the macro and micro-context for ECD is specific to each country. The prevalence of risk factors for poor ECD outcomes, like Indigenous or rural status, vary across countries.

Of the Latin American countries, Bolivia proportionately has the highest Indigenous population (Heaton, 2003), while Chile only has seven percent who identify as Indigenous (IWGIA, n.d.). Even within a country with overall poor health outcomes, rural settings increase the likelihood for ill health, stunting and poverty in children (Heaton, 2003). In contrast to high urbanization across Latin American countries, Bolivian people living in rural communities of less than 2,500 people account for forty percent of the population and forty-nine percent of Bolivian children are in rural areas. The context of rural living and the risks it includes must be included in any approach to improve the health and well-being for children there. Additionally, in comparison to those with non-native ethnic background, Indigenous people groups in Latin America have more barriers to economic, educational and nutritional resources resulting in increased risk of poverty, lack of education and growth stunting (Psacharopoulos & Patrinos, 1994). Living in rural areas also increases the risk of poverty and stunting (Heaton, 2003).

While this world region does not have poverty as extensive and severe as others, a large

proportion of young children do live below the poverty line in Latin America and the Caribbean (Vegas & Santibáñez, 2010). Poverty can be the most prevalent macro risk factor for children in some Latin American countries. For example, in Peru sixty percent of children under five years old are impoverished (UNICEF, 2008). Poverty is not relegated to rural areas. Urbanization might bring more access to resources and employment, but low-income, impoverished people are present in Latin American cities. In Guatemala and Peru, more than fifty percent of the urban population lives in areas the United Nations categorized as slums. In contrast, less than ten percent of the urban population lives in slums in Chile and Uruguay (UN-HABITAT, 2010). Although early childhood interventions (ECI) are necessary in any community, the approach and risk factors would likely be different in Chile compared to Bolivia.

As a whole region Latin America and the Caribbean are already the most urbanized region in the world with seventy-seven percent of the population residing in urban areas. A trend of accelerated urban growth is present for this region although not at equal rates across countries. Additionally, the proportion of youth is increasing in the population of this world area (PAHO, 2013). These circumstances mean the current and projected majority of young children in Latin America and the Caribbean will live in urban settings. Such settings are not remote or desolate and often have more infrastructure, easier access and greater economic means for early childhood interventions (ECI) than rural settings. What can be lacking are the necessary political will or cultural beliefs for prioritizing ECD. This region of the world is characterized by strides to increase education - in particular for women and children (Gakidou, Cowling, Lozano & Murray, 2010). The advantageous result is an increased rate in educated adults, especially

women of reproductive age. The education provided has decreased infant mortality because a literate group of caregivers have an increased ability to learn and provide evidence-based care for newborns and children (Gakidou, Cowling, Lozano & Murray, 2010).

Literacy and accessibility to education improve uptake of knowledge. With increased population density from urbanization and with more educated caregivers, positive conditions exist for increasing ECD programmes specifically in Latin America. Although country and family setting could have risks for poor ECD outcomes, Latin American populations and parents are wealthier, more urbanized, educated and prepared to learn about and support ECD than previously. The beneficial circumstances are an opportunity to research current practices, learn from the experiences and scale-up early childhood interventions (ECI) which show positive outcomes. Urbanization and a more educated populous mean the health and security of all the Americas are intricately tied to how well our differences are valued and our similarities are leveraged. Part of this process is recognizing barriers to early childhood development in rural and Indigenous communities. A multi-faceted approach can reach the variety of families and communities in Latin America. Interventions can be scaled like educational materials to reach those in a low socio-ecomonic status and those who are in a higher status. Much of the process is engaging with those who have often received food, vaccination and literacy but not the support and knowledge to reach other outcomes in early childhood development like social and emotional development. This historical approach to support physical outcomes in growth through nutrition and medical care is valuable but insufficient.

The frequency of implemented early childhood interventions is increasing. Mexico,

Brazil, Colombia, Chile and Uruguay have recently scaled up early childhood care and education (ECCE) from birth to six years old; however, monitoring and evaluation of these interventions have not been included or are insufficient to know the impact on early childhood development (ECD) outcomes (Toma, Kearns, Potter, Raifman & Castro, 2014; Bernal & Fernández, 2013; Staab & Gerhard, 2011; Vegas & Santibáñez, 2010).

Portugal has increased early childhood education to age six and has emphasized the family as the primary context for early childhood development (Vasconcelos, 2013). The author, Chave de Almeida (2004), states the goal for early childhood intervention (ECI) is improved quality of life for the child and family. Guralnick (2005) uses the phrase "family patterns of interaction" to describe the family context which influences a child's development. Family-centered, or home-centered interventions, rather than child-centered interventions can improve accountability in care and education, but monitoring and evaluation is still necessary to prove their effectiveness. Research and implementation of ECI for ECCE does not necessarily guarantee children reach their ECD milestones because accountability for their effectiveness is necessary.

Concerns over the benefit of implemented programmes in ECCE are present (Serpa Pimental, 2004), especially when the quality is not evaluated (Nordtveit, 2008). After birth and infancy, a toddler can make physical gains in development but parent-child attachment and emotional and intellectual development are still a valid concern, especially for those in an at-risk setting (Cárcamo, Veer, Vermeer & IJzendoorn, 2014). The need for research on ECD interventions and their evaluation and monitoring in Latin American communities is significant.

Some ethnographic and rural studies provide knowledge about the conditions of childrearing and education in Mexico, Central and South America. However, early childhood development outcomes are not assessed in such studies. Research on interventions with Hispanic families in the USA is most readily available to English speakers and can allude to what could be effective in Latin American countries. Similarities in parenting have been demonstrated between American and Mexican mothers (Solís-Cámara, Fox & Nicholson, 2000), but any similarity in parenting, family or cultural context is not sufficient to determine interventions and their implementation in different countries. Immigration to another country dramatically changes the macro context for a family. The family, children and caregivers are in a country context with a different political, ecological, and social setting. As Evans and Stoddart's analytical framework highlights, policies for interventions in early childhood development require the country context, which means interventions for Spanish-speaking populations must include the context of the country of implementation. Immigration changes the environment of where and how early childhood development occurs. Similarities in parenting between groups, shared background or ethnicity is not sufficient to generalize early childhood interventions, especially across political or cultural contexts. These same political, cultural and language differences are barriers to access appropriate and contextualized research.

Evidence about early childhood interventions in Mexico, Central and South America is not compiled or easily accessible in any language to researchers, educators and families. In particular, research is lacking on how intervention through early childhood care and education (ECCE) might support low-income children in Latin America when care is scaled up into a

national or regional programme (Bernal & Fernández, 2013). Even with money and personnel directed toward early childhood development (ECD), conditions can still keep children from achieving full developmental potential. Without an understanding of which factors in interventions are helpful or harmful to ECD, poor outcomes or "capability deprivation" can still occur although nutrition is provided, education is accessible and income is relatively high. The 1998 Nobel Prize winner in Economic Science, Amartya Sen, emphasises development is freedom. He describes capability deprivation as an awareness of poverty beyond a person's means, especially income, and related to the goals of the individual, especially understood as an inability to achieve those ends (1999, pp.90). Without monitoring and evaluation of ECCE programmes to provide adequate research on ECD outcomes, children will continue to grow up into adults without the freedom, that is, the capability to reach their goals. Limited collaboration or language barriers to sharing research slows development and transfer of knowledge on early childhood interventions and hinders the freedom children need to reach their potential.

An understanding of what research is occurring, how it is being utilized and with whom it is being shared can facilitate collaboration, knowledge transfer and awareness of what gaps in evidence are present. Within clinical and research-based fields of science, evidence-based practice is an increasingly common goal. This expectation for evidence-based practice has resulted in a growing body of systematic reviews (Arksey & O'Malley, 2005). Non-profits such as Cochrane, previously named Cochrane Collaboration, and the more social science leaning Campbell Collaboration are forming guidelines for conducting and disseminating systematic reviews (Abrami et al., 2009). A thorough review of literature is necessary to achieve

evidence-based practices that result in children reaching their developmental potential and life goals.

An initial search for this thesis related to early childhood development and interventions in Spanish and Portuguese-speaking countries revealed a lack of systematic reviews. In fact, preliminary, ad hoc searching in databases resulted in an insufficient number of articles with similar methodology and quantified outcomes to complete a systematic review. Although systematic reviews are often considered standard for evidence-based practices, they formed from the approach of the medical sciences. They have a quantitative methodology and often a single research question, such as the efficacy of one treatment over another for patient outcomes with a particular disease. The systematic review process does not readily lend itself to the qualitative, cross-disciplinary and complex nature of early childhood development. This incongruence could be the reason no systematic reviews on ECD in these countries were found in initial database searches.

Considering the absence of systematic reviews and the complex nature of early childhood development, a different approach is appropriate and more valuable. A scoping study was found to best capture the qualitative nature of ECD and address the absence of literature describing interventions in early childhood development across publication languages.

A scoping study collects pieces of information and preserves individual study results but still evaluates the big picture by including multiple studies through post hoc inclusion criteria (Arksey & O'Malley, 2005). The methodology has been identified by a variety of descriptive words: scoping review, rapid review, preliminary review, scanning review, quick and clean

review or basic review (Abrami et al., 2009; Levac, Colquhoun & O'Brien, 2010). Scoping studies are an approach to more quickly understand an area of research. Mays, Roberts and Popay (2001) state that scoping studies

> aim to map *rapidly* the key concepts underpinning a research area and the main sources and types of evidence available, and can be undertaken as stand-alone projects in their own right, especially where an area is complex or has not been reviewed comprehensively before (p.194, emphasis in the original).

Since Hilary Arksey and Lisa O'Malley's seminal article described a scoping study framework in 2005, a methodology has formed out of multiple papers (Daudt, Van Mossel & Scott, 2013; Davis, Drey & Gould, 2009; Levac et al., 2010). This set of papers provides collectively agreed to norms for the research methodology of scoping studies and was repeatedly consulted to inform this thesis on published, peer-reviewed literature on early childhood research in English, Spanish and Portuguese.

A scoping study can be improved by including articles beyond published, peer-reviewed literature, called grey literature; however, compiling the materials from numerous sources and assessing the quality of their methodology requires a team of researchers. Limiting the studies to peer-reviewed literature for this thesis was an effective way to manage time constraints. Database searching to practice search strategy in 2014 did produce twenty-two articles. The results of the search in 2014 were included with the 2019 scoping study for the Findings and Discussion sections of this thesis.

Chapter 3: Scoping Study Methodology

Due to the multidisciplinary nature of early childhood development and the many specialized fields involved, several types of databases were searched. Two core health sciences databases searched for this scoping study were Medical Literature Analysis and Retrieval System Online (Medline) and Excerpta Medica dataBASE (Embase). Medline is compiled by the United States National Library of Medicine (NLM) and includes 5,600 journals from 1946 onward and contains 21 million citations. Embase is published by the Dutch company Elsevier and contains 8,400 journals from 1974 to present. Some journals are included in both Medline and Embase; however, both databases have been demonstrated to be necessary in searches (Suarez-Almazor, Belseck, Homik, Dorgan & Ramos-Remus, 2000). The PubMed search engine, the free, public access point for Medline, provides an electronic publication of accepted studies that have not yet gone to print in journals. These E-pub, ahead-of-print studies were also searched in order to include the most recent findings.

The additional databases used for their specializations in the fields of psychology, nursing, public health and education were the American Psychological Association database (PsycInfo), the Cumulative Index to Nursing and Allied Health Literature (CINAHL), the UK-based public health database Global Health and the Education Resources Information Center (ERIC). Extending search strategies beyond standard health sciences databases to other types of databases has been found to be effective for collecting relevant studies (Savoie, Helmer, Green, & Kazanjian, 2003).

Due to the goal of improving research and collaboration with Spanish and Portuguese-speaking countries and avoiding barriers to accessing literature, additional multi-language databases were searched. These were Literatura Latino Americana e do Caribe em Ciências da Saúde[1] (LILACS) and Índice Bibliográfico Español en Ciencias de la Salud[2] (IBECS). The LILACS and IBECS databases are trilingual databases, English, Spanish and Portuguese. These databases have a multilingual set of subject headings called Descriptores en Ciencias de la Salud[3] (DeCS). The Biblioteca Virtual em Saúde (BVS)[4] website provides DeCS subject headings in English, Spanish and Portuguese. The Virtual Health Library webpage for Health Sciences Descriptors (DeCS) describes DeCS as "multilingual and structured vocabulary" created to be a unique way for searching scientific journals, books, articles, congressional proceedings, technical reports and other types of material in multiple languages with a common terminology. The DeCS terms were formed from the USA-based National Library of Medicine MeSH terms but is not limited to them (DeCS - Health Sciences Descriptors, 2019). The intent of including these multi-language databases goes beyond the focus of this scoping study and is also based on a multi-language strategy demonstrated to strengthen research results and decrease bias.

The inclusion of databases with low-English content has been demonstrated to improve the quality of research and should be utilized as a routine source to identify articles (Clark & Castro, 2002; Manríquez, 2009). Clinical and biomedical databases in English have a specialized scope and do not necessarily include the same journals as non-English research databases. Of the

[1] Latin American and Caribbean Health Sciences Literature
[2] Spanish Bibliographic Index on Health Sciences
[3] Health Sciences Descriptors
[4] Virtual Health Library (VHL)

670 journals in the LILACS database, only 41 are also indexed in Medline or Embase (Castro, Clark & Atallah, 1997).

The inclusion of these non-English language databases is also beneficial for decreasing the likelihood of positive-results bias in a scoping study. Positive-results bias occurs when researchers are more likely to submit positive or statistically significant results. This bias can also occur with publication editors when accepting research studies. Researchers have demonstrated English-language publications in particular are more likely to include research studies with statistically significant results than studies with negative or inconclusive results (Manríquez, 2009). Utilizing the LILACS and IBECS databases greatly increased the number of peer-reviewed journals that were searched and was done to decrease English-language publication bias. The superior quality multilingual databases provide for scoping studies and systematic reviews is theorized by this author to be partly due to the value of people who are *glocal associates*, those who are interested, competent and practised in accessing research, sharing knowledge and modulating its implementation between languages, countries and cultures. These people might be a unique aspect in knowledge transfer.

Searching through these databases was through a systematic and sensitive process following the structured and itinerant process for a scoping study provided by authors, Arksey & O'Malley (2005) The scoping study process was driven and focused by a research question to achieve a thorough and methodological scoping study on the thesis topic: *What is being researched related to early childhood development interventions with children six years old and younger in Spanish and Portuguese-speaking countries?*

For each database three concepts were searched: early childhood development, early childhood interventions and geography terms for Spanish and Portuguese-speaking countries. Unique terms were found by mapping the terms to database subject headings. The databases' thesaurus also provided terms in an iterative process. This exploration in the databases was helpful because the term early childhood interventions as a search term was too precise resulting in too few studies for many databases. Increased terminology helped capture more relevant articles and revealed valuable terms and categorization within the different databases. For instance, by exploring the hierarchy of early childhood education, the relevant subject heading "nursery schools" was found in Medline's Medical Subject Headings (MeSH). This term, however, is not categorized as a subject heading in Embase. For four databases: Embase, Medline, Global Health and PsycInfo, the same search strategy was utilized. For continuity and balance, terms were searched as keyword and subject headings. This allows terms not categorized as a subject heading in a particular database to be used as a keyword search instead. For the other databases with different indexes keywords were used more. The result of this search strategy utilized a combination of subject headings and keywords to combine the three major ideas in the following general formula: (early childhood developmental outcome terms) AND (early childhood intervention terms) AND (Spanish or Portuguese-speaking country names and Latin American regional terms). Details of the search strategies for the databases are included in Appendices A through E.

To inform this scoping study, a total of eight databases were searched for relevant articles. Exclusion criteria, informed by the research question, were utilized to screen the over

seven hundred articles retrieved through the search strategy. Exclusion criteria eliminated studies with humans older than six years old when the intervention occurred. Studies were excluded that did not evaluate an ECD intervention or did not evaluate outcomes related to early child development.

For example, a study on the prevalence of childhood malnutrition would be excluded. A study on the cognitive development of malnourished children in a protein-based intervention programme would be included. Articles on the context of ECD without ECD outcomes were excluded like school or institutional-level interventions with outcomes on teachers' attitude or behavior. Articles on the implementation process of an ECI or strictly a cost analysis were excluded as well. These articles do not have an evaluation of an outcome related to early childhood development.

Lastly, studies from Haiti, Belize, Guyana, Suriname and French Guiana were excluded because they are outside the scope of the thesis despite their geographical proximity and interactions within the Amerian neighborhood. Additionally, the few systematic reviews of interventions in multiple countries of Spanish or Portuguese speakers were saved; however, they were excluded from this scoping study due to the necessary time and personnel required to categorize their findings and data into the developed database for the scoping study.

The included studies were categorized based on the type of intervention: physical, socio-emotional or cognitive development, or a combination of these three. The evaluated outcomes were categorized the same. For example, a reading programme in a preschool would be a socio-emotional and cognitive intervention. If reading comprehension is the only outcome

measured, the outcome examined would be cognitive. If conversational turn-taking, recognition of emotions, empathy or attachment is examined, the outcomes would be socio-emotional.

Chapter 4: Findings on Early Childhood Research

The methodology of this scoping study produced over seven hundred results although only a fraction fit the inclusion criteria. As hypothesized all articles on the relevant populations were available in English, Spanish, Portuguese or a combination of these languages. The included articles with early childhood interventions and outcomes in Spanish or Portuguese-speaking countries are summarized in Table 1 below. A more detailed retrieval flowchart is provided in Appendix F.

Table 1 - Scoping Study Search Results

Total studies from database searching: 725

Total articles excluded by criteria: 633

Total after duplicates were removed: 86 included

The included studies based on the scoping study criteria used varied approaches and methodologies to evaluate developmental outcomes. Assessments and evaluations of the micro-context were commonly, although not universally, performed to determine children at risk and correlations of household location and income, parental education and employment, maternal anthropometrics and income, and paternal presence and activities. As demonstrated from the initial searches in 2014, few systematic reviews were found through the scoping process, and many different assessments and outcomes were utilized. Less than five systematic

reviews on early childhood interventions (ECI) with measured outcomes were discovered. Too few systematic reviews were available, and their different methodologies did not facilitate conclusive evidence to be drawn from them. As hypothesized after the initial database searches, presenting findings from peer-reviewed ECI systematic reviews in these countries is not statistically valuable at present.

In contrast, a large number of articles were correlation studies between risk factors and children who were malnourished, stunted, in poverty, or presenting developmental delays physically, cognitively or socially. As detailed in the scoping study methodology, these articles without interventions were excluded in the references because interventions are a major focus of this scoping study. Due to the large number of articles and relevance of risk factors to researchers and academics of early childhood development, some of the details and insights of early childhood research on risk factors in these countries are included prior to introducing findings from the articles of the scoping study on early childhood interventions.

Despite the anticipated lack of systematic reviews and absence of interventions in many articles from the database searches, the databases searchers did produce evaluations of ECI and measurements of early childhood development (ECD) outcomes. Sufficient articles were found to provide a scope of what risk factors are being recognized and assessed as well as interventions being implemented to address risk factors in this world area. These provide useful information of what is occurring in ECD research and avenues for knowledge transfer across cultures.

The findings from the studies cover early childhood developmental risk factors, early childhood interventions, and a description of the scope of ECD in Spanish and

Portuguese-speaking countries and gaps in the peer-reviewed literature. The findings related to risk factors are divided in micro-context and macro-context according to the ECD framework from World Bank authors Vegas & Santibáñez (2010). The findings related to ECI are divided into child or home-centered interventions based on research by Snilstveit et al. (2014). The findings end with a summary of some assessment and methodology observations from the twenty-two studies of the preliminary 2014 search and the eighty-six studies of the 2019 scoping study.

Risk Factors

Risk factors correlated with inadequacies in nutrition, school readiness and developmental stimulation were well documented across the literature. They were lower maternal education, informal maternal employment, larger household size, lower wealth index, and rural residence. The impact of these risk factors on ECD are best described in their macro or micro-context.

Macro-context

The negative cycle of poverty and lack of education can result in poor ECD outcomes; however, maternal employment, even in the informal sector, may improve the circumstances for children who would otherwise go hungry. The various childcare strategies for working mothers in these Hispanic countries naturally depends on socio-economic factors. The need for household income and appropriate childcare for those in a low socio-economic status (SES) is typified by a study on peri-urban mothers in Guatemala (Engle, 1991). Of 293 mothers interviewed, the

majority left their children with another family member (60%), and some worked at home with the child (21%) or took the child to work with them (19%). A quarter of those who left the child with someone else paid the person. All of the mothers, except four, reported being satisfied with the care their child received. Additionally, this study identified that young children between the age of 8 to 35 months, who are cared for by preteen siblings, had significantly lower weight for height than those in other situations. This effect was found even when controlled for SES and maternal employment.

The impact of living in remote areas was noted numerous times. Although a remote setting is an ECD risk factor, the circumstances are more nuanced because positive outcomes can also be observed. Stevenson et al. (1978) observed strengths of jungle versus city children. While city children had stronger verbal skills, jungle children were well developed in visual discrimination and the concept of ordered series. Beside the actual location of ECD, transition can have an influence on children. Reyes et al. (2004) found the actual migration from a rural to urban location was associated with child stunting.

Micro-context

Particular time periods of development from birth to six years old were recognized as sensitive for certain aspects. Lower weight to height due to care by preteen siblings was only observed from 8 to 38 month-old toddlers in Guatemala, a time when physical growth often falters for young children (Engle, 1991). Although in a different country, twenty-four-month-old children were also shown to have decreased mental development scores across the second year of

life. These findings were attributed to family's lack of social capital, inadequate parent-child socialization and the completely preventable parasitic load of the rural children in Paraguay (Austin et al., 2006).

Studies that evaluated the home environment emphasized multiple aspects that were related to ECD. In Mexican infants, gross motor development of static balance and locomotion and fine motor development of grasping and visual-motor integration were associated with parent-child involvement, verbal reinforcement of positive behavior and absence of restriction and punishment (Osorio, Torres-Sánchez, Hernández, López-Carrillo & Schnaas, 2010). In a Costa Rican home, mental development was associated with organization of the environment, appropriate play materials, variety in daily stimulation and absence of restriction and punishment (Lozoff, Park, Radan & Wolf, 1995).

Interventions

Several studies found maternal characteristics to have an impact on development. Handal et al. (2007) showed a positive association between maternal education with communication and problem-solving skills in infants in rural Ecuador. Engle (1991) did not find an association with maternal education but determined child growth improved when a larger percentage of family income came from the mother. Breastfeeding was the emphasis of one study. At six months, infants who were fully breastfed for at least four month had a greater mean ponderal index; i.e., they were less lean. At twenty months the same infants no longer had a greater ponderal index but were lighter and shorter than children not fully breastfed for at least four month (Eckhart,

Rivera, Adair & Martorell, 2001).

Two national child-centered programmes were found within this scoping study. The Hogares Comunitarios de Bienestar (Community Welfare Homes) is an intervention programme from Colombia. The programme serves eight hundred thousand low-income children under the age of six years old. Hogares Comunitarios de Bienestar (HCB) provides home-based childcare within a paraprofessional's home. The early childhood care also delivers supplementary nutrition and psychosocial stimulation. Oddly, the study did not find a change in anthropometrics due to nutrition. The suggested reason was due to a lack of protocol on age-appropriate portions of food in the HCB programme. The HCB programme's impact was time dependent. At least fifteen months of participation was necessary for developmental improvement in children from three to six years old. Both cognitive development and socio-emotional skills improved. Of note was that children with the longest exposure to childcare were from more vulnerable households with greater cumulative risk factors (Bernal & Fernández, 2013).

The second child-centered intervention was a government programme called Bolsa Familia in Brazil (Labrecque et al., 2018). The authors, Labrecque et al., describe the impact of the conditional cash transfer (CCT) in the Bolsa Familia (BF) programme on infant length-for-age and weight-for-age in Brazilian infants at 24 months (2018). The programme began in 2004 and provided money to parents if their children received annual health checkups, scheduled vaccinations and maintained 85% school attendance. The programme also had an unconditional component for the poorest families although only the CCT arm of the programme was evaluated in the article. In the researched cohort, Bolsa Familia was associated with a

reduction in length-for-age and weight-for-age z-score for children 24-months old. This cohort was from city hospitals' data and included participants in the beginning of the BF programme, which has increased in participation rates and might limit generalizability of the study.

A sensitivity analysis was performed and suggested only a strong confounder could account for the results. Aside from residual confounding, heterogeneous effects in the CCT programme depending on the design of the programme, how the programme is targeted, when the programme is implemented and the population within which it is implemented could also be a possible influence on the growth reduction observed. For example, municipalities are responsible with targeting populations and some verifying of conditions. The influence of municipalities targeting households most in need or those most motivated to participate would have effects. For the BF programme municipality targeting practices were not able to be located (Labrecque et al, 2018). This article in particular appeared to have excellent references for further research and discussed research related to other CCT programmes. Further scoping to pull out relevant articles was not possible due to author constraints.

A third child-intervention was in the literature, which was not a nationwide intervention. The study evaluated advanced ECD outcomes related to literacy development. The intervention was dialogic reading. Dialogic reading is an interactive way to read a book that engages a child with questions and positive feedback. Through shared story-telling the teacher or parent verbally explores what is happening on the pages of the book with the child. The interactive reading demonstrated improved language skills by assessment and some measures for language production (Valdez-Menchaca & Whitehurst, 1992).

Ten studies found concerned home interventions. Additional national programmes were described and evaluated. Each provided ECIs to improve ECD although the approach was not the same in every case. Programmes were evaluated in four countries, Mexico, Ecuador, Nicaragua and Colombia. In August of 1997, the Mexican government began a conditional cash transfer and nutrition programme, called PROGRESA, Programa de Educación, Salud y Alimentación[5] (Behrman & Hoddinott, 2005). This programme was found to be associated with reduced anemia in 12 month-old or younger children after one year of participation compared with those still waiting for services (Rivera, Sotres-Alvarez, Habicht, Shamah & Villalpando, 2004).

The Mexican government continued to focus on ECD as an investment in human capital for the economic, human and individual capital of the nation. PROGRESA was rebranded as Oportunidades (Rivera, Sotres-Alvarez, Habicht, Shamah & Villalpando, 2004). The programme still invests in human capital through education, health and nutrition by identifying under-privileged communities. Conditional-cash transfers (CCT) in Oportunidades are for children's attendance in school, preventative medical care for the family and parent health talks (Fernald, Gertler & Neufeld, 2009). Similar to the HCB programme in Colombia the most vulnerable showed improvements with extended time in the programme, especially on outcomes related to behavior. The publication of multiple papers on the Mexican government's programme is most likely due to the inclusion of impact evaluation in the programme's mandate (Leroy et al., 2008).

A similar cash-transfer programme in Ecuador was modelled after the PROGRESA

[5] Programme for Education, Health and Nutrition

intervention in Mexico; however, the conditions initially attached to receipt of the money were never enforced. In practice, the transfers were not conditional on health or education choices, and resembled an unconditional-cash-transfer programme instead (Paxson & Schady, 2007). In the study differences in outcome were found between rural and urban children. After low-income mothers in rural areas received monthly allowances, their toddlers showed better performance on the number and complexity of their words. This positive outcome was not observed in the urban children. A further comparison was that these rural children were more likely to have received a vitamin A or iron supplement or have been bought a toy in the previous six months compared to the urban cohort (Fernald & Hidrobo, 2011).

The other national programmes were not cash-transfers but were nutrition programmes with a home visitation element as well. The PAININ programme in Nicaragua included center or community-based childcare with provided lunch and a stimulation curriculum. These locations also offered disadvantaged families counseling on hygiene, reproductive health, violence prevention and nutrition. The programme educators also delivered twice-weekly parenting sessions in the homes of beneficiary families. For children aged six to thirty-six months old the programme reduced anemia over a fourth after a year of family involvement. For children aged thirty to sixty months old, a year and a half of the intervention was associated with improved verbal and numeric memory.

Super, Herrera & Mora (1990) evaluated a similar home visiting and supplementation study in Colombia. The two interventions together reduced severe stunting from birth to age three. After the study ended at three years old, the children's growth was measured three years

later at six years old. The effects of supplementation remained, and the distribution of scores improved for six-year olds, but the interactive effect of home visiting on stunting became only marginally significant.

Assessment and Methodology

Studies evaluated children's nutritional status, cognitive development, psychosocial development, motor development, visual integration and school readiness. Their nutritional status was almost universally evaluated by calculations related to height and weight. The Peabody Picture Vocabulary Test (PPVT, Spanish version, TVIP) was used to evaluate school readiness (Bernal & Fernández, 2013; Figueroa, 2014). The Bayley Scales of Infant Development assessment (BSID) was utilized by multiple studies for cognitive development (Austin et al. 2006; Fernald et al., 2006; Lozoff et al., 1995). The Early Development Instrument (EDI) was used to assess school readiness including physical, cognitive, social and emotional development (Bernal & Fernández, 2013). The Woodcock-Muñoz Batería III, a Spanish version of the Woodstock-Johnson battery, was used to evaluate cognitive and achievement ability (Bernal & Fernández, 2013; Figueroa, 2014).

Evaluations of caregiver and home environments included several tests. The Knowledge of Infant Development Inventory (KIDI) was used to evaluate caregiver knowledge about childcare practices, health and safety, developmental processes and milestones (Bernal & Fernández, 2013). The HOME measurement test for cognitive, social and emotional stimulation in the family environment was often utilized (Austin et al., 2006; Lozoff et al. 1995; Osorio et

al., 2010). Lozoff et al. (1995) determined that the HOME measure was appropriate for a Latin American sample. The study agreed with findings from Mexican-American children that HOME scores are not correlated with BSID mental development scores, which is not the case for the European-American and African-American populations in the USA. The study also detailed that while the HOME assessment was usable for the Costa Rican study population, contextual understanding was needed. Evaluation notes included recognition that 49% of children did not have regular doctor check-ups because vaccinations appointments alone were the norm for infant medical care. The concept of toys for eye-hand coordination was expanded to include non-toy objects like household items. Parental reading time was also contextualized to include older siblings or oral story-telling, which were both common. Although assessments can be statistically reliable and usable, researchers should always be flexible to contextualize procedures and questionnaires to cultural and vernacular norms (Brazelton, Robey & Collier, 1969; Lozoff et al., 1995). In addition to culturally appropriate assessments, the methodology of research is significant when monitoring and evaluating early childhood interventions.

Inconsistencies from previous studies on the impact of ECI can be in part because some studies fail to determine more than the average outcome (Figueroa, 2014). Addressing multiple outcomes through various developmental assessments and comparing cumulative distributions through stochastic dominance methods is more sensitive than an average outcome approach. Procedures at the individual level, like Propensity Score Matching (PSM), is another necessary approach for intervention studies in order to overcome differences between control and intervention samples (Bernal & Fernández, 2013; Figueroa, 2014).

Chapter 5: Discussion

The findings provide details about what ECI are occurring in the Spanish and Portuguese-languages in different countries and what ECD outcomes from interventions have been evaluated. The scope of ECD research on interventions in these language areas of the world seems to be with government programmes with interventions in nutrition and cognitive stimulation. Some of the government programmes also included home visits or education for parents related to health and child rearing.

Although cash-transfer programmes are known and have been studied in Mexico, Guatemala, Brazil, Honduras, Nicaragua, Colombia and Ecuador (Fernald, Gertler & Neufeld, 2009), articles were only found for programmes in five of these nations. No evaluations for the programmes in Guatemala and Honduras were collected through the search strategy. While these programmes are only a small portion of ECI work, the gap in literature confirms that researchers do not have access to a portion of ECI in Latin America. A broader reach is needed to collect information and determine more conclusively the ECD work being done in this area of the world. Further inquiry into ECI in the Spanish and Portuguese-speaking countries requires inclusion of grey literature such as publications from the WHO and UNICEF, federal and municipal documents and the work of foundations and NGOs.

Some economic, social and historical implications for gaps in research must be mentioned in discussing the findings of this scoping study. Contextual perspective for the differences between countries can highlight the need for cultural competency in further research

to implement effective ECI for ECD outcomes. Although taking into account the particulars of each nation is beyond the scope of this thesis, a general overview could be helpful.

Much of the history in the countries researched is based on influences from colonization by European peoples and practices particular to a historic Spain and Portugal. Although direct governance from the Spanish monarchy ended in the early 1800s (Delgado, 1960), current researchers identify a heritage of much social division and economic inequality in various countries of the Americas (Cárcamo, van der Veer, Vermeer & van IJzendoorn, 2014). Although all of the countries have independence from Spain and Portugal, the impact and development of European influence varies. As highlighted in the Background section, the percentage of Indigenous or European-Americans in each county can vary drastically and their differences are not always distinct after centuries of interaction.

The influence of European heritage and its perspective on government, university activities and social norms are a part of the setting of how early childhood development and research occurs. For example, the Spanish did begin schools in the area of Peru, but only some people attended according to Stevenson et al. (1978). Even after independence, education was inaccessible to many people groups in Peru. Historic Spanish influence is not necessarily the cause of current inequity. In ancient Incan times much of the Quechua population in South America were subsistence farmers and unschooled (Stevenson et al., 1978). Any education beyond traditional knowledge and teaching is a change for some Indigenous, like the Quechua, who have been marginalized for generations.

Policy and decision-makers should remember that certain interventions may have been

shown effective, but the context of the Spanish-speaking Americas, or of an Indigenous or rural group, might have barriers to their implementation. These barriers are not only cultural (Staab & Gerhard, 2011) but can also be the high costs associated with the interventions (Kotliarenco, Gómez, Muñoz & Aracena, 2010). A policy analysis of early childhood care and education (ECCE) in Latin America is appropriate to better understand the historic, social and economic barriers for interventions in early childhood. In order to have a broad and nuanced understanding of the policy environment, an analysis should include the actors and organizations as well as the cultural norms and beliefs of stakeholders and interest groups (Howlett, Ramesh and Perl, 2009).

Female employment in Mexico provides an example of this need for policy analysis. As women in Latin America enter the workforce out of desire or necessity, their infants and children will require care. While Mexico has had an increase in women working, the role of mothers as the caregiver at home has not changed. Within politics the balance between encouraging female empowerment and the values of familial care is obvious in political speeches. A desire exists to decrease poverty and bring women into the labor force to boost the national economy, but defamiliarization of childcare is counter to Hispanic culture (Staab & Gerhard, 2011; Vásquez-Garibay, Ávila-Alonso, Contreras-Ramos, Cuellar-Espinosa & Romero-Velarde, 2007). Regardless of the family or country, ECCE is essential. Context will require different types of interventions. For instance, a mother's choice of childcare setting will likely be different due to the family's SES. Conflict between work and family roles hinder the extent of care and education children receive, revealing both the macro and micro-context of early childhood development.

From these studies the informal work of low-income women was associated with low

education and less subsidized care; however, a working mother was shown to not be a detriment to her children, even in low-income families (Engle, 1991; Handal, Lozoff, Breilh & Harlow, 2007). Women in informal work more often leave children in familial care with siblings or grandparents. In contrast, women in formal work leave their children with in-home nannies or at subsidized or private centers (Engle, 1991). Although impoverished settings are associated with risk factors for young children, every child requires a nurturing and stimulating environment with adequate nutrition and stimulating environment to promote learning. This environment is essential regardless of if the primary homecare provider works or not.

As might be expected, maternal education was shown to be related to positive home stimulation in Mexico (Zanabria-Salcedo, Márquez-Caraveo, Pérez-Martínez, Méndez-Ramírez, & Pérez-Barrón, 2006). The association between higher maternal education and improved ECD outcomes is likely due to more than the impact of increased maternal wages and work benefits. Higher income will improve multiple risk factors related to child nutrition and education, but the stimulation at home can also improve from positive changes in the home environment. With higher maternal education and higher family wages, the child is also likely to receive food and education outside the home. Home environment is primary; however, research and interventions related to educational settings are necessary as well. Valdez-Menchaca & Whitehurst (1992) emphasized in their study that even at two years old, the impact of high versus low interaction in a care setting positively influences development. Training and supporting a child's parents, caregivers and early childhood educators are valuable options for improving ECD outcomes.

Three articles included interventions and ECD outcomes for children with delays in

development or an identified disability like hearing loss or cerebral palsy (Abalo et al., 2009; Carmen Fernández, José Buceta, & Carmen Torres, 2001; Giacchini, Tonial, & Mota, 2013). Although they represent less than five percent of the total from the scoping study, the articles demonstrate this world area recognizes limitations and delays can be present during early childhood and is researching interventions to support ECD outcomes regardless of a child's ability. Their publication is encouraging and in agreement with the global response to include disability in early childhood development initiatives. (Olusanya, et al., 2018; Olusanya, Krishnamurthy & Wertlieb, 2018).

Lastly, multiple authors emphasize the need to contextualize early childhood interventions (Austin et al., 2006; Heaton & Forste, 2003; Staab & Gerhard, 2011; Stevenson et al., 1978). Even in studies that found strong association between interventions and ECD outcomes, authors often stated findings would have to be duplicated for the intervention to be generalized. Generalizing findings across different contexts like rural versus urban, low SES versus high SES or Indigenous versus non-Indigenous can result in different intervention outcomes. When interventions are contextualized, their value increases because of increased effectiveness. If the intervention is contextualized, the cost-benefit ratio will improve, creating a returning dividend because of the hierarchical growth pattern of development. Additionally, an understanding of ECI in different demographics can allow for cost savings in care and education because interventions are provided through effective approaches (Stevenson et al., 1978).

Chapter 6: Conclusion

In conclusion, the purpose of this scoping study is to present the key concepts in early childhood research in Spanish and Portuguese-speaking countries. The value of a scoping study has limited ability to recommend effective and context-specific interventions; however, the concepts, risk factors and interventions are more understandable. The sources for further information and the gaps in research are more apparent. Although an appreciable number of articles were found for this scoping study, only a portion of the research and activities related to these countries was found and scoped. With this is mind, regular database searching of journals is recommended. Additionally, a scoping study based on the references of the articles in this scoping study is suggested as well as searching grey literature and speaking with researchers and organizational and governmental bodies about unpublished monitoring and evaluation of ECD. Some articles were found concerning cohorts and associations focused on ECD and intending to publish research for longitudinal studies. The INMA cohort study (INfancia y Medio Ambiente[6]) from Spain is an example (Fernandez et al., 2007). These studies have potential and require sustained interest and funding to be actualized.

The process of implementation and evaluation of ECI and publication of research is in the context of current international relations of deregulation and liberalization of financial markets with an emphasis on a worldwide economy. The quantity and quality of research on early childhood interventions could be due to the pressure of the global market on national governments and private organizations. State governments are pressured to become

6 Childhood and Environment

internationalized adjusting their domestic economy based on global market pressures (Dominelli & Hoogvelt, 1996). The internationalization of the state decreases the independence of higher education because research must be directed toward what is perceived as relevant for the domestic economy in a globally competitive market. A private organization acting in social and community networks can be more independent from the direct political influence of international trade policies and diplomatic relationships; however, even the most territorially connected early childhood development organization is influenced because of the holistic outcomes it has for children (Bozorgmehr, 2010, p. 7). Prioritization and commodification in early childhood education is what is emphasized and valued by organizations and businesses. These pressures influence how and what research occurs. Obviously, the infant and child could easily be lost as the priority of such a scenario where social, political or commerce-based priorities drive research focus. Leaders in early childhood care and education might not be aware of these influences on research priorities and the necessity for communicating and educating political and economic leaders. Knowledge transfer in early childhood research is vital with policy-makers, government leaders and researchers specifically.

For an alternative approach, international NGOs and supraterritorial organizations are well positioned to prioritize research, monitoring and evaluation in ECI at the global level. They can set aside funds themselves for this type of work. Education for All (EFA), led by UNESCO, has done much to increase the availability of education and enrollment of toddlers and children; however, the evaluation of programme quality is absent in EFA. The focus on access and scaling up can bring mixed results on ECD outcomes (UNESCO, 2006; Yoshikawa et al., 2007).

Because those who are implementing the programme are not monitoring or evaluation it, any data collection, research or publications would be at the initiative of the national government where ECCE occurs or the availability and interests of external researchers. Encouraging education and providing access but leaving evaluation of its quality unfunded is a lack of accountability. This lack of accountability is unethical because programme quality related to cultural appropriateness, staff skills, intensity and duration, and features of the physical and social environment, has already been shown to improve health, cognitive and socio-emotional development in early childhood (Britto, Yoshikawa & Boller, 2011).

At present global expectations of equity seem to pressure governments to conform to hegemonic norms and implement interventions and education without having the infrastructure, contextualization or monitoring and evaluation necessary to achieve the desired ECD outcomes. This idea could be the reason few Latin American countries produce research of in-country interventions by in-country researchers. Although in-country researchers are present in databases like Embase (Kotliarenco et al., 2010), the country-based data on ECI is often collected, evaluated and published by an out-of-country researcher with an out-of-country affiliation. Evaluation or publication of ECI in Latin America usually occurs when partnerships occur that are external to the country (Bernal & Fernández, 2013; Figueroa, 2014; Staab & Gerhard, 2011; Super et al., 1990). This is not always the case for European countries (Fernandez et al., 2017).

The particulars of this process from political will to early childhood intervention with ECD research to publication could be explored more fully in countries of the Americas. The value of exploring this process seems high for it could provide better outcomes at the local level,

which is often a struggle for national governments, even those industrialized with high levels of wealth and education. Such exploration could also result in partnerships between families, educators, researchers and policy-makers based on national strengths across the globe (Neuman, 2005).

Regardless of present globalization, the historical context of a nation also influences the focus and publication of research. The impact of colonization and governmental response to it influence what is researched, how the results are shared and what is implemented. How researchers act is influenced by policies and social ideals. The sociopolitical details of each national context could determine the specific factors forming gaps in early childhood research and the scope of early childhood interventions. For instance, studies from Mexico, Colombia, Brazil and Chile dominated the search results. What economic, political or societal reasons resulted in no studies from El Salvador, Panama, Uruguay, Venezuela, Equatorial Guinea, Angola, Cabo Verde and Timor Leste? Venezuela and Uruguay were in two descriptive articles related to risk assessments and education, but no published peer-reviewed studies on ECI were in the eight databases.

While lack of resources is surely relevant, the allocation of resources away from the evaluation and monitoring of ECI is likely. Perhaps more likely is the absence of relationships with out-of-country researchers and lower interest in research with people and institutions in these countries. The impact of dialect could also be related to the absence of some countries. The absence of linguistic solidarity was noticed between countries while reading articles, especially between Latin American and European research in Spanish. Linguistic differences in dialect can

result in a difficult exchange for collaboration (Duszak, 2006).

Many NGOs, foundations and private groups research, publish and collect materials concerning early childhood development and interventions. Early childhood development interest groups and education stakeholders have societies and supports which could access applicable research and resources for mutually beneficial knowledge transfer. Governments and supraterritorial organizations can facilitate the dissemination and networking of these groups and individuals. Additionally, ECD research from organizations like UNICEF, UNESCO and WHO could be integrated with and evaluated through glocal associates and their affiliations for contextualization in different countries and cultures. For peer-reviewed literature across multiple countries or language groups, increasing the number of languages in which research abstracts are translated is of immense value to provide an increase in access for comparative research and knowledge transfer. Languages to include could follow UN protocol and include English, Chinese, Spanish, French, Arabic and Russian. For example and of interest for knowledge transfer in ECCE is an in-process systematic review the World Bank registered with the Cochrane Collaboration to improve access *and quality* of ECCE interventions in low and middle-income countries (Snilstveit et al., 2014).

For interventions concerning regional populations in the Americas, providing English with Spanish or Portuguese in the abstract allows for knowledge to be available to significantly more people worldwide. Although the English, Spanish or Portuguese language are spoken de facto in a majority of the countries in the Americas, Haitian Creole, French and Dutch-speaking countries are present. Because of the geographical proximity and social and political interactions

with these countries in the American neighborhood, a scoping study of them and their connections with the majority English, Spanish, and Portuguese-speaking countries would be valuable. Additionally, research in the Indigenous communities of the Americas would provide an understanding about the value and limitations of using European languages to implement early childhood interventions.

Additionally, the significance of de facto English-speaking countries for knowledge transfer in the Americas and globally would be valuable. While reviews and evaluation of organizational, regional or national early childhood interventions (ECI) in English-speaking countries has occurred and is present in peer-reviewed literature, the author is not aware of a scoping study to describe the landscape of ECI in these English-speaking communities. The completion of this scoping study thesis on ECI for Spanish and Portuguese-speaking communities hopefully sets an example and provides the opportunity for a similar scoping study to be completed on ECI in English-speaking countries worldwide. More research is needed to describe the landscape of and gaps in ECD research.

In conclusion, a reference must be made to an optional stage in some scoping studies that was not included in this thesis: consultation. Further investigation into the scope and gaps in research on ECI would greatly benefit from contributions by psychologists, educators, researchers, early childhood professionals, parents and children involved in early interventions. Scoping studies occasionally include their input through a consultation stage. Arksey & O'Malley (2005) suggest that practitioners and lay people involved in the topic of a scoping study can identify further references and provide additional insight beyond standard outcome

measures that are presented in the research. By presenting the material of a scoping study to stakeholders and interest groups, the findings can be more nuanced and better informed (Newbronner & Hare, 2002; Oliver, 2001). This stage can also be utilized as a knowledge transfer mechanism (Levac et al., 2010). This optional stage was not feasible in the process of this thesis but would be valuable to confirm, critique and contextualize the scoping study findings to better direct practice, research and policy on early childhood research. The initial hypothesis was supported by this scoping study. Insufficient studies on ECI are present for this area of the world to complete a systematic review; however, much more activity than anticipated was found. Based on the ECI studies found, several countries will likely continue to be represented and contribute to ECD research: Mexico, Guatemala, Colombia, Brazil, Chile, Spain and Portugal. Research evidence strongly supports the influence of quality nutrition, cognitive stimulation and nurturing care on the extent that a child reaches full developmental capability (Young, 2002). Early childhood interventions improve care and education provides a sure footing for children as they develop and has value as the proper stewardship of human capital for the support of local communities, national infrastructure and global interactions.

The future is built on the achievement of developmental milestones by today's children. Reaching developmental goals is the foundation for their subsequent educational and vocational attainment as well as the basis for the human resources and economic development of the world (Olusanya, 2011). Remembering early childhood development occurs in a macro and micro-context, child-centered interventions alone are not sufficient. The well-being of family, community and country all support the development of children.

REFERENCES

Abalo, M. C., Vázquez, J. A., López, G., González, M., Mola, M. & Castillo, M. (2009). A 25-Year Review of Cuba's Screening Program for Early Detection of Hearing Loss. *MEDICC Review, 11*(1), 21–8.

About Social Determinants of Health. (n.d.) Retrieved 7 February 2019, from https://www.who.int/social_determinants/sdh_definition/en/

About WHO: Constitution of WHO Principles. (n.d.) Retrieved 9 February 2019, from https://www.who.int/about/mission/en/

Abrami, P. C., Wade, A., Bernard, R. M., Salvin, R., Ungerleider, C. & Lipsey, M. W. (2009). *Issues in the conduct and dissemination of rapid reviews of evidence.* Abstract for 2009 International Campbell Collaboration (C2) Colloquium. Oslo, Norway. Retrieved from http://www.campbellcollaboration.org/artman2/uploads/1/Abrami_Issues_in_the_conduct_and_dissemination.pdf

Arksey, H. & O'Malley, L. (2005). Scoping Studies: Towards a Methodological Framework. *International Journal of Social Research Methodology, 8* (1), 19-32.

Austin, A. M. B., Blevins-Knabe, B. de Aquino, C. N., de Burró, E. U., Park, K-E. Bayley, B. ... Thomas-George, A. (2006). Parent Socialization, Family Economic Well-being, and Toddlers' Cognitive Development in Rural Paraguay. *Journal of Research in Childhood Education, 20*(4), 255-74.

Bennett, G. (2011). *The knowledge translation toolkit: Bridging the know-do gap: A resource for researchers.* G. Bennett & N. Jessani. (Eds.). Jointly published Ottawa, ON: International Development Research Centre & New Delhi, India: SAGE Publications India Pvt. Ltd., Thousand Oaks, CA: SAGE Publications Inc., London, UK: SAGE Publications Ltd. & Singapore: SAGE Publications Asia-Pacific Pte. Ltd.

Bernal, R. & Fernández, C. (2013). Subsidized childcare and child development in Colombia: Effects of Hogares Comunitarios de Bienestar as a function of timing and length of exposure. *Social Science & Medicine, 97*, 241-9.

Bornstein, M. & Putnick, D. (2012). Cognitive and Socioemotional Caregiving in Developing Countries. *Child Development, 83*(1), 46-61.

Bozorgmehr, K. (2010). Rethinking the 'global' in global health: a dialectic approach. *Globalization and Health, 6*(19).

Brazelton, T. B., Robey, J. S. & Collier, G. A. (1969). Infant development in the Zinacanteco indians of southern Mexico. *Pediatrics, 44*(2), 274-90.

Britto, P. R., Yoshikawa, H. & Boller, K. (2011). Quality of Early Childhood Development Programs in Global Contexts: Rationale for Investment, Conceptual Framework and Implications for Equity. Social Policy Report. *Society for Research in Child Development, 25(2)*.

Brown, T.M., Cueto, M. & Fee, E. (2006). The World Health Organization and the Transition from "International" to "Global" Public Health. *American Journal of Public Health, 96*(1), 62-72.

Bryant, J. H. (2014). public health. *Encyclopaedia Britannica,* Retrieved from http://www.britannica.com/EBchecked/topic/482384/public-health

Cárcamo, R.A., van der Veer, R., Vermeer, H.J., & van IJzendoorn, M.H. (2014). From foundling homes to day care: a historical review of childcare in Chile. *Cadernos de Saúde Pública*, *30*(3), 461-472.

Carmen Fernández, J., José Buceta, M., & Carmen Torres, M. (2001). Early intervention for a child with severe myoclonic epilepsy of infancy. *The British Journal of Development Disabilities, 47*(92), 15-20

Castro, A. A., Clark, O. A. C. & Atallah, A. N. (1997). Optimal search strategy for clinical trials in the Latin American and Caribbean Health Science Literature Database (LILACS). *São Paulo Medical Journal, 115*(3), 1423-1426.

Campbell, S.B., Denham, S.A., Howarth, G.Z., Jones, S.M., Vick Whittaker, J., Williford, A.P., Willoughby, M.T., Yudron, M., Darling-Churchill, K. (2016). Commentary on the review of measures of early childhood social and emotional development: Conceptualization, critique, and recommendations. *Journal of Applied Developmental Psychology, 45*(Complete), 19-41.

Castro, F. de, Allen-Leigh, B., Katz, G., Salvador-Carulla, L., & Lazcano-Ponce, E. (2013). Indicadores de bienestar y desarrollo infantil en México. *Salud Pública de México, 55* (Suplemento 2), S267-S275.

Chaves de Almeida, I. (2004). Intervenção precoce: Focada na criança ou centrada na família e na comunidade? Análise Psicológica (23)1, 65-72.

Clark, O. A. C. & Castro, A. A. (2002). Searching the Literatura Latino Americana e do Caribe em Ciências da Saúde (LILACS) database improves systematic reviews. *International Journal of Epidemiology, 31*(1), 112-4.

Daudt, H. M., Van Mossel, C. & Scott, S. J. (2013). Enhancing the scoping study methodology: a large, inter-professional team's experience with Arksey and O'Malley's framework.

BMC medical research methodology, *13*(1), 48.

Davis, K., Drey, N. & Gould, D. (2009). What are scoping studies? A review of the nursing literature. *International Journal of Nursing Studies, 49*, 1386-400.

DeCS - Health Sciences Descriptors. (2019) Retrieved 10 September 2019, from http://decs.bvsalud.org/I/decsweb2019.htm

Delgado, J. (1960). *La independencia hispanoamericana* (pg. 113). Madrid, Spain: Nuevo Mundo.

Duszak, A. (2006). Looking Globally, Seeing Locally: Exploring some myths of globalisation in academia. *Revista Canaria de Estudios Ingleses, 53*, 35-45.

Eckhart, C. L., Rivera, J. Adair, L. S. & Martorell, R. (2001). Full breast-feeding for at least four months has differential effects on growth before and after six months of age among children in a Mexican community. *The Journal of Nutrition, 131*(9), 2304-9.

Engle, P. L. (1991). Maternal Work and Child-care Strategies in Peri-Urban Guatemala: Nutritional Effects. *Child Development, 62*, 954-65.

Engle, P. L., Fernald, L. C. H., Alderman, H., Behrman, J., O'Gara, C., Yousafzai, A., . . . Iltus, S. (2011). Child development 2: Strategies for reducing inequalities and improving developmental outcomes for young children in low-income and middle-income countries. *Lancet, 378* (9799), 1339-53.

Evans, R. & Stoddart, G. (1990). Producing health, consuming health care. *Social Science & Medicine, 31*(12), 1347-63.

Fernald, L. C. H, Gertler, P. J. & Neufeld, L. M. (2009). 10-year effect of Oportunidades, Mexico's conditional cash transfer programme, on child growth, cognition, language, and behavior: a longitudinal follow-up study. *Lancet, 374*(9706), 1997-2005.

Fernald, L. C. H. & Hidrobo, M. (2011). Effect of Ecuador's cash transfer program (Bono de Desarrollo Humano) on child development in infants and toddlers: A randomized effectiveness trial. *Social Science & Medicine, 72*(9), 1437-46.

Fernald, L. C. H., Neufeld, L. M., Barton, L. R., Schnaas, L., Rivera, J., & Gertler, P. J. (2006). Parallel deficits in linear growth and mental development in low-income Mexican infants in the second year of life. *Public Health Nutrition, 9*(2), 178-86.

Fernandez, M.F., Sunyer, J., … Olea, N. (2007). The Spanish Environment and Childhood Research Network (INMA study). *Int. J. Hyg. Environ.-Health, 210*, 491-3.

Figueroa, J. L. (2014). Distributional effects of Oportunidades on early child development. *Social Science & Medicine, 113*, 42-9.

Fried L.P., Bentley M.E., Buekens P., Burke D.S., Frenk J.J., Klag M.J., & Spencer H.C. (2010). Global health is public health. *Lancet, 375*, 535-537.

Gakidou, E., Cowling, K., Lozano, R. & Murray, C. (2010). Increased educational attainment and its effect on child mortality in 175 countries between 1970 and 2009: a systematic analysis. *Lancet, 376*(9745), 959–74.

Giacchini, V., Tonial, A. & Mota, H. B. (2013). Aspectos de linguagem e motricidade oral observados em criança atendidas em um setor de estimulação precoce (Aspects of language and oral motor observed in children treated at an early stimulation sector). *Distúrbios da Comunicação. 25*(2).

Grantham-McGregor, S., Cheung, Y. B., Cueto, S., Glewwe, P., Richter, L., Strupp, B., . . . Walker, S. (2007). Developmental potential in the first 5 years for children in developing countries. *Lancet, 369*(9555), 60-70.

Green, L.W., Richard, L. & Potvin, L. (1996). Ecological foundations of health promotion. *Amer. J. Health Promot., 10*(4), 270–81.

Green L.W., Ottoson, J.M. (1994). Community ecology, organization, and health. (7th ed.), *Community Health* (pp.31-61). St. Louis, USA: Times Mirror-Mosby College.

Guralnick, M. (2005). Early intervention for children with intellectual disabilities: current knowledge and future prospects. *J. Appl. Res. Intellect. Disabil.* 18, 313–24.

Handal, A. J., Lozoff, B., Breilh, J. & Harlow, S. D. (2007). Sociodemographic and nutritional correlates of neurobehavioral development: a study of young children in a rural region of

Ecuador. *Revista Panamericana de Salud Pública, 21*(5), 292-300.

Howlett, M., Ramesh, M. & Perl, A. (2009). *Studying Public Policy: Policy Cycles and Policy Subsystems* (3rd ed.). Toronto, Canada: Oxford University Press.

Institute of Medicine. (1997). *America's vital interest in global health.* Washington, DC: National Academy Press.

International Work Group for Indigenous Affairs (IWGIA). (n.d.). *Update 2011 - Chile.* Retrieved from http://www.iwgia.org/regions/latin-america/chile/858-update-2011-chile

Koplan, J.P., Bond, T.C., Merson, M.H., Reddy, K.S., Rodriguez, M.H., Sewankambo, N.K. & Wasserheit, J.N. (2009). Towards a common definition of global health. *Lancet, 373* 1993-1995.

Kotliarenco, M.A., Gómez, E., Muñoz, M.M. & Aracena, M. (2010). Características, efectividad y desafíos de la visita domiciliaria en programas de intervención temprana. *Revista de Salud Pública, 12* (2), 184-96.

Kottke, T.E., Stiefel, M. & Pronk N.P. (2016). "Well-Being in All Policies": Promoting Cross-Sectoral Collaboration to Improve People's Lives. *Prevention of Chronic Disease, 13* (April) E52.

Lake, A. (2011). Early childhood development - global action is overdue. *The Lancet, 378* (9799), 1277-8.

Labrecque, J.A, Kaufman, J.S., Balzer, L.B., Maclehose, R.F., Strumpf, E.C., Matijasevich, A., . . . Barros, A.J.D. (2018). Effect of a conditional cash transfer program on length-for-age and weight-for-age in Brazilian infants at 24 months using doubly-robust, targeted estimation. *Social Science & Medicine, 211,* 9-15.

Leroy, J. L., Garcia-Guerra, A., Garcia, R., Dominguez, C., Rivera, J. & Neufeld, L. M. (2008).

The Oportunidades program increases the linear growth of children enrolled at young ages in urban Mexico. *The Journal of Nutrition, 138*(4), 793-98.

Levac, D., Colquhoun, H. & O'Brien, K. K. (2010). Scoping studies: advancing the methodology. *Implementation Science, 5* (69).

Lavis, J. N., Robertson, D., Woodside, J. M., McLeod, C. B., & Abelson, J. (2003). How can research organizations more effectively transfer research knowledge to decision makers? *The Milbank Quarterly, 81*(2), 221-48.

Lozoff, B., Park, A. M., Radan, A. E. & Wolf, A. W. (1995). Using the HOME Inventory with infants in Costa Rica. *International Journal of Behavioral Development, 18*(2), 277-95.

Macfarlane S.B., Jacobs M. & Kaaya E.E. (2008). In the Name of Global Health: Trends in Academic Institutions. *Journal of Public Health Policy, 29,* 383-401.

Maggi, S., Irwin, L .J., Siddiqi, A. & Hertzman, C. (2010). The social determinants of early childhood development: An overview. *Journal of Paediatrics and Child Health, 46*, 627-35.

Manríquez, J. J. (2009). A highly sensitive search strategy for clinical trials in Literatura Latino Americana e do Caribe em Ciências da Saúde (LILACS) was developed. *Journal of Clinical Epidemiology, 61*(4), 407-11.

Manríquez, J. J. (2009). Searching the LILACS Database Could Improve Systematic Reviews in Dermatology. *Archives of Dermatology, 145*(8), 947-68.

Mays, N., Roberts, E., & Popay, J. (2001). Synthesising research evidence. In N. Fulop, P. Allen, A. Clarke, & N. Black (Eds.), *Studying the organisation and delivery of health services: Research methods* (pp. 118-220). London, UK: Routledge.

Merriam-Webster (1999). Langenscheidt's Pocket Dictionary. *"develop", "-ment".* New York, USA: Langenscheidt Publishers, Inc. New York.

Neuman, M. J. (2005). Governance of early childhood education and care: recent developments in OECD countries. *Early Years, 25*(2), 129-41.

Newbronner, E. & Hare, P. (2002). *Services to support carers of people with mental health problems: Consultation report.* York, UK: Social Policy Research Unit, University of York.

Nordtveit, B. H. (2008). Poverty Alleviation and integrated service delivery: Literacy, early child development and health. *International Journal of Educational Development, 28*, 405-18.

Oliver, S. (2001). Marking research more useful: Integrating different perspectives and different methods. In S. Oliver & G. Peersman (Eds.), *Using research for effective health promotion.* Buckingham, UK: Open University Press.

Olusanya, B. O. (2011). Priorities for Early Childhood Development in Low-Income Countries. *Journal of Developmental & Behavioral Pediatrics, 32*(6), 476-81.

Olusanya, B. O., Davis, A. C., Wertlieb, D., Boo, N. Y., Nair, M. K. C., Halpern, R. . . . Kassebaum, N. J. (2018). Developmental disabilities among children younger than 5 years in 195 countries and territories, 1990-2016: a systematic analysis for the Global Burden of Disease Study 2016. *Lancet Glob Health, 6,* e1100-21.

Olusanya, B. O., Krishnamurthy, V. & Wertlieb, D. (2018). RE: Global Initiatives for Early Childhood Development Should Be Disability Inclusive. *Pediatrics, 141.*

Osorio, E., Torres-Sánchez, L., Hernández, M. C., López-Carrillo, L. & Schnaas, L. Estimulación en el hogar y desarrollo motor en niños mexicanos de 36 meses. *Salud Pública de México, 52*, 14-22.

The Ottawa Charter for Health Promotion. (n.d.) Retrieved 21 February 2019, from

https://www.who.int/healthpromotion/conferences/previous/ottawa/en/

Pan American Health Organization (PAHO). (2013). *Health Determinants and Inequalities.* Retrieved from http://www.paho.org/saludenlasamericas/index.php?option=com_content&view=article&id=58%3Ahealth-determinants-and-inequalities&catid=24%3Achapters&Itemid=55&lang=en

Paxson, C. & Schady, N. (2007). *Does Money Matter? The Effect of Cash Transfers on Child Health and Development in Rural Ecuador.* Washington, D.C., USA: World Bank.

Psacharopoulos, G. & Patrinos, H. (1994). *Indigenous People and Poverty in Latin America: An Empirical Analysis.* Washington, D.C., USA: World Bank.

Public Health, Environmental and Social Determinants of Health. (n.d.) Retrieved 7 February 2019, from https://www.who.int/phe/en/.

Robertson, R. (1995). Glocalization: time-space and homogeneity-heterogeneity. In M. Featherstone, S. Lash & R. Robertson (Eds.), *Theory, Culture & Society: Global modernities* (pp. 25-44). London: SAGE Publications Ltd.

Roudometof, V. (2015) The Glocal and Global Studies, *Globalizations, 12(5)*, 774-87.

Savoie, I., Helmer, D., Green, C. J., Kazanjian, A. (2003). Beyond Medline: reducing bias through extended systematic review search. *International Journal of Technology Assessment in Health Care*, *19*(1), 168-78.

Scholte, Jan Aart. (2005). *Globalization: A Critical Introduction.* New York, USA: Palgrave Macmillan.

Schmeer, K. (1999). Guidelines for conducting a stakeholder analysis [PDF file]. Bethesda, MD: Partners for Health Reform, Abt Associates Inc. Retrieved from http://www.phrplus.org/Pubs/hts3.pdf

Sen, A. (1999). *Development as freedom.* New York, USA: Anchor Books.

Serpa Pimental, J. (2004). Avaliação de programas de intervenção precoce. *Analise psicologica, 22(1)*, 43-54.

Shonkoff, J. & Phillips, D. (Eds.). (2000). *From Neurons to Neighborhoods: The Science of Early Childhood Development.* Washington D.C., USA: National Academy Press.

Snilstveit, B., Gallagher, E., Phillips, D., Vojtkova, M., Eyers, J., Skaldiou, D., . . . Davies, P. (2014). Education Interventions for Improving the Access to, and Quality of, Education in Low and Middle Income Countries: A Systematic Review. *The Campbell Collaboration, Title Registration Approval 1 July, 2014.*

Solís-Cámara, R.P., Fox, R.A., & Nicholson, B.C. (2000). Parenting Young Children: Comparison of a Psychoeducational Program in Mexico and the United States. *Early Child Development and Care. 163,* 115-124.

Staab, S. & Gerhard, R. (2011). Putting Two and Two Together? Early Childhood Education, Mothers' Employment and Care Service Expansion in Chile and Mexico. *Development and Change, 42*(4), 1079-107.

Stevenson, H. W., Parker, T., Wilkinson, A., Bonnevaux, B., Gonzalez, M. & Greenfield, P. M. (1978). Schooling, Environment, and Cognitive Development: A Cross-Cultural Study. *Monographs of the Society for Research in Child Development, 43*(3), 1-92.

Suarez-Almazor, M. E., Belseck, E., Homik, J., Dorgan, M., Ramos-Remus, C. (2000). Identifying Clinical Trials in the Medical Literature with Electronic Databases: MEDLINE Alone Is Not Enough. *Controlled Clinical Trials, 21*, 476-87.

Super, C. M., Herrera, M. G. & Mora, H. O. (1990). Long-term Effects of Food Supplementation and Psychosocial Intervention on the Physical Growth of Colombian Infants at Risk of

Malnutrition. *Child Development, 61*(1), 29-49.

Toma, W., Kearns, A., Potter, J., Raifman, S. & Castro, M. (2014). Paediatrics and Child Health. Conference: *91st Annual Conference of the Canadian Paediatric Society 19(6)*. Montreal, QC: Conference Publication.

UNESCO. (2006). *Education for all: Strong foundations early childhood care and education.* EFA Global Monitoring Report 2007. Paris, France: Author.

UNICEF. (n.d.) Retrieved 9 February 2019, from https://www.unicef.org/pon97/author7.htm

United Nations Development Programme. (2009). *Millennium Development Goals (MDGs).* Retrieved from http://www.undp.org/content/undp/en/home/mdgoverview.html

United Nations–HABITAT, United Nations Human Settlements Programme. (2010). "Cities for All: Bridging the Urban Divide" *State of the World's Cities 2010/2011.* London, UK: Earthscan.

United States - Central Intelligence Agency (2018). *The CIA world factbook 2018-2019.* New York, NY: Skyhorse Publishing.

Vaivada T., Gaffey, M. F., & Bhutta, Z. A. (2017). Promoting Early Child Development with Interventions in Health and Nutrition: A Systematic Review. *Pediatrics, 140*(2), .

Valdez-Menchaca, M. C. & Whitehurst, G. J. (1992). Accelerating Language Development through Picture Book Reading: A Systematic Extension to Mexican Day Care. *Developmental Psychology, 28*(6), 1106-14.

Vasconcelos, T. (2013). A participatory process of developing a recommendation for the government about the education of children from birth to three years: The case of portugal. *International Journal of Early Years Education, 21*(2-3), 125-40.

Vásquez-Garibay, E. M., Ávila-Alonso, E. N., Contreras-Ramos, T., Cuellar-Espinosa, L. A. & Romero-Velarde, E. (2007). Factores de riesgo asociados al estado nutricio en lactantes que son atendidos en guarderías. *Boletín Médico del Hospital Infantil de México, 64*(1), 18-28.

Vegas, E. & Santibáñez, L. (2010). *The Promise of Early Childhood Development in Latin America and the Caribbean.* Washington D.C., USA: The World Bank.

Walker, S. P., Wachs, T. D., Grantham-McGregor, S., Black, M. M., Nelson, C. A., Huffman, S. L., . . . Richter, L. (2011). Child development 1: Inequality in early childhood: Risk and protective factors for early child development. *The Lancet, 378*(9799), 1325-38.

Webster-Stratton, C. & Taylor, T. (2001). Nipping early risk factors in the bud: Preventing substance abuse, delinquency, and violence in adolescence through interventions targeted at young children. *Prevention Science, 2*, 165–192.

WHO. (2014). *Early Child Development.* Retrieved from http://www.who.int/maternal_child_adolescent/topics/child/development/en/

Yoshikawa, H. (1995). Long-term effects of early childhood programs on social outcomes and delinquency. *Future Child, 5*, 51–75.

Yoshikawa, H., McCartney, K., Myers, R., Bub, K., Lugo-Gil, J., Knaul, F., & Ramos, M. (2007). *Preschool education in Mexico: Expansion, quality improvement, and curricular reform*. Florence, Italy: United Nations Children's Fund.

Young, M. (2002). *From Early Child Development to Human Development.* Washington, DC: The World Bank.

Zanabria-Salcedo, M., Márquez-Caraveo, M. E., Pérez-Martínez, J. A., Méndez-Ramírez, I. & Pérez-Barrón, V. (2006). Caracterización del ambiente en el hogar de niños de la Ciudad de México y zona metropolitana durante el primer año de vida. *Plasticidad y Restauración Neurológica, 5*(1), 30-40.

APPENDIX A - Embase, Medline, Global Health and PsycInfo Search Strategy

Edit Search History

Cancel Run Search

#	Searches	Annotations	Actions
1	(((child adj1 (development or growth or height)) or development) adj1 (infant or toddler or postnatal or language or early childhood)).mp.		
2	((care adj1 (perinatal or postnatal or infant or child or maternal* or paternal* or provider* or age specific or day or center*)) or (child adj (rearing or rearing practice* or specialist* or self care or center or intervention or health)) or (parent adj (style* or child or relation)) or nursery or kindergarten or (school adj readiness) or (early adj intervention*) or (education* adj1 (early or primary or childhood or prenatal or childbirth or health or program* or developmental)) or developmental program*).mp.		
3	((America adj (Latin or Central or South)) or "South and Central America" or Spain or Portugal or Equatorial Guinea or Brazil or Angola or Mozambique or Cape Verde or Cabo Verde or Guinea-Bissau or "Sao Tome and Principe" or East Timor or Timor Leste or Caribbean or Cuba or Dominican Republic or Puerto Rico or Mexico or Guatemala or Honduras or El Salvador or Costa Rica or Nicaragua or Ecuador or Uruguay or Paraguay or Venezuela).mp.		
4	1 and 2 and 3		

Cancel Run Search

APPENDIX B - CINAHL Search Strategy

Search Terms

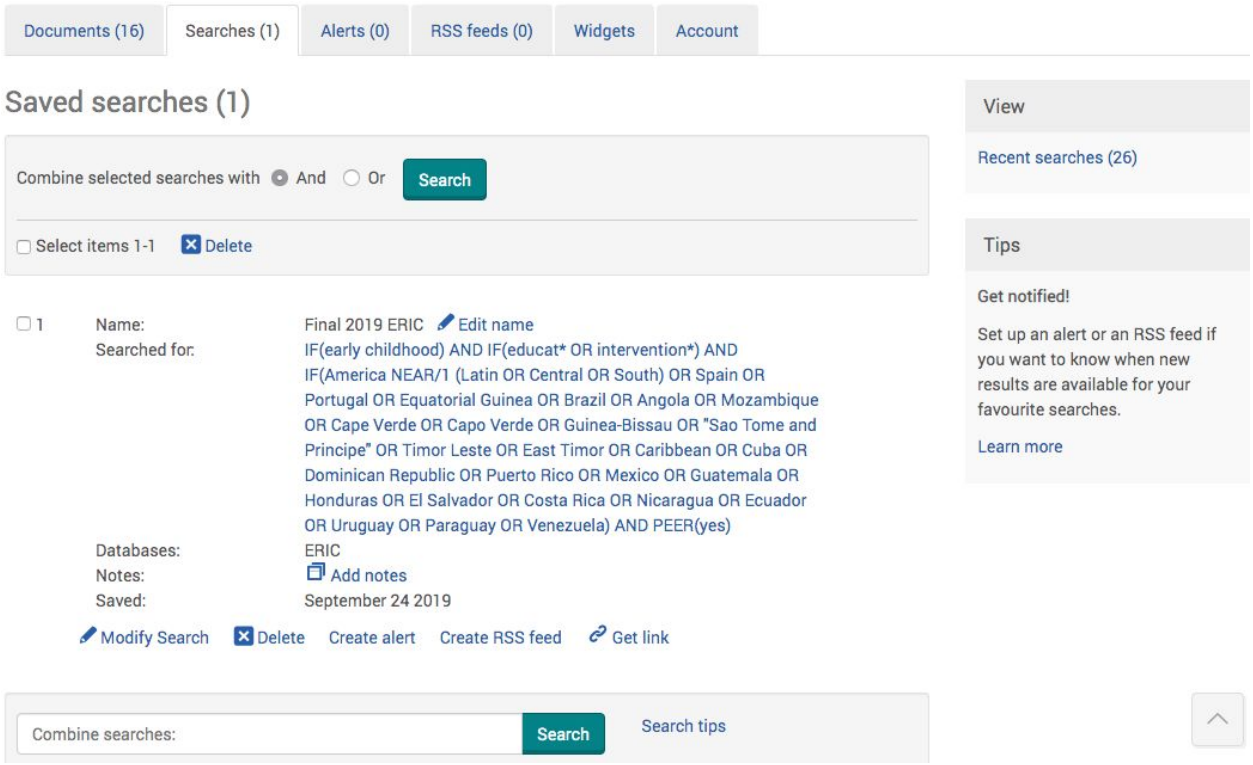
S1 AND S2 AND S3

View Dependent Searches

Dependent Searches Close

S1	TX (child N1 (development or growth or height)) or TX (development N1 (infant or toddler or postnatal or language or early childhood)) or MW (development N1 (infant or toddler or postnatal or language or early childhood))	Search modes - Boolean/Phrase
S2	(MW "Early Childhood Intervention*") or TX ((care N1 (perinatal or postnatal or infant or child or maternal* or paternal* or age specific or day or center* or provider*)) or (child N1 (rearing or specialist* or self care or center or intervention or health)) or (parent adj (style* or child or relation)) or nursery or kindergarten or (school N1 readiness) or (early N2 intervention) or (education* N1 (early or primary or childhood or prenatal or childbirth or health or program* or developmental)) or (developmental program*))	Search modes - Boolean/Phrase
S3	MW (Spain or Equatorial Guinea or Brazil or Portugal or Angola or Mozambique or Cape Verde or Guinea-Bissau or (Sao Tome and Principe) or East Timor or Caribbean or Cuba or Dominican Republic or Puerto Rico or Latin America or Mexico or Central America or Guatemala or Honduras or El Salvador or Costa Rica or Nicaragua or Panama or South America or Colombia or Peru or Bolivia or Chile or Argentina or Ecuador or Uruguay or Paraguay or Venezuela)	Search modes - Boolean/Phrase

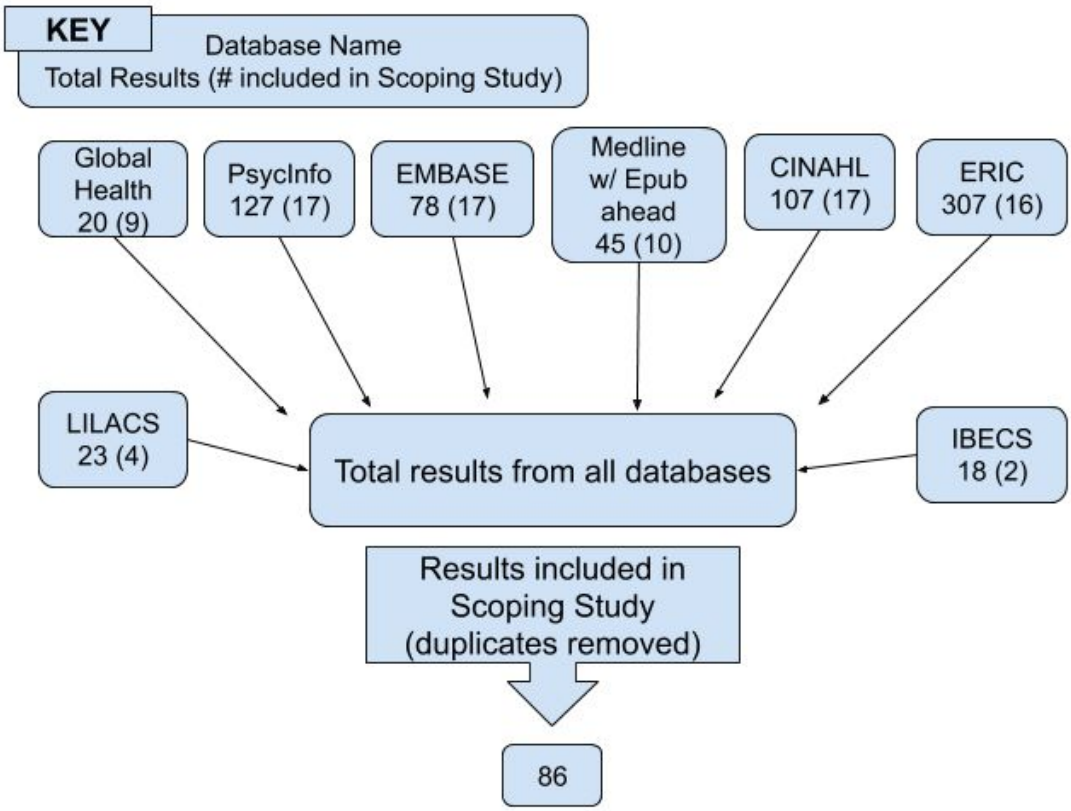
APPENDIX C - ERIC Search Strategy



APPENDIX D - LILACS Search Strategy

APPENDIX E - IBECS Search Strategy

APPENDIX F - Database Retrieval Flowchart



VITA

Brandon J. Chapman
15678 South Blackfeather Street
Olathe, Kansas U.S.A.
brandonjameschapman@gmail.com

EDUCATION

MSc (Master of Science in Global Health)
McMaster University, 2014, Outstanding Achievement Award
BA (Bachelors in Art degrees in Chemistry and Biology)
MidAmerica Nazarene University, 2008, Magna Cum Laude

SELECTED HIGHLIGHTS

- Johnson County Community College, Adult Education English Instructor, 2013
- Native English Teacher, Cheonan Office of Education, South Korea, 2012-2010
- Teaching English Certificate (TESOL), Korea Nazarene University, 2010
- Research Assistant, Kansas University, Kidney Institute, 2009-2004
- Emergency Tech Certificate (EMT), Johnson County Community College, 2007
- National Latin Award, Magna Cum Laude, 2004

LANGUAGE COMPETENCIES

- Spanish: Intermediate level of fluency and literate
- Portuguese: Conversational and reading literate
- Korean: Functional speaker and reading literate