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Moving toward evidence-based practice:
a research utilization capacity building program

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Doctoral Project

MOVING TOWARD EVIDENCE-BASED PRACTICE:

A RESEARCH UTILIZATION CAPACITY BUILDING PROGRAM

by

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DEDICATION

I would like to dedicate this project to all the children and their families we work with, as

occupational therapy practitioners. I hope that we may always strive to provide the very

best service to help them feel healthy, successful and happy.

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ABSTRACT

Occupational therapy practitioners (OTPs) are reporting low levels of research application in everyday practice, causing a low frequency of evidence-based practice (EBP) implementation (Krueger et al., 2020; Myers, 2019a). A review of the literature demonstrates that individual level factors, such as lack of knowledge, skill, time, and resources for research use, coupled with organizational factors, such as low priority, support, and expectation for EBP, act as barriers to EBP (Wang et al., 2019). This doctoral project aims to build the capacity for research use at both the practitioner and the organization levels through an evidence-based multifaceted intervention program. It will impact the knowledge and skill for understanding and applying research evidence in practice and the frequency of research use in daily practice among school-based occupational therapy practitioners (Sb-OTPs), as well as the organization's resources, priorities, and environment to support EBP. A mixed-methods design will be used, with a convenience sample of nineteen Sb-OTPs employed at a therapy agency that provides services through contract positions to local school districts. The program consists of four main components of education, provision of resources, working in groups, and

organizational supports. The Knowledge-To-Action (KTA) framework (Graham et al., 2009) provides a context-focused iterative process to the program design, from problem identification to sustainability. Continual involvement of all stakeholders, assessment of barriers to tailor the intervention, and adaptation of the knowledge for use in the practice context are KTA-based core program features. The education component is informed by Social Cognitive Theory (SCT) (Bandura, 1986), brain-based learning strategies (Willis, 2006; Yee & Boyd, 2018), and literature supporting blended learning and digital health education formats (Brown et al., 2020; Hew & Lo, 2018; Liu et al., 2016). The program description, implementation, research evaluation plan, and program funding and dissemination are described in detail.

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LIST OF ABBREVIATIONS

AOTA .... American Occupational Therapy Association

ARS..Ascend Rehab Services, Inc

CIHR.. Canadian Institutes of Health Research

CoP.. Community of Practice

EBP ....Evidence-based practice

ERIC ....Expert Recommendations for Implementing Change

ESSA.. Every Student Succeeds Act

IDEIA..Individuals with Disabilities Education Improvement Act

IS .... Implementation science

KT .... Knowledge translation

KTA ....Knowledge-to-Action process framework

ORC ....Organization Readiness for Change

OTP..Occupational therapy practitioner

Sb-OTP ....School-based occupational therapy practitioner

SCT .... Social Cognitive Theory

TPB .... Theory of Planned Behavior

CHAPTER ONE – Introduction

Evidence-based practice (EBP) in rehabilitation stems from evidence-based

medicine which is defined as the "conscientious, explicit and judicious use of current best

evidence of making decisions about the care of individual patients" (Sackett et al., 1996,

p. 71). Later, patient values and preferences were included in the definition as an equally

important component (Sackett et al., 2000). In occupational therapy, EBP has thus been

accepted as an integration of best research evidence, practitioner's clinical expertise and

clients' values and preferences, as it aligns well with the profession's core focus on

client-related occupations (Brown, 2017; Taylor et al., 2017). This implies that

occupational therapy practitioners are called to use their clinical reasoning skills in

applying best available scientific evidence in a clinical situation, while taking into

account the client's interests and values (Brown, 2017; Taylor et al., 2017). All three

sources of evidence are important for EBP to occur; the transfer of research knowledge

into practice needs the clinical judgment of the practitioner that comes from training and

work experience, and the unique context of the client's values and goals (Law & Baum,

1998).

Importance of EBP in occupational therapy

It is an occupational therapy practitioner's professional responsibility to use best

practice which ensures that the most effective and appropriate interventions are being

delivered to clients thus increasing the likelihood of best possible client outcomes, in a

cost-effective manner (Law & Baum, 1998; Taylor et al., 2017). Thus, while EBP is vital

for better client outcomes, it also fulfills client choice, a professional obligation, and

accountability standards. Highlighting a profession's obligation to research, Cusick et al. (2017) emphasized that research evidence not only guides practice but also tests practice to provide information about its utility, and thus is valuable when discussing accountability in practice. Occupational therapy researchers as well as practitioners have an ongoing commitment to undertake or use research to maintain the profession's credibility as evidence-based to clients, payers, institutions, and policy makers (Taylor et al., 2017). To this effect, The American Occupational Therapy Association's (AOTA) Standards of Practice for Occupational Therapy requires occupational therapy practitioners to be knowledgeable about evidence-based research and apply it ethically and appropriately to provide services that are consistent with best practices (AOTA, 2021).

Defining the problem: the research-practice gap in school settings

The discussion of implementation of EBP in occupational therapy brings up the concern of inconsistent use of research evidence in occupational therapy practice even today. A recent survey measuring evidence-based practice (EBP) implementation in occupational therapists practicing in the U.S., revealed that 8% of the participants (n=578) accessed professional databases frequently, 18.4% read and critically appraised a research study, and 27% shared evidence from a research study with a client frequently (Krueger et al., 2020). Low levels of research utilization and of EBP implementation have also been reported in other recent studies (Myers, 2019a; Thomas & Law, 2013; Wang et al., 2019). In a web-based survey exploring caseload and workload trends in school-based practice across the United States, Seruya and Garfinkel (2020) found that

despite current philosophy regarding best practice, occupational therapy practitioners continue to provide services outside of the classroom and other natural settings. It was reported that these practitioners require resources not only to develop advocacy skills but also to enhance their access to and use of research, and that only 18% (n=386) of practitioners in the study indicated that research activities were part of their workload. A research-practice gap is clearly a crucial problem in school-based settings, as it is in the other practice settings.

Educational reforms such as the Individuals With Disabilities Education Improvement Act (IDEIA) of 2004 (PL. 108–446) and the Every Student Succeeds Act (ESSA) of 2015 (PL. 114 - 95), emphasize the significant role that EBP should play when making clinical and instructional decisions in the schools. IDEIA defines occupational therapy as a related service. It states that services (special education and related services and supplementary aids and services) are to be based on peer-reviewed research, as much as practicable, and provided to the student or on behalf of the student. (§1414[d][A][IV]). According to the Legislative Analyst Office report (Petek, 2019) from the California State Legislature website, between 2007-08 and 2017-18, inflation-adjusted special education expenditures increased from $10.8 billion to $13 billion (28 percent). As special education costs are rising, occupational therapists need to be mindful of providing cost-effective treatments, and showing evidence of outcomes. A sizable proportion of nearly 19% of the occupational therapy workforce is in school settings, based on the recent AOTA salary and workforce survey (AOTA, 2020a). Given the driving factors of set professional standards of practice, need for effective interventions in practice,

educational law requirements, and rising special education costs, low EBP implementation is undoubtedly a matter of concern for the profession.

Certainly, one has to consider the financial costs to the school districts for the implementation of interventions that have some emerging evidence or no evidence at all, but the opportunity-costs, which is seen as lost time and lack of progress for the student due to the use of an ineffective or less effective intervention, is altogether harmful to the student (Scheibel et al., 2022). This further drives the point that school-based occupational therapy practitioners (Sb-OTPs) have to constantly update their knowledge base on current practice developments and newer models of practice supported by research evidence, in order to provide the appropriate care to clients (Cusick et al., 2017). It is their ethical responsibility to be consumers of research.

Factors contributing to the problem

Published occupational literature studying the lack of EBP implementation has provided insights on factors impacting use of EBP, particularly practitioners' perceptions of EBP and of barriers to research use. Commonly cited challenges faced by practitioners include limited skills and resources in searching research articles, limited skills in reading and understanding published research and evaluating the quality and relevance of the research findings for a particular need or clinical situation, large caseload resulting in lack of time, professional isolation, and presence of workplace conditions that lack support for EBP (Bennett et al., 2003; Dysart & Tomlin, 2002; Lampe et al., 2019; Samuelsson & Wressle, 2015; Upton et al., 2014). Not knowing where and how to look for relevant research, or how to gauge if a study is a good one or not, or how to interpret

statistics can make research use a daunting and time-consuming task. Moreover, not

having the time or the support from the employer to support this task, only adds to the

problem. Thus, the causal factors of this problem lie within the individual practitioner

and the organizational levels. In addition to these factors, Grajo et al. (2020) stated that

the lack of clear theoretical and pragmatic models that facilitate evidence application in

practice, limited capacity in knowledge translation methods, and established practice

patterns that limit the use of evidence in practice contribute to the challenges practitioners

face in translating research knowledge into practice.

Developing an approach to the problem

Bridging the research-practice gap is a complex task, considering the contextual

needs of the client, practitioner, organization and the system. Citing Potter and Brough's

(2004) systemic approach of capacity building in program development, Bennett et al.,

(2016a) support the development of capacity at the staff and the organizational level.

Along with training, mentoring, providing resources to practitioners, organizational

initiatives were found useful in facilitating changes in clinical practice (Bennett et al.,

2016b). They encourage further research to investigate the impact of such initiatives on

EBP behaviors in different organizational settings.

Undertaking purposeful implementation science research (IS) efforts to bridge the

research-practice has been recommended by Juckett et al. (2019). A burgeoning area of

study, IS involves the study of methods that facilitate research uptake and other EBPs

focused on the systematic uptake of research findings and other EBPs into daily practice,

with the overall goal of improved quality and effectiveness of health services (Eccles &

Mittman, 2006). Incorporating a scope broader than traditional clinical research, IS

examines the impact of different barriers, facilitators and strategies on the adoption of

evidence in practice, and focuses not only at the client level but also at the provider,

organization, and policy levels of healthcare (Juckett et al., 2019). IS provides

information on implementation strategies, that are techniques used to promote the

adoption of EBPs into a real practice setting. Selecting implementation strategies is a

complex task. Colquhoun et al. (2017) shared that four tasks have been commonly used

in designing individual-level knowledge translation interventions: barrier identification,

intervention component selection based on the identified barriers, use of theory, and user

engagement which seeks inputs on feasibility or acceptability of the intervention from the

potential intervention-users; these tasks make the process of designing and selecting

implementation strategies more rigorous (Powell et al., 2019).

Program overview

To address the identified gap in evidence-based practice, i.e. limited use of

research by school-based occupational therapy practitioners to guide decision-making in

clinical practice, this doctoral project involves the designing of an evidence-based research

utilization capacity-building program that targets the capacities at both the individual and

the organizational levels, and evaluation of the impact of the program on Sb-OTPs

employed in an contracting agency providing services to school districts. It aims to build

practitioner knowledge and skill for research use with parallel efforts to build the

organization's capacity to support the practitioners' EBP implementation through an EBP

supportive culture. Drawing from studies in IS and previous occupational therapy EBP

endeavors, it promotes more frequent use of research evidence by Sb-OTPs into their real-world school-based practice with students, and thus helps them take that step ahead in the toward effective EBP implementation. Using a mixed-methods research design, this intervention program will consist of four core elements of education, provision of resources, working in groups, and organizational supports.

As outlined, it is essential that Sb-OTPs use EBP in schools to promote students' participation, to engage in ethical practice consistent with the profession's standards, and to provide evidence for accountability. This purpose of this doctoral study is to improve Sb-OTPs' research utilization behaviors within the organizational context with the end goal of facilitating better EBP implementation. This study aligns with the Occupational Therapy Practice Framework, 4th edition (AOTA, 2020b) which lists evidence-informed practice as one of the contributors influencing the cornerstones of occupational therapy practice. These cornerstones, highlighted as strong emphasis on values and beliefs related to occupation, therapeutic use of occupation, therapeutic use of self, and professional behaviors and dispositions, are essential for practitioners to facilitate the occupational therapy process, and are developed over time through education, mentorship and experience (AOTA, 2020b). The following chapters will present in detail the existing theoretical and evidence base to support the study and the current methods and approaches explored to design the study.

CHAPTER TWO – Project Theoretical and Evidence Base

The American Occupational Therapy Association's (AOTA) Standards of Practice guidelines states that occupational therapy practitioners are required to apply evidence-based practice (EBP) appropriately in occupational therapy service delivery to clients (AOTA, 2021). However, reported low levels of research utilization in practice by practitioners is resulting in low EBP implementation (Krueger et al., 2020; Myers, 2019a; Thomas & Law, 2013; Wang et al., 2019). Factors related to the individual practitioner and the organization contribute to this problem of low research utilization (Bennett et al., 2003; Dysart & Tomlin, 2002; Lampe et al., 2019; Samuelsson & Wressle, 2015; Upton et al., 2014). This chapter presents the evidence that supports the nature of the identified problem, and discusses the theoretical bases for the problem and the intervention program.

Proposed explanatory visual model

The proposed visual explanatory model, in Figure 2.1, highlights the factors that impact the use of research evidence by school-based occupational therapy practitioners (Sb-OTPs) in their clinical practice and how that affects their ability to deliver EBP.

At the top, the inverted triangle represents a hierarchical structure of the factors at various levels that hinder the use of research evidence by Sb-OTPs in their daily practice. While it is important to consider factors at the structural, organizational, individual practitioner, and client or patient level that may impact capacity for research in practice (Potter & Brough, 2004), the scope of this project is limited to the organizational and individual levels.

Figure 2.1

Key factors influencing the problem of research utilization

At the organizational level, lack of supports and resources combined with a lack of clear expectations and priorities for evidence-based practice contribute to an unsupportive work culture for practitioners to incorporate research evidence in daily practice (Bennett et al. 2016b; Brown et al., 2009: Harding et al., 2014; Williams et al., 2015). Lack of research evidence available within the profession is another obstacle to be considered (Klaic et al., 2019; Klug et al., 2020; Lyons et al., 2010; Upton et al., 2014). Some of the factors to consider at the individual level are lack of adequate knowledge and skills for research literacy, lack of resources and time, and professional isolation (Bennett et al., 2003; Dysart & Tomlin, 2002; Lampe et al., 2019; Samuelsson & Wressle, 2015; Upton et al., 2014).

These struggles experienced by the practitioners target the research evidence source of EBP. Evidence-based practice involves application of the best external clinical evidence from systematic research in a clinical situation by using practitioner clinical expertise, along with close consideration of the client's values and preferences (Sackett et al., 2000), as highlighted in the center of the explanatory model. Even though the practitioners use their clinical expertise and include student and family values and preferences in making assessment and intervention decisions, they fail to meet EBP standards due to limited use of research evidence in their decision-making process. Thus, this identified problem of inconsistent use of research evidence negatively impacts the overall picture of EBP implementation in the profession.

The bottom part of the model highlights some of the serious implications of this research-practice gap. Not only are school-based educators and practitioners falling short in being compliant with expected standards, they also run a risk of providing possibly ineffective interventions in terms of client outcomes and costs (Scheibel et al., 2022). This threatens the profession's ability to utilize new approaches and interventions, and to gain public confidence as an evidence-based profession.

Evidence to support the proposed explanatory model

To evaluate the explanatory model using the current state of research on this topic, a literature search was completed using the following guiding questions:

- To what degree are school-based occupational therapists utilizing evidence to inform practice?

- What are the personal, professional and institutional barriers to use of research

evidence in school-based occupational therapy practice?

A combination of key words and MeSH terms such as 'research utilization and evidence-based practice,' 'evidence-based practice,' 'research utilization,' 'occupational therapy or occupational therapist or occupational therapists or OT' were used to search CINAHL, APA PsycInfo, and PubMed databases for studies published between 2010 and 2021. Google Scholar was also searched using the keywords identified above. Abstracts were screened using inclusion criteria - quantitative, qualitative or mixed methods studies and scoping reviews or systematic reviews published in English that directly examined or provided information on evidence-based practice and/or research utilization for occupational therapy in any work setting. Twenty-four studies were selected for review. Excluding the two scoping reviews and one systematic review, thirteen studies were from the US and the rest from Canada, Australia, UK, and Sweden. Thirteen studies had school-based services represented in the study sample. Only seven studies were related exclusively to the school-based setting; all of them were US-based.

Research findings show that use of scientific literature in practice among occupational therapy practitioners is insufficient (Harding et al., 2014; Klaic et al., 2019; Klug et al., 2020; Myers, 2019a, 2019b; Rochette et al., 2020; Thomas et al., 2020; Wang et al., 2019). Occupational therapy practitioners reported low engagement ranging between 7% and 25% in the 5-step EBP cycle (n=578, 22% working in schools) (Krueger et al., 2020), and underutilization of the online database and other evidence resources offered to them as part of their national board certification renewal (Myers, 2019a).

Personal factors commonly highlighted in the studies were participants' attitudes,

knowledge and skill, work experience, and academic qualifications. There was a strong

consensus that occupational therapists have positive **attitudes** toward evidence-based

practice and have positive intentions for implementing it (Harding et al., 2014; Klaic et

al., 2019; Klug et al., 2020; Lampe et al., 2019; Lyons et al., 2010; Myers, 2019a;

Thomas & Law, 2014; Thomas et al., 2020; Upton et al., 2014). In their scoping review

of EBP in occupational therapy practitioners, Thomas and Law (2014) pointed out that

attitudes have evolved over the past years with positive attitudes growing from 2002

onward. Lack of **knowledge and skill** required for research uptake has been one of the

most cited personal barriers over the years (Fristedt et al., 2016; Harding et al., 2014;

Lyons et al., 2010; Samuelsson & Wressle, 2015; Upton et al., 2014). Even though recent

studies provide practitioner self-reported data supporting adequate knowledge of and

good familiarity with EBP (Klaic et al., 2019; Klug et al., 2020; Thomas et al., 2020;

Wang et al., 2019), critical appraisal of research and translating research findings into

practice still remains a difficult task for practitioners, including those in school-based

practice (Benson, 2013; Lawdis et al., 2017; Szucs et al., 2016). Much of the literature

has also discussed practitioners' struggle with viewing research literature as an important

source of evidence compared to their own clinical experience and peers' opinions

(Dougherty et al., 2016; Fristedt et al., 2016; Samuelsson & Wressle, 2015; Thomas &

Law, 2013; Thomas & Law, 2014; Upton et al., 2014; Wang et al., 2019) This could stem

from lack of knowledge of what EBP means. However, an absence of association

between EBP knowledge and skill and EBP use was reported by Krueger et al. (2020)

(n=578) and Thomas et al. (2020). One possible explanation could be that, only

knowledge and skills for locating and appraising are not enough, practitioners need to

also learn to apply EBP into actual practice and they need the time to carry out EBP

activities (Thomas et al., 2020). **Lack of interest and motivation** to engage in EBP

processes was explicitly discussed in some studies (Fristedt et al., 2016; Lawdis et al.,

2017; Upton et al., 2014). Significant positive correlations (p<0.01) between participants'

familiarity with EBP and their attitude, intention and engagement with EBP were found

(Wang et al., 2019). Interestingly, Klug et al. (2020) reported significant relationships

between attitudes and perceived barriers in managers (p=0.01); as attitudes became more

positive, the barriers perceived increased. Based on research from 2000 - 2011 in the

scoping study (Thomas & Law, 2013) and the systematic review (Upton et al., 2014),

higher academic qualification or postgraduate training and lesser time since graduation

were mostly associated with positive attitudes toward, greater use of, and more skill

confidence in research evidence in practice. Recent studies have shown similar results

where doctorate degree (p=0.002) (Krueger et al., 2020) and master's degree (p=.016)

(Myers, 2019a) participants showed higher use of research compared to master's degree

and bachelor's degree respectively. Entry level doctorate and master's degree programs

currently include training and use of research related skills compared to programs in the

past (Krueger et al., 2020; Myers, 2019b). Lastly, there has been much speculation in past

research that years of work experience impacts EBP use. Even though therapists with less

than six years of practice had significantly higher familiarity (p=0.01) with the EBP

process than those with more than six years' experience (Wang et al., 2019) (n=47),

practice experience did not make a significant difference on EBP implementation

(Krueger et al., 2020; Myers 2019a) and on attitudes or intentions to engage in EBP

(Klug et al., 2020; Myers, 2019a; Wang et al., 2019). Also, worth noting is, EBP use was

high in practitioners with **high self-reflection** behaviors (*p*=.001) (Krueger et al. 2020).

Professional factors impacting research uptake in practice have included lack of

time, workload pressures, lack of access to resources, limited evidence base, and. to some

extent, isolation from peers. **Lack of time** on the job has been a glaringly obvious barrier

to practitioners' use of research evidence in daily practice (Benson, 2013; Fristedt et al.,

2016; Harding et al., 2014; Klaic et al., 2019; Klug et al., 2020; Krueger et al., 2020;

Lawdis et al., 2017; Lyons et al., 2010; Samuelsson & Wressle, 2015; Szucs et al., 2016;

Thomas & Law 2014; Upton et al., 2014; Wang et al., 2019). Deeper analysis of this

commonly perceived barrier reveals that it is inextricably linked to lack of resources,

practitioner's knowledge and skills, and workplace demands (Harding et al., 2014). There

is a constant struggle with balancing research activities and work demands due to

caseload pressures from high caseload numbers and decreasing length of patient stay,

workplace attitudes of prioritizing direct client treatment over other duties, and lack of

knowledge and skills which makes the "doing" of the EBP processes take a long time

(Fristedt et al., 2016; Harding et al., 2014; Klaic et al., 2019). **Lack of resources** such as

access to computers, research databases, and full text articles has made research

inaccessible to practitioners (Benson, 2013; Harding et al., 2014; Lyons et al., 2010;

Szucs et al., 2016; Upton et al., 2014). School-based practitioners feel that accessing

research evidence is an inherent challenge for the educational environment in which they

work, compared to a clinic-based or rehabilitative environment (Benson, 2013). Krueger

et al. (2020) reported that practitioners who were provided more than 30 minutes time per week for EBP ($p=.009$) and those who had access to full-text articles at their work ($p=.006$) had higher scores for implementation in their study. On the contrary, few studies also show evidence-based resources available to practitioners either at their workplace or through their national board certification are being underutilized (Myers, 2019a; Myers, 2019b). It is possible that low motivation for EBP or lack of time are contributing factors in such situations. Many practitioners have complained about the **dearth of research evidence** for their particular patient population and have questioned the quality of the research studies as well (Klaic et al., 2019; Klug et al., 2020; Lyons et al., 2010; Upton et al., 2014). Lack of research evidence is an issue within the profession of occupational therapy. Fristedt et al. (2016) brought up a valid point that the issue may be partly due to practitioners' inadequate knowledge and skill in conducting searches and appraising articles. The occupational therapy national associations, AOTA and NBCOT, have certainly been promoting evidence-based practice as noted in their official documents for professional practice and the increased number of electronic resources, toolkits and databases for research utilization available to members on their website, which is substantial support from the profession. Another professional barrier that makes EBP use difficult for practitioners is **isolation from colleagues and expert peers** (Samuelsson & Wressle, 2015; Upton et al., 2014). This would especially be the case in school-based practice where limited or no contact with peers on the team can be a part of this practice in this setting (Benson, 2013). Less prominent professional barriers that were reported in the literature were lack of evaluation methods for EBP implementation as reported by

occupational therapy managers (Klug et al., 2020), and lack of accountability to stakeholders such as parents, funders, and other professionals as reported in a study in the school-based setting (Di Rezze et al., 2013).

Lastly, literature places a great deal of emphasis on organizational barriers for EBP. **Lack of time and resources,** such as those discussed in the professional factors section above, can also be considered as organizational or workplace issues. While some organizations have been reported to require EBP from employees (Krueger et al., 2020; Thomas & Law, 2013; Upton et al., 2014; Williams et al., 2015), some others have given **low or no priority to EBP** (Fristedt et al., 2016; Harding et al., 2014; Klaic et al., 2019). In some circumstances, there is a conflicting message from the organization as seen in the positive attitudes toward EBP but lack of support or resources for its implementation (Klaic et al., 2019; Thomas & Law, 2014). Organizational **lack of support** for EBP has been associated with higher value placed on direct treatment, no expectation to work in an EBP way, lack of time and resources and lack of performance indicators related to EBP (Fristedt et al., 2016; Harding et al., 2014; Klaic et al., 2019; Thomas & Law, 2014; Upton et al., 2014; Williams et al., 2015), with practitioners rating organizational barriers as high deterrents for EBP (Klaic et al., 2019; Lyons et al., 2010). There is limited funding provided for training (Klaic et al., 2019) and in-house training in the school settings has been geared more toward teaching staff than to occupational therapy practice related concepts (Benson, 2013). Managers perceive EBP barriers at a moderate level and have **low perceived control over EBP implementation**, which negatively impacts their own levels of EBP implementation (Klug et al., 2020). Poor role modeling from

colleagues and managers, in turn, creates a demotivating EBP environment amongst employees. Another important theme raised is the **misalignment of organizational and professional goals of the staff**. Practitioners often feel that their opinions and values remain unheard and they experience lack of power and flexibility to contribute their voices to bring about change in clinical practice in the workplace (Williams et al., 2015). This misalignment is also noticed when organizations perceive EBP as the employee's responsibility and for the employee's own professional benefit (Harding et al., 2014). In fact, eager employees who do take on the responsibility and put in effort on their own personal time, face discouragement when what they do is not valued by their workplace that is resistant to change (Klaic et al., 2019). Given that the organizational context is a stronger moderating factor than individual factors such as knowledge and skill (Klaic et al., 2019), a change in leadership styles and in organizational values and culture has been strongly recommended to facilitate EBP (Klaic et al., 2019; Rochette et al., 2020; Thomas & Law, 2013; Thomas & Law, 2014; Williams et al., 2015).

Overall, the research findings provide strong evidence to answer the search questions. Two out of these three studies included older research from 1996 to 2012 which gives a sense of the profession's continual efforts to align with EBP practice. The majority of the studies were from the US, and most of the remaining were from countries like Canada and the UK which have practice standards similar to the US. While the use of appropriate research designs and measures to enhance data trustworthiness has been an overall strength in all the studies reviewed, common limitations such as selection bias, bias from self-reporting on surveys or social desirability bias and moderator bias, and

limited use of validated measures have been reported by authors. About a third of the studies had a small sample size which limits the generalizability of findings. Most importantly, only a little more than half of the studies had representation of participants from school settings, which further impacts generalizability to the school setting. Finally, important to consider is the fact that the mandates and regulations for both occupational therapy practice as well as the educational systems differ between states within the US, and hence the findings from studies need to be applied cautiously while answering the search questions.

In summary, while a higher academic qualification, self-reflective behavior in practice, and behavioral intention supports EBP at the individual practitioner level, organizational and professional factors such as lack of time, resources, dearth of evidence, lack of support and priority for EBP within the organization prove to be stronger barriers at play in EBP implementation.

Theoretical frameworks to support the project: Problem and intervention

The issue of research-practice gap in occupational therapy has been studied and addressed through various interventions over the years (Atler & Stephens, 2020; Benevides et al., 2015; Cahill et al., 2015; Cameron, 2015; Doyle & Swinth, 2018; Egan et al., 2015; Gillen et al., 2019; Grajo et al., 2020; Marr, 2017; Moyers et al., 2014; Myers & Lotz, 2017; Myers et al., 2019; Szucs & Haneman, 2017; Thomas & Law., 2014). However, EBP implementation among occupational therapy practitioners in the United States is still reported as being at a low level. Doyle and Swinth (2018) found that although there has been a considerable increase in the availability of online databases and

resources for practitioners to access, their awareness and use of these resources is limited. It is becoming increasingly evident that something more needs to be done, or even perhaps more to be understood to bridge this gap in professional practice.

While highlighting that interventions to increase EBP uptake in allied health professionals have mostly resulted in an improvement in knowledge and skills only with limited success in changing the behaviors, Klaic et al. (2019) proposed a lack of an explicit theoretical framework to guide the implementation as a possible reason for this limited success. Use of theoretical frameworks is considered to be an important task in such efforts in the field of implementation science (IS) (Colquhoun et al., 2017).

IS is a study of methods that increase uptake of research and other EBPs in practice in health care and other professional areas (Nilsen, 2015). Nilsen (2015) sorted implementation science theories, models, and frameworks into five categories. Among all of them, the Theory of Planned Behavior, an intrapersonal behavior theory; The Social Cognitive Theory, an interpersonal behavior theory; and the Organizational Readiness for Change, an organizational-level implementation theory, provide theoretical rationale that aids in understanding the nature of the problem of limited research uptake in occupational therapy practice. In addition, the Knowledge-to-Action process framework, categorized as a process model by Nilsen (2015) provides guidance for the development of the program design. This section will first discuss the classic and the implementation theories that explain the proposed problem followed by a discussion of the action model that supports the program intervention.

An extension of the Theory of Reasoned Action, the Theory of Planned Behavior (TPB) by Icek Ajzen (1985, 1991) posits that behaviors are immediately determined by behavioral intentions and under certain circumstances, perceived behavioral control. Behavioral intention, a key concept in this model, is determined by a combination of three factors: attitudes toward the behavior, subjective norms, and perceived behavioral control. The TPB states that behavioral achievement depends on both motivation (intention) and ability (behavioral control). More recently, Ajzen (2011) suggested that contextual factors, including institutional policies, may influence intentions due to their effect on the individual's perceived behavioral control.

First, *attitude* is the degree to which a person has a favorable or unfavorable evaluation of the behavior of interest and includes consideration of the outcomes of performing the behavior. Research literature shows that occupational therapy practitioners (OTPs) have held overall positive attitudes towards EBP even though some perceive it to be too complicated, too effortful and requiring too much personal motivation (Bennett et al., 2003; Klug et al., 2020; Lampe et al., 2019; Upton et al., 2014). Next, *subjective norms* relate to a peoples' beliefs about whether peers and others of importance approve of the behavior and think they should engage in the behavior. Research literature shows that lack of encouragement, support and set demand for EBP by administration portrays a diminished approval of EBP to practitioners in their workplaces (Dysart & Tomlin, 2002; Upton et al., 2014). Lastly, *perceived behavioral control* refers to a person's perception of the ease or difficulty of performing the behavior of interest and it varies across situations and actions, which results in a person having

varying perceptions of behavioral control depending on the situation. From published research literature, it is very clear that OTPs have low perceived control over EBP implementation due to lack of knowledge and research skills in terms of use of electronic databases, conducting literature searches, understanding research and critical appraisal of the quality of research studies, integrating evidence into practice. (Bennett et al., 2003; Dysart & Tomlin, 2002; Samuelsson & Wressle, 2015; Thomas & Law, 2013; Upton et. al., 2014). EBP was perceived as a complex process and perceptions of low research applicability; i.e., difficulty to use research in daily practice, unclear research, and lack of enough research evidence, were additional reported barriers (Bennett et al., 2003; Dysart & Tomlin, 2002; Thomas & Law, 2013; Upton et. al., 2014). Moreover, lack of provision of time and necessary facilities and resources by their organizations deterred the practitioners from using research (Samuelsson & Wressle, 2015; Upton et. al., 2014). The study by Klaic et al. (2019) demonstrated that TPB is a useful framework for explaining allied health professionals' experience of EBP confirming that allied health professionals have positive attitudes towards EBP but low normative beliefs and low perceived behavioral control.

In addition to the TPB, which focuses on intrapersonal constructs of behavioral intent and control, the interpersonal behavioral perspective provided by The Social Cognitive Theory (SCT) is equally important to understand problems in research uptake. The Social Cognitive Theory (SCT) (Bandura, 1986) posits that learning occurs in a social context with a dynamic and reciprocal interaction of the person, environment, and behavior. A person's past experiences influence reinforcements, expectations, and

expectancies, all of which shape whether a person will engage in a specific behavior and the reasons why a person engages in that behavior. The goal of SCT is to explain how people regulate their behavior through control and reinforcement to achieve goal-directed behavior that can be maintained over time. It uses six constructs; reciprocal determinism, behavioral capability, observational learning, reinforcements, expectations, and self-efficacy.

Reciprocal Determinism, the central concept of SCT refers to the dynamic and reciprocal interaction of a person (individual with a set of learned experiences), environment (external social context), and behavior (responses to stimuli to achieve goals). As pointed out earlier, the lack of support and encouragement within the social setting of a workplace, as well as lack of priority set for EBP sets up less supportive social context to carry out EBP activities (Dysart & Tomlin, 2002; Klaic et al., 2019; Upton et al., 2014). OTPs often experience lack of incentive or *reinforcements* in their workplace*,* and with lack of time along with high focus on productivity standards, the *expectations* set for EBP in their work environment are often low (Dysart & Tomlin, 2002; Lampe et al., 2019; Samuelsson & Wressle, 2015; Upton et al., 2014). Thomas and Law (2013) suggested that organizational enablers of EBP of systems-level support, leaders who promote a climate of EBP, adequate resources including mentorship, and university support and partnerships, and opportunities to engage in meaningful research projects within the practice context creates the social environment to encourage new EBP perspectives in people. Senior practitioners can be positive role models to motivate evidence-based behaviors (Morrison & Robertson, 2016), which aligns with the SCT

construct of *observational learning*. However, occupational therapy managers perceive moderate levels of barriers to implementation and have low perceived control over implementation which could negatively impact their intention to implement EBP (Klug et al., 2020). These findings can suggest that managers possibly struggle with being positive role models in their work settings. An unsupportive work environment could be also linked to low observational learning likely due to poor role models in the workplace. If individuals witness less than successful demonstration of a behavior, they will also be less likely to complete the behavior successfully. Hence, from an interpersonal perspective, SCT principles provide insight into the contribution of the social environment on OTPs' struggles with regulating and maintaining EBP behaviors over time.

Lastly, in addition to examining the individual unit of human behaviors, it is important to consider the organization as a unit that impacts the EBP implementation within the profession. Bryan Weiner focused on the organizational level of analysis in terms of collective behavior change. According to Weiner (2009), Organizational Readiness for Change (ORC) is a multi-level, multi-faceted organizational construct, in which readiness for change refers to organizational members' shared resolve to implement a change (change commitment) and shared belief in their collective capability to do so (change efficacy). The readiness depends on how much the organizational members value the change and how favorably they appraise three key determinants of implementation capability: task demands, resource availability, and situational factors. When organizational readiness for change is high, organizational members are more

likely to initiate change, exert greater effort, exhibit greater persistence, and display more cooperative behavior, which results in more effective implementation.

Based on available research evidence (Bennett et al., 2003; Klug et al., 2020; Lampe et al., 2019; Upton et al., 2014), even though OTPs have positive views towards use of research in daily practice it cannot be assumed that as a collective team in an organization, they have a strong change commitment; i.e., shared resolve to pursue the course of action involved in change implementation. With the lack of encouragement, support, and set demand for EBP by administration in their workplaces (Dysart & Tomlin, 2002; Upton et. al., 2014), organizational members are unlikely to hold common perceptions of readiness if leaders communicate inconsistent messages or act in inconsistent ways, or if intra-organizational groups or units have limited opportunity to interact and share information, or if organizational members do not have a common basis of experience (Weiner, 2009). Also, based on Weiner's theory, it is possible that receptive context such as the OTPs' positive attitudes is a necessary but not sufficient condition for readiness. With regard to change efficacy, since literature suggests that OTPs do not share a favorable assessment of task demands, resource availability, and situational factors (Samuelsson & Wressle, 2015; Upton et. al., 2014; Wang et al., 2019), it can be safely concluded that their sense of confidence in collectively implementing a complex organizational change of strong research uptake in practice will also be low. With a positive assessment of the resource availability, situational factors, such as amount of time available, and appropriate internal political environment to carry out the shift toward more research uptake, will they have a high efficacy judgment for this task

(Weiner, 2009).

Furthermore, Weiner (2009) contended that broader, contextual conditions like organizational culture, organizational policies and procedures, and past experiences with change in the organization can amplify or dampen the therapy team's change valence, which is, whether they think the change really will deliver touted benefits, and change efficacy judgments; i.e., whether they think the organization can effectively execute and coordinate change-related activities. In their study, Bennett et al. (2016b) concluded that the OTPs working in a department with a history of support for EBP viewed the adopted organizational EBP initiatives as a positive influence on the culture of the workplace, and practitioner's sense of identity, which contributed to changes in clinical practice. Monitoring the OTPs perspectives and barriers to the use of EBP allowed the organization to refine their model of support to the practitioners (Bennett et al., 2016b).

Moving on to the theoretical support for the intervention development, the process model of Knowledge-to-Action (KTA) process framework (Graham et al., 2006) provides a structured mechanism for translating research into practice. The Canadian Institute of Health Research (Government of Canada, C.I. of H.R., 2020) first coined the term 'knowledge translation' (KT) in 2000, and defines it as a dynamic and iterative process that includes synthesis, dissemination, exchange and ethically-sound application of knowledge to improve the health, provide more effective services and products, and strengthen the health care system (Government of Canada, C.I. of H.R., 2020). With a purpose of providing careful deliberate guidance for KT endeavors, KTA is a context-focused framework that has two components: knowledge creation and knowledge action,

which are dynamic and can influence each other. The knowledge creation component

represents the production and synthesis of knowledge, and the action cycle represents the

activities needed for the application of knowledge (Graham et al., 2006). Depending on

which parts of the framework are used in a specific project, the knowledge creation or

action or both, there are key elements that initiate the process of change. **Tailoring**

knowledge to suit the needs of the potential users and **customizing knowledge**

dissemination methods to better reach the intended users are necessary inputs from the

knowledge creation phase (Graham et al., 2006). **Involvement of all the stakeholders** is

highlighted as an overall important aspect of the framework. The action cycle delineates

step by step activities for knowledge application. **Adapting the generic knowledge to**

the local setting is regarded a crucial step in this framework. An **assessment of barriers**

and facilitators is necessary to understand the issues surrounding potential adopters, the

knowledge to be adopted and the context or setting (Graham et al., 2006), for further

planning of the intervention strategies for that particular setting. Another important

element is the **continuous monitoring** to determine the degree to which the knowledge is

being used, so that new barriers can be identified and addressed. Once these key elements

are set into play, the **tailored intervention strategies** assist knowledge adopters to use

the knowledge in their clinical setting. After knowledge introduction is complete, the

implementers monitor and get feedback about the impact of the knowledge use achieved,

the usefulness of the implementation strategies and any potential adopter concerns that

may be negatively impacting knowledge use (Graham et al., 2006). With this feedback,

implementation strategies are adjusted to address any newly identified barriers. This

cyclical mechanism of action continues as the impact of the knowledge use is continuously monitored. Since it uses a systems perspective, the relationships and interactions between the system and the environment, such as nature of the evidence or the knowledge, the attributes of change or innovation, the target audience, organizational context or culture as well as its resources and supports for the proposed change, and implementation related factors, could influence the desired outcome of increased uptake and application of knowledge (Graham & Tetroe, 2007).

Many aspects of the KTA framework usage make it a versatile tool for KT study design and implementation. The idiosyncratic use of the framework in parts or in entirety as needed by the implementer and it use in different areas of clinical practice, end-users, and clinical settings, suggests it adaptability (Field et al., 2014). Not only can the KTA framework be applied in large- and small-scale projects, but also, in combination with other frameworks as per the needs and preferences of the individual as well as the practice context (Field et al., 2014). It serves as a good match for most real-life knowledge-to-action projects. Besides being versatile, it has also proven to be useful in planning effective implementation strategies that contribute to the desired outcome; i.e., increase in instrumental use (changes in behavior patterns or habits in practice), or conceptual use (change in the levels of knowledge, understanding, or attitudes) of knowledge (Moore et al., 2020; Xu et al., 2020) which increases the likelihood of sustainable changed practice and spread of evidence. The most common phase reported in studies is that of assessing the barriers to changes, with knowledge-related barriers being the most commonly reported (Field et al., 2014).

Given the goal of the KTA framework to provide practical guidance for planning and executing implementation projects from a systems level perspective, it would be a good fit for this doctoral study's purpose and need for program designing to address research capacities at the organizational level, in addition to the practitioner level. With the involvement of all stakeholders set as a key element, this social ingredient of team collaboration and context-based feedback within the organization aligns well with the Social Cognitive Theory (Bandura, 1986), which will be used to address the individual context in the program. Assessment of barriers and facilitators at the organizational and individual level will be conducted as part of the pre-implementation process, and the data will be used by stakeholders jointly to finalize the tailored implementation plan suitable for the organizational context. Monitoring the process will be ongoing to assure that the intervention stays appropriate to address goals and barriers at any given time during the implementation. Adapting knowledge to context will be undertaken in this project in order to tailor the available occupational therapy research to the practitioners' practice context to ensure easy uptake of research.

In summary, the SCT, TPB, ORC, and the KTA frameworks provide an understanding of the problems from an individual and organizational perspective, and guidance to design an intervention suitable for both levels. It is clear that organizations need to focus on changing work conditions to facilitate higher subjective norms and perceived behavioral control among the practitioners. Once the practitioners' commitment and efficacy to change towards EBP is amplified, they will be more likely to put in stronger efforts to bring research evidence into their daily practice.

CHAPTER THREE – Overview of Current Approaches and Methods

Recent surveys in the United States show that occupational therapy practitioners, both in school-based and other work settings, are implementing evidence-based practice (EBP) at a very infrequent level (Krueger et al., 2020; Myers, 2019a, 2019b; Seruya & Garfinkel, 2020). Occupational therapy practitioners (OTPs), as health care professionals, need to implement EBP in daily clinical practice. Professional standards of practice, need for effective interventions in practice, educational law requirements, and rising special education costs are the driving factors for this need. By relying more on traditional methods of practice that lack empirical support, occupational therapy practitioners in school-based practice are at risk of missing out on opportunities to use more effective models of practice and intervention strategies. Moreover, the use of interventions lacking evidence of effectiveness incur not only high monetary costs for implementation, training, and materials, and time costs for staff, but also the harmful cost of lost opportunity in terms of time and progress (Scheibel et al., 2022). Research literature evaluating the nature of the problem indicates core issues at the personal, professional, and organizational levels, namely lack of knowledge, skill, and interest on the individual front (Fristedt et al., 2016; Harding et al., 2014; Lyons et al., 2010; Samuelsson & Wressle, 2015; Upton et al., 2014) and lack of time, resources, support and expectations for EBP, and isolation from colleagues from the professional and organizational perspective (Benson 2013; Fristedt et al., 2016; Harding et al., 2014; Klaic et al., 2019; Klug et al., 2020; Krueger et al., 2020; Lawdis et al., 2017; Lyons et al., 2010; Samuelsson & Wressle, 2015; Szucs et al., 2016; Thomas & Law 2013; Upton et al.,

2014; Wang et al., 2019). Effective interventions that stimulate and support collaborative efforts of practitioners and organizations are vital for meeting the profession's requirement of EBP as a standard of practice to achieve better student outcomes.

To evaluate existing intervention methods for addressing the key issues of the problem and their effectiveness in the aforementioned areas of knowledge, a literature search was completed using guiding questions:

- What interventions exist for achieving increased research evidence use for school-based occupational therapy practitioners, especially in the fields of implementation science and knowledge translation, and what is the evidence of their effectiveness?

- What are existing effective organizational or workplace strategies in promoting research evidence use in daily practice among school-based occupational therapy practitioners?

- Is there evidence about what features of adult teaching programs, both in-person and online, are most associated with positive outcomes in adult learning?

- What are existing effective strategies or methods for community or group learning to increase research evidence use in practice?

- What factors promote long term change in school-based occupational practitioners' use of research evidence in practice in existing literature?

Research done in occupational therapy and allied healthcare fields, implementation science, knowledge translation, andragogy, social learning processes, and organizational supports are some of the concepts or areas of knowledge investigated to determine

methods taken to address research-evidence gap and the effectiveness of the methods. A combination of key words and MeSH terms such as 'effectiveness or efficacy or effective or success or outcome,' 'research utilization and evidence-based practice,' 'occupational therapy or occupational therapist or occupational therapists or OT,' 'allied health professionals or health care professionals or health care workers,' 'implementation strategies or implementation methods,' 'implementation science or knowledge translation,' 'adult education or teaching adults or adult learning,' 'organizational strategies,' 'incentives or rewards or motivation in the workplace,' 'healthcare provider behavior change,' 'sustainability or sustainable,' and 'long term changes' were used to search CINAHL, APA PsycINFO and PubMed databases for studies published between 2010 and 2022. Google Scholar was also searched using keywords identified above. Abstracts were screened using inclusion criteria — quantitative, qualitative or mixed methods studies and scoping reviews or systematic reviews published in English that directly examined and provided empirical data on individual or group-based interventions including technology-enabled ones targeting outcomes related to:

- Changes in EBP at practitioner level e.g., change in knowledge, skills, perception or attitudes or actual practice;
- Changes in EBP within organization/workplaces; e.g., resource availability, number of EBP related activities conducted, perceptions of overall work culture, or actual decision-making;
- Adult learning through in-person, digital or hybrid delivery formats; e.g., outcomes of knowledge and skill, changes in participation, confidence, perception

or motivation to learn, learner preferences, costs involved;

- Sustainability; e.g., change in implementation or program outcomes, fidelity of implementation after initial implementation period and funding is stopped.

Thirty-five studies were selected for review, a mix of three scoping reviews, eleven systematic reviews, two meta-analyses, two mixed methods, four quantitative, four qualitative, two case studies, and seven systematic literature reviews. Most of the research was conducted in the United States, United Kingdom, Australia, Canada, and Sweden with a small proportion in some African and Asian countries. Five studies were based exclusively in the US. The sites varied from exclusive or combinations of hospital settings, outpatient settings, primary care settings, adult rehabilitation centers, community agencies, mental health agencies, public university, acute care rehabilitation, long term care facilities, school settings, public health settings and programs, and department of public health. Only three studies were in school settings, with two of them involving interventions for occupational therapy practitioners and one for occupational, speech-language, and physical therapy practitioners. The majority of the articles, approximately 72%, were from occupational therapy, implementation science, and public health service research journals. Occupational therapy practitioners were represented in the sample population in thirteen studies; other study participants were primary care providers, allied health care providers and workers, public health end users, researchers, policymakers, and managers, directors, or leaders.

Multifaceted (having two or more components) interventions are widely reported as an effective plan in evidence-based practice and healthcare professional behavior

change studies from occupational therapy, allied health, and public health literature

(Allanson et al., 2017; Cahill et al., 2015; Eames et al., 2018; Goorts et al., 2021; Gupta

et al., 2021; Perkins et al., 2020; Romney et al., 2021). While its effectiveness over single

component interventions is questioned (Lau et al., 2015; Squires et al., 2014), recent

evidence recommends multifaceted interventions to guide practice (Allanson et al., 2017;

Goorts et al., 2021; Gupta et al., 2021). In implementation science, a single method is

referred to as an 'implementation intervention' and a set of implementation interventions

chosen to address identified contextual barriers is an 'implementation strategy' (Bauer et

al., 2015). The use of theoretical frameworks to guide research, use of contextually

relevant approaches such as barrier assessment to tailor interventions, and involvement of

stakeholders were other key elements recommended for planning implementation

strategies (Allanson et al., 2017; Eames et al., 2018; Gupta et al., 2021; Lau et al., 2015;

Perkins et al., 2020; Romney et al., 2021). Digital technology enhanced knowledge

translation interventions such as web-based training programs, simulation games, digital

resource materials, and tailored messaging have also been reported as effective as face-

to-face interventions in improving knowledge outcomes (Brown et al., 2020). The most

commonly used interventions reported were education (Allanson et al., 2017; Brown et

al., 2020; Cahill et al., 2015; Eames et al., 2018; Goorts et al., 2021; Gupta et al., 2021;

Johnson & May, 2015; Lau et al., 2015; Perkins et al., 2020; Romney et al., 2021),

ongoing training/supportive supervision/mentoring (Allanson et al., 2017; Cahill et al.,

2015; Eames et al., 2018; Goorts et al., 2021; Romney et al., 2021), audit and feedback

(Allanson et al., 2017; Goorts et al., 2021; Johnson & May, 2015; Lau et al., 2015;

Perkins et al., 2020), online resources/provision of resources (Allanson et al., 2017; Cahill et al., 2015; Eames et al., 2018; Perkins et al., 2020), knowledge brokers/facilitators/champion (Eames et al., 2018; Goorts et al., 2021; Perkins et al., 2020; Romney et al., 2021), reminders (Goorts et al., 2021; Johnson & May, 2015; Lau et al., 2015) and leadership (Allanson et al., 2017; Eames et al., 2018). Participants in occupational therapy studies reported working in groups or team work on case studies as a useful strategy in multifaceted interventions (Cahill et al., 2015; Eames et al., 2018). Intervention considered to support success were ones with the ability to be: active or action-related including audit and feedback or reminders (Johnson & May, 2015); interactive (Eames et al., 2018; Gupta et al., 2021; Lau et al., 2015); tailored to context (Allanson et al., 2017; Eames et al., 2018; Gupta et al., 2021; Lau et al., 2015); adaptable and flexible to needs (Eames et al., 2018, Gupta et al., 2021); used for training and educating stakeholders (Eames et al., 2018; Goorts et al., 2021); supporting clinicians (Allanson et al., 2017; Eames et al., 2018; Goorts et al., 2021; Gupta et al., 2021); and multifaceted or interventions from across a range of clusters (Eames et al., 2018; Goorts et al., 2021). Viewed as a passive intervention, local opinion leaders showed no significant effect on practitioner or process outcomes (Goorts et al., 2021, Lau et al., 2015); similar passive components such as distribution of printed educational materials, didactic teaching formats, low-intensity strategies, and insufficient feedback seemed relatively ineffective when implemented in isolation (Goorts et al., 2021; Lau et al., 2015). External incentives, especially financial ones, alone were unable to produce practitioner behavior change (Gupta et al., 2021).

Outcome measures ranged from a single method or a combination of mostly unvalidated surveys and questionnaires, focus groups, chart audits, interviews, and exams (Allanson et al., 2017; Brown et al., 2020; Cahill et al., 2015; Eames et al., 2018; Goorts et al., 2021; Gupta et al., 2021; Johnson & May 2015; Lau et al., 2015; Perkins et al., 2020; Romney et al., 2021). Practitioner related behavior change outcomes such as guideline adherence, knowledge, skills, beliefs, intention to change, and actual practice change are commonly reported in studies with very limited data on client related outcomes, organization level outcomes, innovation related outcomes or cost-effectiveness of the implementation strategies. Overall, lack of details reported and consistent terminology, in part, create obstacles in making comparisons of effectiveness and outcomes across studies (Allanson et al., 2017; Johnson & May, 2015; Perkins et al., 2020; Romney et al., 2021). Education, an intervention used in all studies, had a positive effect on practitioner outcomes of adherence to guidelines and knowledge and skill increase (Allanson et al., 2017; Goorts et al., 2021; Gupta et al., 2021; Johnson & May, 2015; Lau et al., 2015), with significant improvement in knowledge ($p<.001$) in some studies (Cahill et al., 2015; Eames et al., 2018). Audit and feedback was another intervention reported as having some good evidence base (Allanson et al., 2017; Johnson & May, 2015; Lau et al., 2015). Most frequently used components of education, audit and feedback, leadership, and provision of resources were identified in both statistically successful and unsuccessful trials based on the defined primary outcomes (Allanson et al., 2017). Studies using multifaceted interventions showed statistically significant outcomes in beliefs about capabilities ($p<0.018$), using strategies to implement practice

change (p<0.006, Eames et al., 2018) and participant reported improvements in confidence in EBP skills, intentions to use research in practice and positive perceptions of EBP (Cahill et al., 2015; Perkins et al., 2020).

Initiatives promoting evidence-based practice at the organizational level include efforts aimed at creating a culture of EBP, building capacity, and installing measures to support and sustain the culture (Stetler, 2003). Research related to EBP at the organizational level is still emerging. Leadership was highlighted as one of the most important organizational interventions in literature; aspects of a multidimensional leadership approach to build capacity, supportive infrastructure and positive culture for EBP was used in many occupational therapy and allied health studies (Aarons et al., 2015; Bennett et al., 2016b; Dobbins et al., 2018; Eames et al., 2018; Gifford et al., 2018; Novak & McIntyre, 2010). Shared or horizontal leadership refers to having leader roles appointed at different levels to be involved in decisions and activities' coordination (Bennett et al., 2016b). Transformational leadership behaviors focus on how to motivate people to follow a vision. It entails change-oriented and relation-oriented behaviors such as sharing a vision and common language for EBP within the organization, promoting collaboration and teamwork for learning and growth (teams working together on EBP projects), having a very hands-on approach (using EBP language, being actively involved in EBP activities, encouraging EBP learning at department meetings) and recognizing efforts of employees (Aarons et al., 2015; Bennett et al., 2016b; Dobbins et al., 2018; Eames et al., 2016; Gifford et al., 2018; Novak & McIntyre, 2010). On the other hand, transactional leadership behaviors focus on how to get things done to meet goals. It

follows more task-oriented behaviors such as setting clear expectations for EBP;

providing resources like education and mentorship, incentives, rewards; providing

continuous employee support; providing clear communication; and outlining and

monitoring roles and processes (Aarons et al., 2015; Bennett et al., 2016b; Dobbins et al.,

2018; Eames et al., 2016; Gifford et al., 2018; Novak & McIntyre, 2010). Another

featured intervention was the role of a knowledge broker (KB), also referred to as EBP

champion or coordinator, linkage agent, knowledge manager or capacity builder

(Bornbaum et al., 2015; Dobbins et al., 2018) in charge of facilitating collaboration and

network development, creating knowledge products, project coordination, evaluating

change, supporting sustainability as some of the job duties. Overall, data from

multicomponent organizational level EBP studies reported statistically significant

positive changes in practitioner knowledge and skills (p<0.001) (Dobbins et al., 2018;

Novak & McIntyre, 2010), in indirect EBP implementation behaviors - production of

CATs and peer reviewed conference presentations (p<0.001, Novak & McIntyre, 2010)

and in environmental context and resources (p<0.001, Eames et al., 2018) and

improvements, though statistically non-significant, in evidence-informed decision

making behaviors (Bennett et al., 2016b; Bornbaum et al., 2015; Dobbins et al., 2018). A

positive culture for EBP in the organization, strong sense of professional identity, sense

of pride and increased confidence were also reported by participants (Bennett et al.,

2016b; Eames et al., 2018). There is paucity of data to support the effectiveness of a KB

role (Bornbaum et al., 2015), but the largest effect of a KB role was seen when it was

contextually relevant and interventions were done on site, with active involvement of the

KB in small groups over a long period of time (Dobbins et al., 2018). Leadership

behaviors of providing support, fair leadership, empowering leadership, emotionally

intelligent leadership, providing resources, and providing training showed a statistically

significant correlation with research use in quantitative studies (Gifford et al., 2018).

Education is the most common intervention used in EBP implementation

strategies warranting the need to examine methods, digital as well as face-to-face, that

maximize adult learning. Systematic reviews provide a moderate level of evidence that

blended learning and self-directed learning formats in health professions' education

improve knowledge acquisition as effectively as traditional face-to-face learning formats

(Hew & Lo, 2018; Liu et al, 2016; Murad et al., 2010). Blended learning is a combination

of traditional face-to-face and asynchronous and synchronous digital learning, and

flipped classroom approach is a type of blended format that uses pre-recorded content as

class preparation and active learning methods like discussions or exercises during class

time. A moderate increase in the knowledge domain was also seen with the use of a self-

directed learning format in which teachers play a facilitator's role and learners get to

choose learning strategies, and resources, and to complete self-assessment of outcomes

(Murad et al., 2010). Overall, digital health education formats using multimedia

components, interactive sessions, gaming, virtual reality, and applications are at least as

effective as traditional in-person or hybrid learning methods in terms of knowledge

outcomes and reported learner satisfaction (Brown et al., 2020; McCall et al., 2018).

Strategies like gamification (leaderboard, badges, levels, points etc.) and quizzing (during

online classes and blended formats) were reported as effective tools for motivating adult

participation and better test scores, and supporting better knowledge gains respectively (Griswold et al., 2017; Hew & Lo, 2018; Kim & Castelli, 2021; Liu et al, 2016). All the aforementioned digital learning formats and strategies were found useful especially for adult learners at a more advanced level as they provide ease of accessibility to, self-pacing and repetition of highly interactive content, better flexibility and time efficiency during the learning process, and active learning exercises during class time like case studies or peer discussions for better understanding, recall and application of knowledge (Griswold et al., 2017; Hew & Lo, 2018; Kim & Castelli, 2021; Liu et al, 2016). Active education components associated with higher implementation success and healthcare provider behavior changes are contextually relevant to the provider's practice, very interactive, administered within smaller group settings, delivered by credible providers and included with follow up post initial training sessions (Gupta et al., 2021; Lau et al., 2015).

Communities of practice (CoP) emerged as one of the group or community learning methods in the literature search for organizational processes supporting EBP. A CoP is a collective learning process where a group of practitioners learn about a shared concern or interest by jointly engaging in discussions to share and help each other learn, thus creating a shared repertoire of resources over time (Wenger-Trayner & Wenger-Trayner, 2020). Common participant gains across studies were significant improvements in self-reported knowledge (p<0.00, Bazyk et al., 2015; DeCorby-Watson et al., 2018), beliefs and actions, improved self-perceived confidence in practice, leadership, advocacy and competencies, renewed understanding and commitment to professional roles and

identity, self-reported changes in practice, and enhanced communication and collaboration (Alary Gauvreau et al., 2019; Barbour et al., 2018; Barry et al., 2017; Bazyk et al., 2015; DeCorby-Watson et al., 2018; Roberts, 2015). Common benefits to professional practice and development were possible due to CoP activities that allow sharing of knowledge, creating clinical tools for practice, a safe space for reflection and questioning of reasoning and practice, translating knowledge into practice and collaborative connections between practitioners of different disciplines, professional settings and geographical boundaries (Alary Gauvreau et al., 2019; Barry et al., 2017; Bazyk et al., 2015). Three enablers for CoP implementation highlighted were related to having a supportive structure, proper facilitation, and meaningful activities. A smaller size, mixed novice-expert attendance, preferred face-to-face format, diverse population, convenient and consistent schedule, management support for access and attendance were listed as productive structural elements for a CoP meeting (Alary Gauvreau et al., 2019; Barbour et al., 2018; Roberts, 2015). Having a strong facilitator, professional etiquette, clearly defined expectations and plans and roles, safe and supportive and trusting environment ensured good facilitation during meetings (Barbour et al., 2018; Roberts, 2015). Activities were found meaningful when the interest areas and topics were decided by members and relevant to their practice area and needs. Sharing of resources and success stories, research discussions, exchange of ideas and information, reflection and questioning about action and practice, professional development, dissemination of information, group problem solving, and creation of clinical tools were some activity examples perceived as meaningful (Alary Gauvreau et al., 2019; Barbour et al., 2018;

Barry et al., 2017; Bazyk et al., 2015; Roberts, 2015). There is lack of evidence on the effectiveness of online CoPs compared to in-person ones but it is a platform that can allow meaningful interactions through meetings and discussion posts, use of online assessment tools, and a convenient way for people facing geographical and professional isolation to connect together (Alary Gauvreau et al., 2019; Barbour et al., 2018; Barry et al., 2017; Bazyk et al., 2015).

There is a lack of a clear definition of sustainability, details of purposeful sustainment efforts, and of a sustainability framework in most evidence-based intervention studies (Hailemariam et al., 2019; Tricco et al., 2016). Clearly defining sustainability, using a suitable framework, planning for sustainability in the early stages, choosing an appropriate timeframe to obtain valid data on sustainability, keeping track of intervention fidelity and adaptation, and having clearly defined study goals and outcomes are some of the key suggestions outlined for future implementation studies to consider for better understanding and work on sustainability (Hailemariam et al., 2019; Tricco et al., 2016; Wiltsey Stirman et al., 2012). Commonly used sustainment strategies included funding for continued implementation of the intervention and for ongoing training for maintenance of provider skills, booster training sessions, supervision, and feedback (Hailemariam et al., 2019). Other sustainment strategies reported in literature were developing a repository of research, creating interest by forming social links as part of dissemination, combining key actors that support knowledge translation, creating links with academia and local champions, increasing absorptive capacity of providers, balancing attempts between generating new research and implementing efforts, presence

of champion leaders, uniting and engaging stakeholders, prioritizing and supporting continued intervention use by organizational leaders, adapting program needs to the intervention, maintaining staff commitment, adaptation of intervention and its alignment between innovation and setting, and monitoring intervention effectiveness (Borst et al., 2022; Hailemariam et al., 2019; Oborn et al., 2013; Wiltsey Stirman et al., 2012). The frequently reported facilitators for intervention sustainment were funding, adaptation/alignment, and organizational leadership. Hindering factors were lack of funding and technical assistance, leadership challenges, unfavorable organizational climate, nature of the intervention, and fidelity monitoring (Hailemariam et al., 2019; Wiltsey Stirman et al., 2012).

While the literature search provides a substantial amount of evidence-based practice interventions that have been used to address research-practice gaps in the healthcare field, careful consideration is needed while appraising the effectiveness of these published interventions. The experimental studies included in this review used appropriate research designs, strict measures to enhance rigor for data collection and analysis, and some used validated assessment tools. Authors reported biases, interviewer influence and researcher influence on participant performance, and low generalizability to other settings. The systematic reviews had strengths, such as comprehensive literature searches and ensured rigor of study selection and analysis. However, reported limitations were weak to moderate quality of articles, publication bias, high risk of bias in studies, and high level of heterogeneity in studies especially with terminology. Highly variable quality of implementation reporting limited a detailed analysis of individual or

combinations of implementation components to understand their effectiveness. Most of the studies have focused on provider related outcomes such as knowledge, skills or intention to change, and sometimes actual practice change. There is not much reported on measurable organizational changes or on cost-effectiveness, or even on client or health related outcomes, which is the ultimate goal of EBP. The studies included in the review were conducted in a wide range of settings and included diverse professionals from the medical and allied health field. Since each organizational context is unique and health care profession practices differ, it is impossible to automatically transfer evidence from one setting or profession to another.

In summary, the current evidence base provides valuable information for designing an evidence-based intervention program to address the research uptake problem in the proposed project. A multifaceted intervention guided by a theoretical framework along with a barrier assessment to tailor contextually relevant interventions as well as stakeholder involvement are core elements for planning implementation strategies. Use of consistent terminology and details for reporting implementation efforts are crucial. Education, ongoing support, audit and feedback, resource provision, a EBP champion, reminders, and leadership have been listed as most commonly used interventions. Initial education can be delivered in a hybrid format; should include interactive and motivating elements such as discussions, quizzing, and games; include components from self-directed learning, blended learning, and/or community of practice models for adult learners; and should be followed with ongoing mentoring and support. Provision of resources and support, a mix of transactional and transformational leadership

to both motivate and direct people, and support from an EBP expert are likely to support building of EBP capacity, infrastructure, and culture within an organization. Sustainability efforts guided by a theoretical framework should be considered in the early planning stages and involve careful consideration of innovation, context, processes and capacity factors that will influence implementation within the study context. Overall, interventions that are action-related, interactive for practitioners, and adaptable to their needs and those of the organization will provide better implementation success.

CHAPTER FOUR – Description of the Proposed Program

Basis of the proposed program

Brief description

The author's proposed multifaceted intervention program is aimed at building the capacity of the school-based occupational therapy practitioners (Sb-OTPs) at Ascend Rehab Services (ARS), Inc., (Union City, California), to access and use best available research evidence during clinical decision-making in their school-based practice. ARS contracts Sb-OTPs and other related service providers out to nearby school districts in the Bay Area. The four key features of this evidence-based program are education, resource provision, working in groups, and organizational support. This program will assist the school-based team at ARS to take a step closer toward reducing the research-to-practice gap and becoming solid evidence-based practitioners.

The use of research evidence in daily practice has been minimal among occupational therapists in the US (Krueger et al., 2020; Myers, 2019a, 2019b; Rochette et al., 2020; Seruya & Garfinkel, 2020; Thomas et al., 2020; Wang et al., 2019). Evidence shows that the key factors contributing to this hurdle in evidence-based practice are lack of knowledge and skill on the individual level (Fristedt et al., 2016; Harding et al., 2014; Lyons et al., 2010; Samuelsson & Wressle, 2015; Upton et al., 2014), and lack of time and resources, low priority for EBP in terms of organization's goals and expectations, on the organizational level (Benson 2013; Fristedt et al., 2016; Harding et al., 2014; Klaic et al., 2019; Klug et al., 2020; Krueger et al., 2020; Lawdis et al., 2017; Lyons et al., 2010; Rochette et al., 2020; Samuelsson & Wressle, 2015; Szucs et al., 2016; Thomas & Law

2014; Upton et al., 2014; Wang et al., 2019; Williams et al., 2015).

Theoretical base of the intervention

The program development is informed by implementation science theories, models, and frameworks (Nilsen, 2015). Implementation science highlights assessment of barriers, matching intervention strategies to the identified barriers, use of theory, and end user engagement as important steps for more successful and rigorous knowledge translation intervention designs (Colquhoun et al., 2017; Powell et al., 2019). Theory of Planned Behavior (Ajzen, 1985,1991), an intrapersonal behavior theory; Social Cognitive Theory (SCT) (Bandura, 1986), an interpersonal behavior theory; and the Organizational Readiness for Change (ORC) (Weiner, 2009), an organizational-level implementation theory, will provide an understanding of the factors that influence implementation outcomes at the individual behavior change and the organizational culture/change levels. The action cycle of the Knowledge-to-Action (KTA) process framework (Graham et al., 2006) will provide structured guidance for the intervention implementation process.

Figure 4.1 provides a visual model that serves as a causal pathway outlining the anticipated mediating processes of the potential key intervention components leading to the desired outcome of improved research capacity at the individual and organizational levels. It also depicts how the underlying theory contributes to the functioning of the program. As shown in the left segment of the model, the action cycle of the KTA model (Graham et al., 2006) will guide the planning and designing of the proposed study. It outlines a process for knowledge application, wherein assessment of barriers and facilitators for knowledge use, involvement of stakeholders, and tailoring knowledge to

the needs of people who are going to use it, is crucial (Graham et al., 2006). The

identified problem is the limited use of research evidence in practice and the selected

knowledge relevant to the problem is knowing how to locate and understand research

evidence and to use the findings appropriately in the practice context. The stakeholders

will discuss research evidence topics that are most applicable to their school-based

practice, in view of the wide variety of student needs, educational diagnoses and grade

levels, and also brainstorm ways to adapt the knowledge to their particular practice

context. An assessment of barriers and facilitators will provide an understanding of the

issues surrounding the Sb-OTPs, the knowledge to be adopted and the ARS context to

guide the selection of intervention strategies that best fit the practitioner and the

organizational contexts. Once the tailored intervention strategies are in place, the

usefulness of the strategies and any potential concerns that may negatively impact the

knowledge uptake process will be monitored and necessary adjustments to address newly

identified barriers will be made to the plan. Monitoring helps to tackle not only the issues

related to potential adopters' knowledge, attitudes, skills, or habits, which can influence

uptake of knowledge in the early stages, but also address issues related to lack of change

in desired knowledge use, such as knowledge adopter's lack of interest or intention to use

the knowledge (Graham et al., 2006). Next, qualitative and quantitative measures will be

used to evaluate the project outcomes at the individual and organizational levels. Based

on Graham et al. 's (2006) definition of knowledge use, changes in the conceptual use of

knowledge (change in the levels of knowledge, understanding, or attitudes), and changes

in instrumental use of knowledge (changes in behavior patterns or habits in practice) will
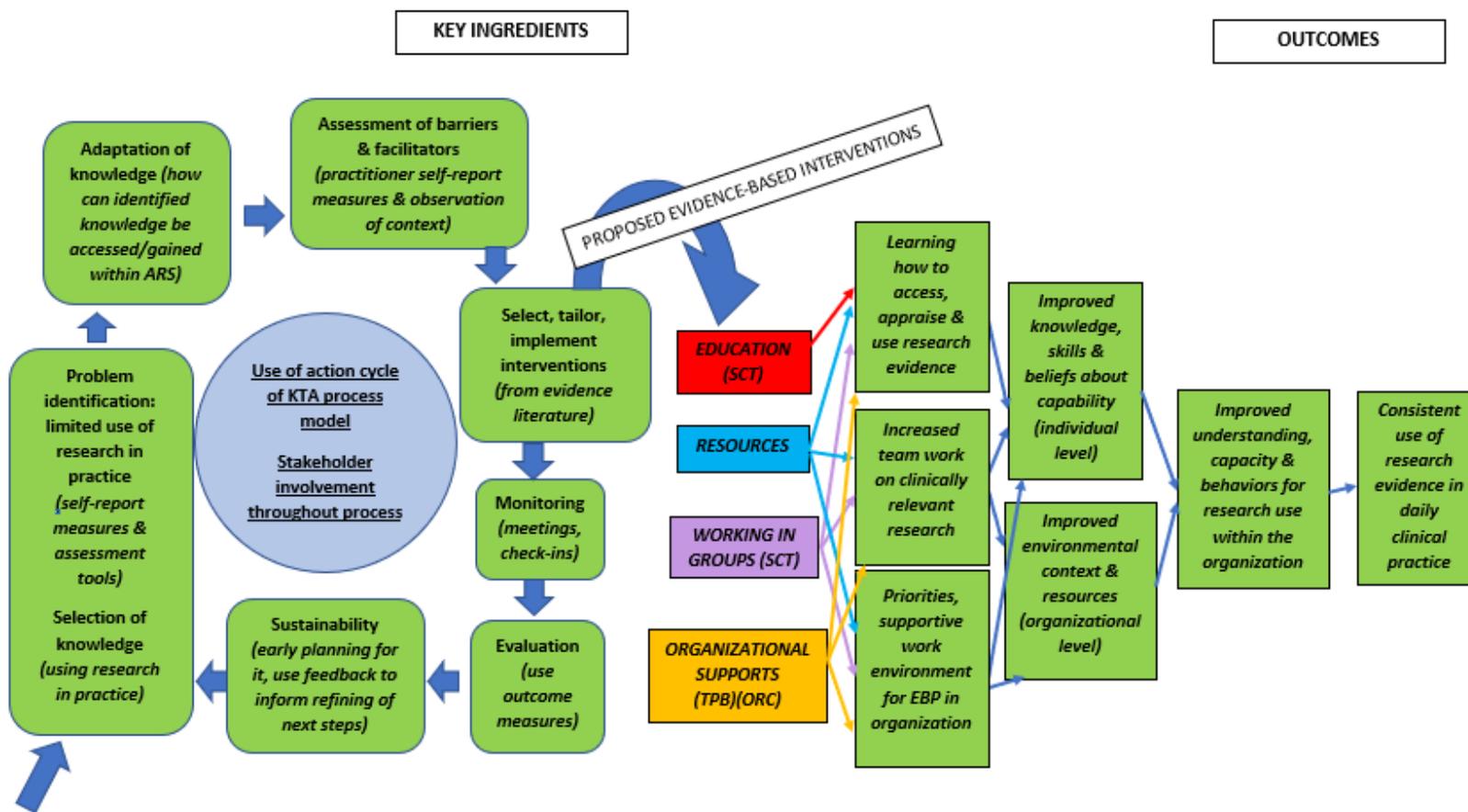
be measured. Finally, sustainability of the project will be ensured by this cyclical mechanism of action - assess sustainability barriers, modify interventions based on feedback, monitor, and evaluate.

The middle segment of the model lists the evidence-based proposed intervention components that are likely to provide better implementation success based available literature. The final intervention components will depend on barrier and facilitator assessment results and the stakeholder consensus. Social Cognitive Theory (SCT) (Bandura, 1986) principles will guide the drafting of the teaching plans, methods, and teaching-learning experiences in the education and working in groups intervention components. In SCT, learners are viewed as generative, creative, and reflective minds that engages in a transactional relationship with the social environment. They learn from observing the actions of a role model in society and reproduces the behavior based on past experiences and the reinforcement received from the behavior. Based on the SCT (Bandura, 1986) principles of social learning, observational learning from peer models, and positive social reinforcement, the education process will include methods including flipped classroom model, gamification, use of online tools, small group discussions, and peer coaching. In the flipped classroom model, students engage in activities and discussions with their peers and learn by observing the actions of other students and how their peers get praised, which they use for their own learning, with the educator acting as a guide or coach (Western Governors University, 2020). Putting learners in control of the discussion is an effective way to get them to pay attention for better observational learning (Happ, 2016). Gamification and simulations allow learners to observe a peer win

a game or succeed in a simulation, and then imitate the behavior, while making the learning material novel, fun, competitive, and interactive. Peer coaching is also an effective way for students to connect, help and learn from each other (Western Governors University, 2020). Social media and technology tools provide useful resources like Padlet©, YouTube© how-to videos etc. for creating collaborative educational material for social learning especially for the young generation of future leaders (Happ, 2016; Western Governors University, 2020). These tools engage a variety of learning styles in amplified temporary multi-sensory experiences, thus enhancing the cognitive processes of attention, motivation and memory through a social learning context (Cilliers, 2021; Deaton, 2015). All these methods are also consistent with cognitive science principles (Yee & Boyd, 2018), useful for effective student learning and long-term retention. The intrapersonal constructs of normative beliefs and perceived behavioral control as outlined in Theory of Planned Behavior (Ajzen, 1985, 1991, 2011) will be addressed through the intervention components. The Sb-OTPs will get social approval (norms) from their peers and the organization and will develop a favorable perception about their capabilities for carrying out EBP (perceived behavioral control) when they engage in group-based projects and receive consistent encouraging messages and resources for EBP from the organization. This will lead to their improved behavioral intention to carry out EBP.

Figure 4.1

Visual model of the causal pathway of the proposed intervention

In addition to the individual practitioner level, the proposed intervention components will also address determinants at the broader organizational context. The theory of Organizational Readiness for Change (ORC) (Weiner, 2009) proposes that when the collective commitment and belief in the collective capability to bring about the change is high, the organizational readiness for change is high leading to more effective implementation. Given the essential function of these organizational-level constructs, the intervention will facilitate the collective commitment and collective efficacy of the Sb-OTPs. With increased knowledge and skills, ongoing support and resources, such as access to databases and protected time for activities, opportunities for group information learning and sharing, and clear communication of processes to bring about the desired change, the Sb-OTPs will confidently accept that they have the resources and capacity to collectively bring about the change in the organization.

Moving ahead in the causal pathway, the final segment of the model illustrates how the intervention components implemented in the cyclical mechanism of action will lead to improved practitioner access and understanding of research use, team collaboration/learning and peer support, and a positive organizational environment for EBP. Together, this improvement in knowledge, skills, and belief about capability at the practitioner level, along with the collaborative and resourceful environment at the organizational level, will lead to improved capacity and behaviors for research use within the organization. In turn, this will mediate the consistent use of research evidence in practice by the Sb-OTPs, the ultimate desired outcome of this knowledge translation study.

Stakeholders and program practice scenario

The most important stakeholders are the team of school-based occupational therapy Sb-OTPs at ARS who provide therapy for children in the school districts and the clinical mentor/manager for this team at ARS. Not only are they the consumers in the program, but they will also be partaking in the development of the program. They stand to gain the necessary practitioner and/or managerial skills and organizational support to be evidence-based Sb-OTPs/leaders providing high-quality and credible therapy services. The ARS director, the employer, is also a primary stakeholder as the main investor or payor. From an employer perspective, nurturing a positive EBP culture within the company will potentially yield numerous business benefits. These benefits could include not only improved employee (practitioner) engagement and relationships, better service and work quality, and possible employee retention, but also improved customer (school districts) satisfaction and relationships. A better reputation in the therapy business and possible increased company expansion and revenue (more contracts with districts seeking quality services) could be viewed as long term benefits. The focus of the proposed study is on these internal stakeholders.

Stakeholders, external to the organization and possibly at a meso-level, are the students, their families, and the school districts who will be the recipients of the evidence-based therapy services provided by the Sb-OTPs at ARS. Other similar therapy companies or businesses providing school-based occupational therapy services or even school districts striving to implement such best practice programs for their employees would be other meso-level stakeholders. In addition, the academic institution/college that

partners with ARS to provide support and resources will be an important stakeholder.

ARS is a fieldwork placement site; the university, in turn, will benefit from obtaining

fieldwork educators at ARS who are committed to EBP. This will ensure that their

students will gain solid fieldwork experiences using best practice models and

interventions.

Finally, the big picture would involve macro level stakeholders such as the state

or national professional communities of occupational therapy that are working hard to

facilitate the overall vision of evidence-based practice.

Main aims or objectives

Through the proposed program, the author intends to

- build practitioner knowledge and skills for research use through education and

    ongoing support; and

- build the organization's capacity to support its Sb-OTPs ability to use research

    evidence in daily practice through the provision of EBP resources, opportunities

    to engage in EBP related activities, and communication of organizational

    expectations to encourage and prioritize EBP.

Full logic model

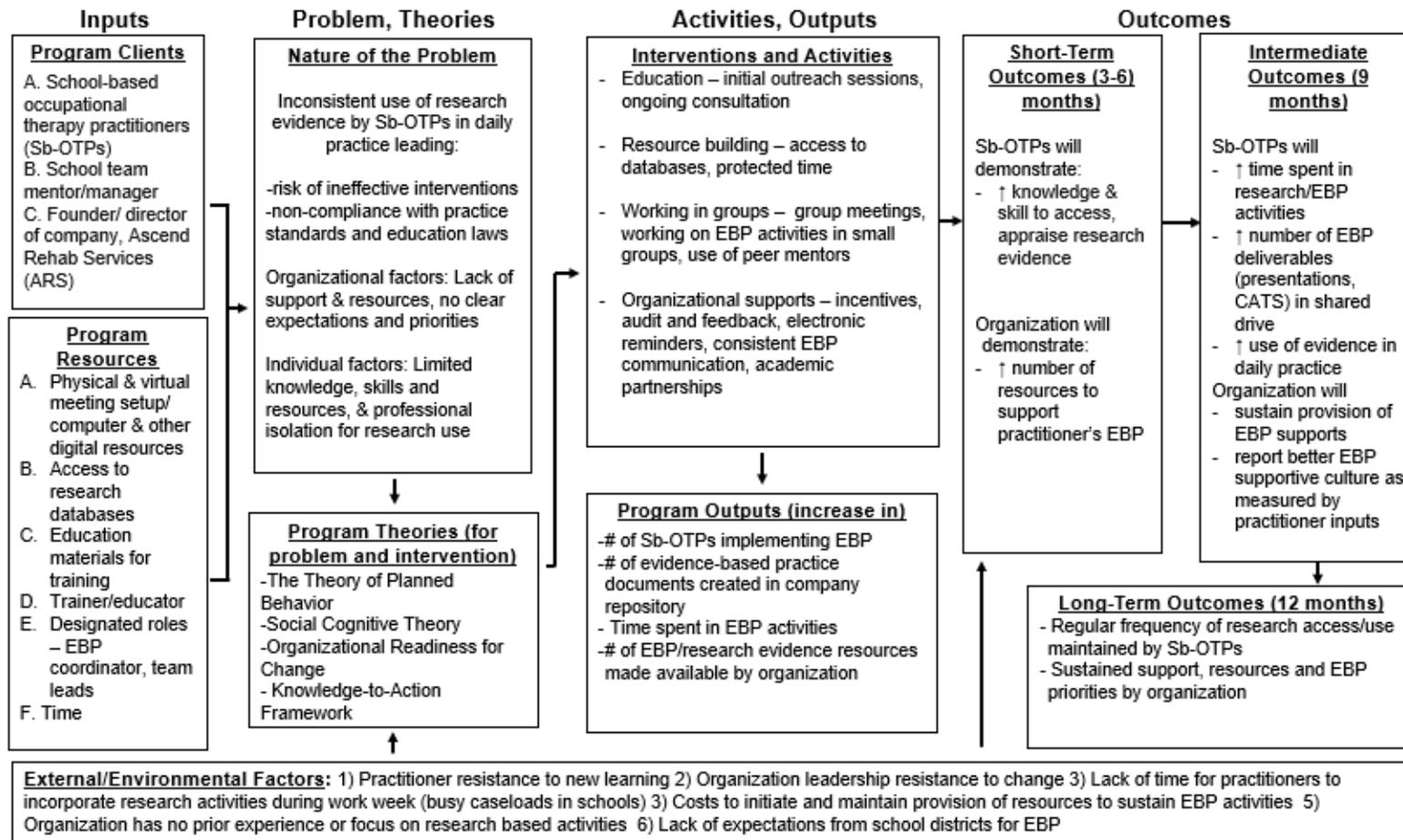The logic model, shown in figure 4.2, is a visual representation depicting the

relationship between proposed program components, anticipated program resources,

activities, and outcomes. The stakeholders will collaboratively enrich the model based on

their shared goals, methods and overall vision for the program. They will update it on an

ongoing basis to ensure program improvement and sustainability.

Figure 4.2

Full logic model for the proposed program

Program title: MOVING TOWARD EVIDENCE-BASED PRACTICE: A RESEARCH UTILIZATION CAPACITY BUILDING PROGRAM

Inputs	Problem, Theories	Activities, Outputs	Outcomes

Program Clients

A. School-based occupational therapy practitioners (Sb-OTPs)
B. School team mentor/manager
C. Founder/ director of company, Ascend Rehab Services (ARS)

Program Resources

A. Physical & virtual meeting setup/ computer & other digital resources
B. Access to research databases
C. Education materials for training
D. Trainer/educator
E. Designated roles – EBP coordinator, team leads
F. Time

Nature of the Problem

Inconsistent use of research evidence by Sb-OTPs in daily practice leading:

-risk of ineffective interventions
-non-compliance with practice standards and education laws

Organizational factors: Lack of support & resources, no clear expectations and priorities

Individual factors: Limited knowledge, skills and resources, & professional isolation for research use

Program Theories (for problem and intervention)

-The Theory of Planned Behavior
-Social Cognitive Theory
-Organizational Readiness for Change
- Knowledge-to-Action Framework

Interventions and Activities

- Education – initial outreach sessions, ongoing consultation

- Resource building – access to databases, protected time

- Working in groups – group meetings, working on EBP activities in small groups, use of peer mentors

- Organizational supports – incentives, audit and feedback, electronic reminders, consistent EBP communication, academic partnerships

Program Outputs (increase in)

-# of Sb-OTPs implementing EBP
-# of evidence-based practice documents created in company repository
- Time spent in EBP activities
-# of EBP/research evidence resources made available by organization

Short-Term Outcomes (3-6) months)

Sb-OTPs will demonstrate:
- ↑ knowledge & skill to access, appraise research evidence

Organization will demonstrate:
- ↑ number of resources to support practitioner's EBP

Intermediate Outcomes (9 months)

Sb-OTPs will
- ↑ time spent in research/EBP activities
- ↑ number of EBP deliverables (presentations, CATS) in shared drive
- ↑ use of evidence in daily practice
Organization will
- sustain provision of EBP supports
- report better EBP supportive culture as measured by practitioner inputs

Long-Term Outcomes (12 months)
- Regular frequency of research access/use maintained by Sb-OTPs
- Sustained support, resources and EBP priorities by organization

External/Environmental Factors: 1) Practitioner resistance to new learning 2) Organization leadership resistance to change 3) Lack of time for practitioners to incorporate research activities during work week (busy caseloads in schools) 3) Costs to initiate and maintain provision of resources to sustain EBP activities 5) Organization has no prior experience or focus on research based activities 6) Lack of expectations from school districts for EBP

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Program Participants and Resources

The nineteen Sb-OTPs and new hires that will join the organization during the school year are intended participants and recipients of this implementation program. The clinical mentor for the Sb-OTP team at ARS is also a participant is the ARS director. ARS, as an organization, can be identified as a recipient of the program as it builds an EBP supportive organizational culture as result of the intervention.

Based on a convenience sampling method, all ARS Sb-OTPs (licensed occupational therapists and certified occupational therapy assistants) will be eligible for participation in the program. After an initial introductory email about the program, an audio-visual presentation either in an in-person or video-conference meeting will be conducted to provide them with an overview of the program. Informed consent will be obtained from the participants. Consent for video-recording live online sessions, especially for qualitative data collection purposes, will also be obtained from the participants. In the event that participants do not wish to participate in the study, they will still receive the intervention as part of the ARS mentorship but will not be required to provide any data for research. An in-person meeting will be arranged to outline the plan for the ARS director through an audio-visual presentation. An easy-to-understand executive summary highlighting key features of the program and other supporting documents will be shared with these stakeholders ahead of the meeting.

The author will be responsible for the overall project execution and operations. The Sb-OTPs, the clinical mentor for the Sb-OTP team (the author, in this case), and the ARS director are the stakeholders who will be collectively responsible for developing the

implementation plan. In addition, group lead roles will be assigned to occupational

therapists to assist with facilitation of the group EBP activities. A practitioner having at

least 3 years of school-based clinical experience, having some basic knowledge of

research skills, being a good team player and showing leadership traits would be a good

candidate for this role. An administration personnel will be designated to take care of the

initial technology set-up and maintenance as well as physical location set-up for the

program.

The main resources needed for the program are:

- Memberships for a secure and reliable video conferencing web platform such as
  Zoom© for live online meetings; game-based learning platform such as Kahoot©
  for setting up quizzes; an online teaching tool such as Padlet©; Google© suite apps
  like Gmail, Jamboard, Google survey and Google drive for email communication,
  research repository, visual aid for team discussion and data taking.

- In-person meeting set-up, including physical space such as conference or meeting
  room, set-up for audio-visual presentations such as digital projector with
  projection screen, basic note taking stationery such as pens and paper, printing
  facilities, light refreshments.

- Laptops or computers for the Sb-OTPs to participate in all the online
  communication and meetings.

- Strong internet connection and speed.

- Funding for American Occupational Therapy Association (AOTA) membership
  and other financial incentives proposed in the program.

- Time provided in the workday for Sb-OTPs to participate in the program.

- Sb-OTP access to research literature.

The author intends to build collaborative partnerships with local universities to obtain resources for the program implementation. In turn ARS will develop evidence-based practice fieldwork and/or doctoral capstone placement opportunities for the university students. Initial contact via email will be made with the academic fieldwork/capstone coordinators at the universities to draw their attention to the program, followed by an in-person visit to present a quick overview of the program. A two-page fact sheet with essential program details will be shared with the coordinator ahead of time.

Interventions and Activities

The steps in the action cycle of the KTA model will be the core features of the intervention program. Table 1 lists a proposed schedule of the sequence and timing of the implementation activities. To maintain consistent reporting of implementation strategies, the Expert Recommendations for Implementing Change (ERIC) discrete implementation strategy compilation and its categories are being used to guide the core definitions of the strategies (Powell et al., 2015; Waltz et al., 2015). The definitions of the strategies are outlined in Appendix A.

Table 1

Proposed schedule of implementation intervention

KTA phase	Intervention activities	Duration	Strategies based on ERIC terminology
1. Identify problem/ select the knowledge	Knowledge = knowledge needed by the SB-OTPs to access, understand and use research evidence in practice. The extent of gap in research utilization in practice identified in the SB-OTP team through qualitative and quantitative measures (pre-implementation assessment).	6 to 12 months	- Use advisory boards and workgroups (AB) - Involve executive board (SI)
2. Adapt the identified knowledge to local context	Stakeholders discuss research evidence topics on interest applicable to their school-based practice and brainstorm practical ways to adapt this knowledge to practice context. Activities to customize the knowledge to practice context initiated in the implementation phase through group learning.		- Use advisory boards and workgroups (SI) - Involve executive board (SI)
3. Assess barriers to knowledge use	Barriers and facilitators to implementation at the individual and organizational level assessed through focus groups/interviews/assessment measures with stakeholders. This phase may be an extension of phase one serving to be part of pre-implementation assessment.		- Assess for readiness and identify barriers and facilitators (EIS)
4. Select, tailor, implement interventions	(Selecting and tailoring) Stakeholders choose intervention components feasible for setting to construct a multifaceted intervention strategy for ARS. An implementation plan is developed in collaboration with stakeholders.		- Tailor strategies (ATC) - Use advisory boards and workgroup (SI) - Involve executive board (SI) - Develop a formal implementation blueprint (EIS) - Develop academic partnerships (SI)

KTA phase	Intervention activities	Duration	Strategies based on ERIC terminology
4. Select, tailor, implement interventions (contd.)	(Implementation) Implementation strategy is put into action. Proposed components of the strategy:	12 to 24 months	
	1. Education (approx. 2 to 3 months)		- Develop educational materials (TES) - Conduct educational outreach meetings (TES) - Make training dynamic (TES) - Provide ongoing consultation (TES)
	2. Resources (will be available in the implementation and ongoing)		
	3. Working in groups (stakeholders will decide the degree/level to which this component will be continued after the project) Adapting knowledge to context will occur in this phase through group learning activities.		- Create a learning collaborative (TES)
	4. Organizational supports (will be available in the implementation and ongoing)		- Remind clinicians (SC) - Alter incentive/allowance structures (FS)
5. Monitor knowledge use	Regular discussions with stakeholders to monitor implementation progress and concerns. Adjustments to plan made to ensure successful implementation.		- Purposefully re-examine the implementation (EIS) - Audit and provide feedback (EIS)

KTA phase	Intervention activities	Duration	Strategies based on ERIC terminology
6. Evaluate outcomes	Project outcomes measured using qualitative and quantitative measures (post-implementation assessment).	12 to 24 months (contd. from implementation)	- Use advisory boards and workgroup (SI) - Involve executive board (SI)
7. Sustain knowledge use	Iterative process of phases - new barriers post implementation assessed, intervened and monitored.	Ongoing (will be worked on, but not a focus of the study)	Will include combination or all of the strategies listed above

Note. ERIC = Expert Recommendations for Implementing Change Project (Powell et al., 2015; Waltz et al., 2015)

Categorization of strategies by Waltz et al., 2015:
EIS = Use evaluative and iterative strategies; TES Train and educate stakeholders; SC Support clinicians; ATC Adapt and tailor to context; SI Develop stakeholder interrelationships; FS Utilize financial strategies

The author will be responsible for the overall operation and coordination of the components in the intervention. All the stakeholders; i.e., Sb-OTPs, the clinical mentor for the Sb-OTP team at ARS, and ARS director, will be involved in developing the implementation plan. An assigned ARS administration personnel will assist with the digital technology set-up including obtaining memberships for different digital software or database access needed throughout the project, providing and assisting the Sb-OTPs access to this software, and maintaining ongoing subscription for the same. These personnel will also assist with the physical location preparation in case of in-person meetings. During the small-group EBP activity, each small group will have a designated group leader to act as facilitators for the group work activity. The leaders will report directly to the author. Beyond the project duration, the EBP activities determined by the stakeholders to be continued in the organization to sustain EBP will be managed by the

clinical mentor position. The author intends for EBP and its related activities to become a part of the existing Sb-OTP mentorship program with ongoing organizational support.

Based on evidence from literature on research utilization and the key elements of the action cycle from the KTA model, the final intervention components in the program will be determined based on the outcomes of barrier and facilitator assessment and the collaborative inputs of the stakeholders of the project. The following section outlines the anticipated key elements of the intervention, namely education, resources, working in groups, and organizational supports. Figure 4.3 provides a visual model of the four intervention components and lists the strategies in each component.

Figure 4.3

Program intervention model with the component strategies

Education

The education components will consist of initial *educational outreach sessions*, and *ongoing consultation* sessions.

The *educational outreach sessions* will consist of an introductory session to evidence-based practice and why it is important in occupational therapy and will proceed to focus mainly on building the Sb-OTPs' basic knowledge and skills in research literacy and application. Session topics will follow the sequence of the steps in the EBP cycle - formulate a question based on a clinical problem, identify the relevant evidence, evaluate the evidence, implement useful findings, and evaluate the outcomes (Brown, 2017). The author will be the primary educator preparing the educational materials and delivering these sessions. The educational material will be reviewed by an EBP expert such as a university faculty member, to ensure that the content is tailored appropriately to meet the goal of improving research literacy in Sb-OTPs for application of EBP in real-life situations. There will be an approximate number of six to eight sessions and the entire educational series is expected to be completed in two to three months. Depending on the Sb-OTPs' preference, the sessions will be delivered through either an all-online format or a combination of in-person and online meetings. Given the varied work locations and work schedules of the Sb-OTPs in different school districts in the San Francisco Bay Area, conducting these sessions primarily through a real-time video conferencing format is likely the most feasible delivery option. The education outreach experience will be based on the principles of SCT (Bandura, 1986), brain-based learning strategies (Willis, 2006; Yee & Boyd, 2018) outlined in cognitive science literature and evidence-based

literature (Brown et al., 2020; Griswold et al., 2017; Hew & Lo, 2018; Kim & Castelli, 2021; Liu et al., 2016; McCall et al., 2018; Murad et al., 2010) that supports blended learning and digital health education formats. The session structure will be based on the flipped classroom model wherein the author will provide pre-assigned materials for the Sb-OTPs to review at their own pace before the session. During the session, the author will facilitate peer collaboration and coaching and team-based problem solving by assigning questions or tasks to small groups. Online games and quizzes, a brain-based strategy to stimulate curiosity and motivation (Yee & Boyd, 2018), will be inserted in the sessions to help with retrieval and immediate feedback to learning; it will be a fun and motivating way to check the Sb-OTPs' progress. The sessions will use humor to create a positive emotional state that will direct information to the thinking brain and memory areas (Willis, 2006) and open-ended reflective questions to guide lessons which will help to associate meaning and context with content and to ignite interest (Yee & Boyd, 2018). The duration of each session will be between 35 to 45 minutes so that information is presented in small portions to allow time for processing (Fitzgerald & Jacobs, 2020) and to conveniently fit in the Sb-OTPs' work week. They will take place on a weekly or bi-monthly schedule, depending on group consensus. The same educational materials and session structure will be used for in person sessions. The Sb-OTPs will be involved in developing their learning goals. The methods for evaluation of learners' progress will include various digital tools such as short multiple choice question tests via a Google survey form, online quiz game scores, peer rated skills checklist for return demonstration, survey reviews, and other methods, depending on the session content. An example of a

teaching plan for a session on searching free articles (skill) and identifying the level of

evidence per the evidence hierarchy (knowledge) is provided in Appendix B.

Interactive online tools will be used for creating educational material, both pre-

assigned materials and in-session learning experiences. Some examples include —

Padlet® for sharing and storing pre-assigned material and session agenda; Kahoot®

(Kahoot, 2022), a game-based learning platform for games; Jamboard® (Google, 2022), a

digital interactive whiteboard for online group discussion and tasks; and You-Tube®

how-to videos for audio-visual instructional delivery. Short videos, quick tutorials, online

reading material, and easy-to-understand electronic handouts are some examples of the

pre-assigned materials which will require only up to 15 minutes of learning at a time. The

Padlet© is a real-time, collaborative, easy, and intuitive-for-use web-platform to share

materials, feedback, and reflections on virtual bulletin boards called padlets. It will be an

easy-to-access online spot for all the educational experiences of the project which the

team will have access to as part of ARS resources. An example of the pre-assigned

materials and the lesson plan for a "PICO question" session on Padlet© is provided in

Appendix C or can be viewed at https://padlet.com/angefern/d1vmwsisi4ei54dt

(Password: HP720).

The *ongoing consultation* sessions will be held by the author to provide

consultation tailored to the needs or questions that the Sb-OTPs may encounter during the

entire duration of the project. The consultation will be provided through online "office

hours" scheduled on a monthly or bimonthly basis or individual online meetings

scheduled on an as-needed basis or via email communication. The ongoing consultation

will also include the initial education for the newly hired Sb-OTPs as they join the company.

Resources

To support the Sb-OTPs with basic needs needed for research utilization in evidence-based practice, the author proposes that ARS provide the following essential resources as part of employee benefits package:

- Access to online research articles – Membership to the American Occupational Therapy Association provides free access to four separate occupational therapy journals. The author proposes that ARS provide contributions to paid AOTA memberships for the Sb-OTPs as one of the employee benefits.

- Protected time for research activities – The author proposes that ARS provide allotted time of one hour per week to the Sb-OTPs during work hours to carry out evidence-based or research utilization related activities. This would require ARS to include this matter in the work contracts with school districts so that workloads designated to the SB-OTPs -OTPs can accommodate this protected time.

Working in groups

After completion of the initial educational outreach sessions, the Sb-OTPs will engage in online small-group EBP activities in order to practice their newly acquired EBP skills, gain peer feedback and coaching through group problem-solving, and collectively create an online repository of research evidence that is adapted for school-based therapy practice. This collaborative team learning and communication aligns with SCT (Bandura, 1986) principles as the participants will motivate and teach each other in

an active learning process. They will also carry out the important step of adapting

knowledge to their practice context outlined in the KTA model (Graham et al., 2006).

Each group will choose a school-based topic relevant to their practice, such as best

practice for handwriting issues, recommended service delivery for students with

moderate to severe education needs, autism in preschooler, and prepare knowledge tools

or products, such as decision aids or practice guidelines or one-page evidence summaries

relevant for school-based practice. This will involve tasks of locating evidence,

appraising it, and creating a clear, concise, and user-friendly

document/presentation/handout on how the evidence informs school-based practice.

These products will be stored in an electronic folder in the current school-based

occupational therapy manual on ARS' shared Google drive for all Sb-OTPs to access at

any time.

The author and the Sb-OTs will decide on how practitioners will be grouped

together; those working in the same school district can choose the same group so that

they can meet in-person at their convenience. The frequency and duration of the groups,

resources needed, members' roles, documentation requirements, and other details needed

for smooth operations of the group will also be discussed jointly. The enablers for

communities of practice groups identified from research literature will be considered

while structuring these groups (Alary Gauvreau et al., 2019; Barbour et al., 2018; Barry

et al., 2017; Bazyk et al., 2015; Roberts, 2015). Smaller sized groups, mixed novice-

expert attendance, convenient and consistent schedule, management support for access

and attendance will provide a supportive structure for these groups. A strong facilitator,

professional etiquette, clearly defined expectations and plans and roles, and a safe

trusting environment will be ensured. Interest areas and topics will be decided by the

members. Each group will have a group lead who will coordinate the group operations

and will communicate with the author for support as needed. The online groups can occur

at least twice a month, at a time that is convenient for the members during their work day.

After a group has finished creating a tool or product, they will present it to the

entire Sb-OTP team in an online meeting facilitated by the author. During this meeting,

the author will encourage the team to reflect on the new knowledge, assess their own

actions and perceptions regarding how they may incorporate the evidence into their

practice. Reflective practice has been found to be an important facilitator to teaching and

applying evidence-based practice (Krueger et al., 2020). Attendance logs for the group

work and whole group meetings will be maintained to obtain professional development

unit (PDU) certificates from ARS.

Organizational supports

The following are proposed as ARS supports for Sb-OTPs' EBP:

1. Provide incentives

   - ARS will provide a certificate with professional development units for

     completion of the educational meetings and participation in EBP related

     activities that can be used for state license renewal in accordance with

     Section 4161(c) of Title 16, California Code of Regulations (CCR).

   - ARS will explore options for digital badging either from academic

     institutions or external agencies for employees engaging in EBP to display

on their online professional profiles showcasing their EBP skill set.

- ARS will provide minimal raises or stipends based on employees' EBP performance.

2. Remind clinicians – The author will send reminders via email at various time points to help Sb-OTPs to recall information and/or prompt them to engage in EBP activities.

3. Communicate a strong EBP message to the employees – ARS will provide clear communication to the Sb-OTPs encouraging EBP by

- selecting/hosting speakers/courses that provide EBP material for continuing professional education on school quarterly meeting days;

- including EBP in the overall vision of the company, reflected in messages on the company website and organization's newsletters to the employees;

- recognizing Sb-OTP team efforts and achievements toward EBP at ARS school quarterly meetings;

- facilitating EBP-thinking in the regular mentorship program provided to the Sb-OTPs by the clinical mentor through online meetings and in-person site visits.

4. Audit and feedback – Based on documentation from the initial educational outreach sessions, the group EBP activity and direct interactions with the stakeholders, the author will provide data/information as feedback to the stakeholders at regular intervals during the intervention and monitoring phases to monitor and modify strategies and address any new concerns.

5. Develop academic partnerships – ARS has established working relationships with local academic universities for fieldwork placements; some Sb-OTPs are fieldwork educators for level II students. ARS will explore the option of obtaining resources from these institutions such as training on research skills, providing library access, or providing digital badging. By assisting ARS Sb-OTPs in developing their EBP skills, the local universities will be assured of EBP-focused fieldwork placement opportunities for their students. This could also possibly be the beginning of future projects where researcher-clinician collaborations could generate new research.

Program Outputs and Outcomes

The proposed program is intended to produce changes that will support EBP at the individual and organizational levels. Increased individual capacity for research utilization in practice and an overall positive EBP culture in the organization are the goals of this program, which are precursors to the aim of being an evidence-based practitioner and ensuring improved client therapy outcomes.

The anticipated program outputs are:

- Increased number of Sb-OTPs participating in the EBP project,

- Increased number of Sb-OTPs using research in practice,

- Increased percentage of time on a weekly or monthly basis workload dedicated to EBP related activities,

- Increased number of EBP knowledge tools or products created by the Sb-OT team in the research repository, and

- Number of EBP/research evidence resources and supports provided by the organization.

The desired outcomes and the time frames within which these anticipated measurable changes are expected to occur are:

Short-term outcomes: 3 – 6 months post-implementation

- The Sb-OTPs will demonstrate an increase in knowledge and skill to access and appraise research evidence.

- The organization, ARS, will demonstrate an increase in number of resources provided to support practitioners' EBP.

Intermediate/long-term outcomes: 6 – 12 months post-implementation

- The Sb-OTPs will demonstrate increased time spent in research/EBP activities on a weekly/monthly basis.

- There will be an increase in the number of EBP deliverables created (presentations, evidence summaries etc.) by the Sb-OTPs in the research repository.

- There will be increase in the use of knowledge gained in daily practice by the Sb-OTPs.

- The organization, ARS, will sustain provision of EBP supports and resources.

- The organization, ARS, will develop a better EBP supportive culture as measured by practitioner inputs.

Beyond the project, the expected long-term outcomes would be sustained regular frequency of engagement in EBP activities by Sb-OTPs; sustained use of research in

practice by Sb-OTPs; and sustained support, resources and EBP priorities demonstrated by ARS.

Anticipated Barriers and Challenges

Consistent with Graham & Tetroe's (2007) proposed moderators that could impact knowledge use at each step of the translation process, the anticipated barriers in this program would relate to the target audience, organizational context and culture, and organizational resources and supports to facilitate uptake. At the practitioner level, prioritizing EBP activities with limited time and busy workloads will be burdensome for the SB-OTPs. Some of them may be resistant to change as they may be comfortable with their past tried and tested practice-informed approaches. At the organizational level, ARS' limited prior experience in research activity and the financial costs associated with the program could hinder or slow down the uptake. Furthermore, with lack of expectations or accountability for EBP from the school districts, ARS leadership may not prioritize EBP within the organization affecting buy-in for the program.

Adapting the knowledge to context, monitoring of implementation effectiveness, increasing absorptive capacity of the SB-OTPs, developing partnerships with academic institutions, creating a repository for research evidence, providing ongoing consultation to maintain uptake and transfer of knowledge to practice, engaging stakeholders, developing a repository, and using active team-based "learning by doing" activities in the education are some of the sustainment strategies that are planned early-on to help mitigate these anticipated obstacles. Protected time for research activities and short education sessions with a flipped classroom format that allows for convenient pacing of

learning will be carefully planned. Providing short bursts of knowledge at a time with ample time to practice skills in a motivating group context may also ease the time-management and new learning stress for the SB-OTPs. ARS has basic technological resources in place such as laptops and existing Zoom$^©$, Kahoot$^©$ and Google$^©$ accounts. The possibility of support from the academic institutions will also help with costs associated with the implementation. If needed, seeking grants for the implementation can be considered. The stakeholders will have to jointly develop out a sustainable plan.

Summary and Conclusions

The identified problem is the under-utilization of research evidence in clinical practice of SB-OTPs at a therapy organization, ARS, leading to obstacles in the implementation of EBP. Research highlights a complex mix of individual and organizational, as well as system and policy level factors associated with this problem. The proposed program, intervening at the individual and the organizational levels, is an evidence-based multifaceted intervention program based on sound theoretical frameworks. Involvement of all stakeholders, assessment of barriers to tailor implementation, and adaptation of knowledge to context are the core features of the program. Education, provision of resources, group learning activities, and provision of organization support are the main proposed intervention components that will be action-related, interactive, and adaptable in nature to accommodate the practitioner and organization needs. The overall goal of the proposed program is to build practitioner knowledge and skills for research use and to build the organization's capacity and a positive culture for EBP for its practitioners.

CHAPTER FIVE – Program Evaluation Research Plan

Program Scenario and Stakeholders

The proposed multifaceted intervention is a research capacity building program to promote the implementation of EBP by school-based occupational therapy practitioners (Sb-OTPs) at Ascend Rehab Services, Inc. (ARS) in Union City, CA. Through contracted work positions, Sb-OTPs at ARS provide occupational therapy services to students in school districts. The author is the clinical mentor for the Sb-OTP team at ARS. The intervention is focused on building the capacity of the Sb-OTPs to access and use available research in their daily practice, and of the organization to encourage and support practitioners' EBP.

The proposed components of the intervention program are education (initial outreach sessions and ongoing consultation), provision of resources (access to databases and protected time), working in groups (small group work to adapt available research for use in school-based practice), and provision of organizational supports (incentives, reminders to clinicians, audit and feedback, academic partnerships and consistent EBP communication). Based on the action cycle of the Knowledge-to-Action (KTA) framework (Graham et al., 2006), the core features of the intervention are involvement of all stakeholders, assessment of barriers to tailor the intervention, and adaptation of the knowledge for use to the practice context. This program will assist the practitioners and the organization to take a step toward reducing the research-to-practice gap in the field of occupational therapy, which will contribute to the overall goal of better client health outcomes.

Given the varied work locations and schedules of the Sb-OTPs in school districts in the San Francisco Bay Area, the educational sessions and working in group activities will occur primarily through a real-time video conference format. An in-person session will be held if and when schedules permit. The author will be responsible for all overall program management and coordination. The author will deliver the education component, which includes creating the educational material for, and delivering the educational outreach sessions to the Sb-OTPs, as well as the ongoing consultation. The program will explore the option of educational training support from local educational institutions, and if successful, a research knowledgeable person from the academic institution will assist with education. Occupational therapists within the Sb-OTP team will assume group lead roles to coordinate and facilitate the group activity component of the intervention. The ARS director, another important stakeholder in the program, will be involved in the planning and development of the program along with the Sb-OTP team. The resources and supports from the organization will be available through electronic access. An assigned administration personnel will assist with device and software technology set-up for the sessions as well as physical location preparation if in-person meetings are to occur.

The immediate users of the program evaluation research findings are the participating Sb-OTPs and the organization ARS as they will contribute to making decisions about shaping the future of the program within the organization. Program improvement and allocation of resources for maximum benefits will be the aim of this stakeholder group. Other interested users would be school districts, similar therapy

organizations, and the state occupational therapy organizations, as the research would

provide valuable data and serve as a prototype for evidence-based capacity building

programs in their contexts to promote best practices among the Sb-OTPs. The research

findings would provide these organizations with information on intervention components

and program design and plan that achieved individual and organizational capacity

outcomes, financial investments needed, and other such data to replicate a similar effort

in their setting. Program partners, such as the local educational institutions that may

provide resources to ARS, would also be interested in the findings to understand the

impact of resource use.

Vision

ARS lacks an existing culture favoring implementation of research in practice.

The current Sb-OTP mentorship program, formed by the author, provides guidance on

developing skills in adopting client-centeredness and practitioner clinical reasoning,

which are two parts of the EBP concept. However, the Sb-OTPs need to develop skills in

using best available research evidence, which is the third part of being an evidence-based

practitioner. Through the program research evaluation, the author aims to introduce and

evaluate the impact and feasibility of the intervention program in building practitioner

capacity and creating an organizational capacity culture that supports therapy services

that are backed by best evidence.

The short-term vision is to improve Sb-OTPs' EBP competency to provide

interventions in schools that are effective for student participation and compliant with the

professional practice standards and special education laws. As the clinical mentor for the

Sb-OTP team, the author's goal is to have this program continued as part of the school-based occupational therapy mentorship in the organization. By marketing the valuable benefit of providing Sb-OTPs with sound knowledge in EBP, another probable outcome would be an increase in the number of occupational therapy work contracts from school districts to the company, thus leading to team and organization growth and expansion.

The long-term vision would be to demonstrate the clinical and social value of this prototype to other contracting agencies and occupational therapy communities in the local area and at the state level, and to offer it as a continuing education course within the professional, education, and clinic owner/contracting agency business communities. Another long-term vision is to create strong researcher-practitioner collaborations with local academic institutions and researchers for rigorous research studies on need-based ideas that can be effectively implemented in practice by clinicians.

Engagement of Stakeholders

The key stakeholders of the program are the Sb-OTPs at ARS, their clinical mentor, and the ARS director. At this time, the author is the clinical mentor of the Sb-OTP team. Guided by the KTA framework, these stakeholders' engagement will start right from the initial planning process and continue throughout the life cycle of the program evaluation study. An administration personnel will assist with meeting logistics for both virtual and in-person meetings and set-up for access and membership for digital applications and web learning platforms.

The Sb-OTPs buy-in for the program will come from the motivation to meet professional learning needs and to gain skills to be an evidence-based practitioner staying

in compliance with professional standards of practice and education laws. They will achieve these outcomes at no monetary cost to them. However, the time required for engaging in the research activities will pose a barrier to full buy-in, given busy work schedules and potential burnout/fatigue from having to manage large caseloads in limited time. Connecting with them in whole group and small group sessions as appropriate throughout the program will allow the author to listen to their collective voices about their lived experiences and learn about the enablers and barriers for best practices they face in their school districts. Engaging them in every step of the process will ensure that the plan is relevant, paced, and feasible in terms of time and effort to keep them motivated. Besides gaining knowledge about the program outcomes and other impact that the program will have on the SB-OTP team, as a clinical mentor, the author is interested in seeing the impact of the program on actual behavior change; i.e., whether the SB-OTPs will use the new knowledge and to what extent to make real life decisions.

The organization ARS, also a consumer of the program, will benefit from positive practitioner collaborations, high-quality and credible service provision from its employees, and better customer satisfaction and relationships. ARS is also the main investor in the program to build a better EBP culture. Most of the funds will be provided by the organization. The outcomes and overall impact achieved, cost-effectiveness, and employee satisfaction will be information of interest to the director. The costs involved in sustaining such a program could be a potential barrier for this stakeholder; however, connections with the academic community could be a source of ongoing research support for the organization to sustain EBP. Based on the program evaluation results, the director

will make decisions on allocation of resources to maintain the outcomes and, thus whether to continue to invest in the program. Regular in-person meetings with the director would be ideal to engage her throughout in planning and monitoring progress. The director's buy-in is very likely, as she is very receptive to feedback from the clinical mentors and team leads to improve professional development and employee benefits within the organization.

Lastly, the findings and impact of the study would be of interest to the local academic universities that choose to partner with ARS to strengthen the organization's capacities to provide solid evidence-based practice fieldwork and/or capstone experiences for their level II fieldwork and doctoral capstone occupational therapy students. ARS has been a fieldwork placement for many years now with students being placed in school settings with ARS fieldwork educators. Based on the results, the universities can aid in program refinement and continue their offer to share training and resources with ARS. ARS' reputation as an EBP service provider could attract new graduates from these universities to seek employment opportunities in the organization. In-person meetings to establish initial relationships and to report research evaluation findings, with consistent feedback on progress being made via phone calls or emails would keep these stakeholders informed and engaged in the process.

Simplified Logic Model for Use with Stakeholders

The simplified logic model, in Figure 5.1, will serve as a visual layout of the program's resources, activities, and outcomes. This will offer the stakeholders an at-a-glance view of the basic flow of activities, their involvement along the course of the

program research and outcomes upon which the research is based.

Figure 5.1

Simplified logic model for the proposed program

Clients Resources	• Clients: School-based occupational therapy practitioners (Sb-OTPs), team mentor, organization's founder/director • Resources: Physical/virtual meeting set-up, digital resources, educational materials, educator, designated roles – group leads, EBP coordinator, time for EBP activities
Interventions Activities	• Education (educational outreach sessions and ongoing consultation) • Resources (access to research articles, protected time) • Working in groups on research based activities • Organization supports (incentives, audit and feedback, reminders, consistent EBP message, academic partnerships)
Program Outputs	• Number of Sb-OTPs implementing EBP • Number of EBP/research knowledge tools/products created by Sb-OTPs in research repository • Number of research evidence resources made available by the organization
Short-Term Outcomes	• In Sb-OTPs: Increased knowledge and skills to access and understand research evidence • In organization: Increased number of resources to support practitioners' EBP
Intermediate Outcomes	• In Sb-OTPS: Increase in time spent in research/EBP activities • In Sb-OTPs: Increase in the number of EBP deliverables/knowledge tools in the repository • In Sb-OTPS: Increase in use of research evidence in daily decision making • In organization: Sustained provision of EBP support
Long-Term Outcomes	• In Sb-OTPs: Regular frequency of research activities maintained • In Sb-OTPs: Regular use of research evidence in daily practice maintained • In organization: Sustained provision resources, support and priorities for EBP

Preliminary Exploration and Confirmatory Process

An in-person meeting will be scheduled first with the Sb-OTPs either on an individual basis or in small groups with those working in the same school district to share information, listen to feedback, and discuss the program with them. The meeting can be at a local coffee shop/eatery with internet availability near their school sites during a convenient time of the workday to eliminate practitioner travel time to the company's main office. Similarly, in-person meeting/s with the director will be held to start the process of sharing program objectives and getting buy-in from the organization. The feedback from the Sb-OTPs will be shared with the director; the administrative staff

member participating in the program execution who will also be invited to these meetings. An initial in-person meeting with university faculty will also be scheduled to share the program details and obtain buy-in from this valuable stakeholder.

Documents or handouts about the meeting agenda and easy-to-understand summaries of the information will be sent electronically for stakeholders to review ahead of time; paper copies will be made available at the meeting. Visual presentations using pictures or graphs as appropriate will be used to convey the information concisely and to hone in on the necessary facts and details of the activities, expected outcomes and the logistics of the program research.

The information presented at these meetings will include the simplified logic model of the program, professional documents and research articles from the occupational therapy organizations and regulatory boards and special education laws that support the use of therapy services backed by best available evidence, research articles on similar capacity building programs and from implementation science principles useful for knowledge translation programs in an easy-to-understand method. This will help the stakeholders get a clear understanding of the theoretical basis for the need, proposed activities, and outcomes of the program. Details about the research design, data collection methods and costs involved in creating and sustaining the program will be discussed.

Questions on how and why Sb-OTPs need to build time into their already busy schedules or why is it so important for the company to invest time and resources in the program are some of few main issues that will need discussion for stakeholder buy-in. The academic institutions would be interested in discussing the costs involved in sharing

their resources for the program, and the benefits obtained by their fieldwork students. Presenting facts and data will be the best way to gain consensus among stakeholders regarding the need for and details of the program. During the process of negotiation, the author will invite stakeholders to share their experiences and opinions; listen to their perspectives and values; and note down their feedback about resources, activities or logistics that they may perceive as unrealistic, inconsistent, or costly. The author will be open to suggestions that they may offer to resolve such issues to gain consensus on the research plan. Adjustments to the program based on their feedback will be conveyed via follow-up meetings with them. The follow-up meetings with the Sb-OTPs could involve larger groups or a whole school-based team meeting so that the open communication and problem solving fosters a feeling of team unity on the shared goals and outcomes. Care will be taken to ensure that these meetings are productive and respectful of people's time and busy schedules.

Program Evaluation Research Questions by Stakeholder Group

Table 2 lists some anticipated research questions regarding program outcomes and impact that will be important to each stakeholder group and the author.

Table 2

Important research questions from each stakeholder group

Stakeholder or Stakeholder Group	Types of Program Evaluation Research Questions
Researcher	**Quantitative questions**: To what extent did the program increase the Sb-OTPs' knowledge and skills to access and learn about research evidence for their school-based therapy practice? After the program implementation, are the Sb-OTPs spending more time in such research activities during their practice? To what extent are Sb-OTPs reporting use of research evidence in decision making at their practice? Has there been an increase in available knowledge tools or products for school-based practice in the repository? Have the resources for Sb-OTPs to support their inclusion of research evidence in clinical practice in the organization increased? **Qualitative questions**: What were the challenges faced by the Sb-OTPs? What worked well for the Sb-OTPs? How do the Sb-OTPs feel now that they have received education about research evidence, how to access it and how to use it? How would the Sb-OTPs describe the change in their confidence in their practice after participating in the program? How has the program impacted their ability to build team connections? How do the Sb-OTPs feel about continuing with the research activities? Describe how the organizational culture supports or hinders engagement in research activities/EBP? How does the organizational leadership feel about the program's effects?
Sb-OTPs	**Quantitative questions**: To what extent did the program increase my knowledge and skills about research evidence for school-based therapy practice? How much time am I spending on research activities during the work week? How has the workload changed during the week? Are the resources enough for me to sustain such activities? What changes am I seeing in my work as a result of participating in this program, regarding caseloads, referrals, occurrence of inclusive services and such other matters? **Qualitative questions**: How did I find the education sessions with regards to relevance and ease of understanding the content, and for the pace for my learning?

Stakeholder or Stakeholder Group	Types of Program Evaluation Research Questions
Sb-OTPs	**Qualitative questions:** (contd.) What intervention strategies worked well for me in the program? And what did not? How did participation in the program affect my motivation to continue engaging in research/EBP activities? How will this influence my practice in the school districts? How did my confidence in practice change after participating in the program? What was my experience like in taking this on in my busy work schedule? How does the organization view this program and its use for me in my practice?
Organization	**Quantitative questions**: To what extent did the program show desired change in the dependent variables of interest? Is the delivery of the program too costly to sustain? What were the rates of program withdrawal? How many SB-OTPs reported increased stress due to these additional research activities during work time? How many SB-OTPs have reported positive comments about the program? Has there been an increase in the applicants for the organization's occupational therapy job postings after the program has been marketed? **Qualitative questions**: Did the content of the program match organizational goals? What was the experience of the Sb-OTPs during and after program participation? What has been their feedback in terms of concerns or positives? What is the worth in investing resources to sustain this program as part of the organizational mentorship? How is the organization doing with sending a supportive message to Sb-OTPs about including research evidence in practice?
Academic institution	**Quantitative questions**: To what extent did the program show desired change in the dependent variables of interest? How many fieldwork/doctoral capstone students can be placed in ARS now that it has developed a strong EBP focus? How much does it cost to invest in this program? How many fieldwork students have reported positive comments about the EBP experience at ARS? **Qualitative questions**: What is our students' feedback about their fieldwork/capstone experiences? What is the value in investing our resources to sustain this partnership at ARS?

Research Design and Methods

      The study will use a mixed-methods design. While the quantitative data measures the effect of the intervention on the outcomes and establishes preliminary causation between program activities and outcomes, the qualitative data will help to understand the experiences of the Sb-OTPs' use of the intervention components. The qualitative data will guide analysis, interpret the study findings, and refine the intervention. A concurrent transformative design type of mixed-methods will be appropriate for this study which means that qualitative and quantitative data will be collected concurrently with the overall purpose to promote change toward EBP in the organization. So, the mixed design study will be a quantitative pre-post implementation test design with a deductive theoretical drive and a qualitative method used simultaneously.

      The project will follow the action cycle of the KTA process framework (Graham et al., 2006). The pre-implementation phase is expected to last for 6 to 12 months. This phase will include the KTA steps of identifying the problem, discussing adaptation of knowledge to context, assessment of barriers to knowledge use, and selecting and tailoring interventions. The pre-implementation test will be conducted in this phase to gather quantitative and qualitative data on Sb-OTPs' EBP knowledge and skills, time spent on research/EBP activities, perceived barriers to research use, and actual use of research evidence in daily clinical practice. The implementation phase is expected to last for 12 to 24 months. This phase will include the KTA steps of intervention implementation and monitoring. The post-implementation test, consisting of a repeat administration of the assessments, will be conducted in the evaluation of outcomes step

of the KTA cycle, toward the end of the implementation phase. The intervention program

will be developed by all stakeholders and is expected to contain components of

education, provision of resources, working in groups and organizational supports. The

project will be continually monitored, adapted as needed and continued after the end of

the project as part of the mentorship program for the Sb-OTPs at ARS.

Qualitative methods

Semi-structured interviews and focus-group interviews will be conducted to

gather qualitative data. Currently there are nineteen Sb-OTPs on the school-based team

with the organization looking to hire more practitioners to fill up available school-based

positions for the upcoming academic year; willing practitioners who submit informed

signed consent will be included in the data collection process of the study. The ARS

director will also be a part of the data collection. The qualitative data will be used for

interpretation of study findings and to understand the participants' experiences in the pre-

and post-implementation phases as well for monitoring purposes to continue shaping the

intervention program as needed.

The initial data collection will occur during the pre-implementation phase at the

first KTA phase of identifying the problem through semi-structured interviews. The

interview questions for the Sb-OTPs will focus on obtaining information on their

perception of EBP, their values and goals about EBP, their perceived barriers that will

impact the program, and ideas for potential intervention strategies or resources for the

program. The questions for the ARS director will seek information on her perceptions of

the program and its need, resources that can be made available for this program, and

organizational barriers and potential solutions. This qualitative data collection will be repeated in the post-implementation phase at the KTA phase of outcomes evaluation through semi-structured interviews. Both, the pre-implementation and post-implementation qualitative data collection will be accompanied with quantitative data collection taken simultaneously. An interview guide with a list of sample interview questions for the Sb-OTPs and the ARS director is provided in appendix D.

Focus group interviews will be conducted as part of a process evaluation after the intervention program has been implemented. It will take place during the monitoring phase of the KTA cycle, approximately after the first month of implementation followed by every one or two months during the implementation phase. The process evaluation data will gain participant information on what is and what is not working well with program implementation, any new challenges and solutions, how the team is managing the additional work demand during the week, and other relevant information. This information will help to adjust the program throughout the study and is an essential part of the KTA process framework.

Interviews and focus groups will be conducted by the author and a designated administrative staff member from ARS through video conference or in-person meetings at a convenient time and location near the Sb-OTPs' workplace or at the main ARS office in Union City, CA. The recording capability on the video conferencing platform, for example, Zoom© or Skype© will be used to record the interviews or group sessions. The author will add any observations from the interview soon after the session is completed. The author will also make note of any changes in the context that may occur during the

study which might affect the data collection process, for example, a practitioner's work site moves from one school district to another, which may bring about changes in workload or new district guidelines, which may then impact that practitioner's data responses. The author will prepare notetaking/data collection forms to record verbal and non-verbal responses during the interviews and the focus groups. The notes will be reviewed and cross checked soon after the session is completed to ensure clarity. A summary of the notes will be emailed to the interviewee to confirm accuracy and credibility of the data/notes.

Quantitative methods

Self-report measures, a performance measure, a numerical rating survey and a time log will be used to gather quantitative data for the study. SB-OTPs who submit informed signed consent will be included in the data collection process of the study. The quantitative data will provide numerical data to help establish preliminary correlations between the program activities and the outcomes.

Quantitative data collection will occur as part of the pre-implementation and post-implementation test. The pre-implementation test will be scheduled at the first KTA phase of identifying the problem. The same measures to obtain short-term outcomes, measured 3 to 6 months post implementation. The intermediate and long-term outcomes will be measured 6 to 9 months and 9 to 12 months post implementation.

The independent variable is the research capacity-building intervention program. The short-term dependent variables that will be measured are Sb-OTPs' knowledge and skills on research evidence and the number of resources provided by the organization to

support the practitioners' EBP. The intermediate-term dependent variables that will be measured are time spent by Sb-OTPs in research utilization activities on monthly basis, the number of EBP deliverables created or shared in the research repository, and Sb-OTP report of use of knowledge gained in daily practice. The long-term dependent variables will measure the sustained use of research evidence in practice by Sb-OTPs, sustained engagement in EBP activities by Sb-OTPs, and sustained provision of resources by the organization.

The Adapted Fresno Test of Competence in Evidence-Based Practice (McCluskey & Bishop, 2009), will be used to measure the change in Sb-OTPs' knowledge and skills in EBP. The seven-item Adapted Fresno Test (AFT), designed to measure change in EBP competence of occupational therapy practitioners after EBP training, tests participants' skills of writing PICO (population, intervention, comparison, and outcome) clinical questions, carrying out effective literature search strategies, and critical appraisal of published research. It tests knowledge on hierarchy of evidence, biases in study designs, and other sources of evidence (McCluskey & Bishop, 2009). The AFT takes approximately 20 minutes to complete, has good to excellent interrater reliability for individual AFT subtests and excellent for total scores, acceptable internal consistency (Cronbach's $\propto = 0.74$), and is responsive to change in novice learners with low scores. Content and construct validity and internal consistency have previously been established for the original Fresno Test (Ramos, 2003).

To measure a change in the use of EBP, the author plans to use the Evidence-Based practice Attitude and utilization SurvEy (EBASE) (Leach & Gillham, 2008). It

evaluates the skill, attitude and use of EBP and can be easily adapted for administration to any clinician, including doctors, nurses, and allied health professionals (Leach & Gilliam, 2008). Educators can use EBASE to measure the skills, attitudes and use of EBP in students at various time points in their educational programs, to tailor course curriculum to meet learner needs, to determine effectiveness of EBP educational programs, and to tailor knowledge translation strategies to improve EBP (Terhorst et al., 2016). The EBASE is a six-page, 84-item, pencil and paper self-administered questionnaire. For ease in readability and data analysis, the EBASE is organized into seven parts, each one addressing a different construct. Part A explores practitioner opinion of EBP using a five-point Likert scale. Part B is related to practitioner skills in EBP using a five-point scale ranging from poor to advanced skills. Part C looks at the level of practitioner training in five EBP-related areas (evidence-based clinical practice, applying evidence to practice, conducting clinical research, conducting systematic reviews or meta-analysis and critical analysis), over eight different listed levels of training. Part D explores EBP use by practitioners using a five-point scale ranging from zero to 16-plus episodes, for a total of seven items. It also asks participants their percentage of practice based on clinical research, using six categorical response options ranging from zero to 100%, and their ranking of 11 sources of information based on how much they influence their clinical decision making. Part E examines the perceived EBP barriers including lack of time/resources/evidence, insufficient skills, lack of incentive/industry support, using a four-point scale ranging from 'not a barrier' to 'major barrier.' Part F explores practitioner preference about a proposed EBP strategy; e.g.,

access to resources such as databases, education tools, and relevant critically appraised

topics, using a four-point scale ranging from '*not useful*' to '*very useful*.' Lastly, Part G,

collects participant demographic details namely, age, gender, race, level of education,

focus of primary practice, clinical role, and setting (Leach & Gillham, 2008). A rubric for

calculating EBASE attitude, skill and the use sub-scores is provided with detailed and

easy to follow scoring instructions with score interpretations. It has good internal

consistency (Cronbach's $\propto = 0.84$), acceptable test–retest reliability (ICC = 0.578–0.986)

(Leach & Gillham, 2008), good content validity (CVI = 0.899), adequate convergent

validity testing demonstrated in comparison with the Evidence Based Practice

Questionnaire (EBPQ) (Leach & Gillham, 2008), and acceptable internal consistency

reliability estimates for all subscales (Terhorst et al., 2016). It is available for download

as a Word document for a paper-pencil administration. A Google search also yields an

online editable document of the EBASE on www.pdffiller.com and

www.uslegalforms.com. It is available for use at no cost to the user. The test provides

clear instructions for use. It is well-structured, easy to navigate and quick to complete,

requiring a mean time of 11.1 minutes to complete (Leach & Gillham, 2008). No

additional user training is needed. In addition to EBP use, the EBASE also captures

information on facilitators and barriers of EBP uptake, prior EBP training, and attitudes

toward EBP. This information is useful to obtain because the practitioners' perceived

barriers and their attitudes towards EBP will influence their EBP behavior and final EBP

outcomes.

     The Organizational Culture and Readiness for System-wide Integration of

Evidence-based Practice (OCRSIEP) scale (Melnyk et al., 2010) will be used to assess

the organizational culture and readiness for EBP. It was developed for use with nurses

and will be adapted with permission for use with occupational therapy practitioners in

this study. It is a 19-item scale measuring the degree to which organizational culture

influences system-wide implementation of EBP and the overall perceived readiness to

integrate EBP compared to 6 months ago. Respondents indicate their agreement with

each item on a 5-point Likert scale with 1 = none at all and 5 = very much. Items are

summed to create a total score ranging from 25 to 125. Higher scores reflect greater

organizational readiness for EBP. The scale has established face and content validity,

with internal consistency reliabilities of >0.85 (Melnyk et al., 2010).

An electronic time log created by the author will be maintained by each Sb-OTP

to record the time in minutes they spend on a monthly basis on EBP activities. The log

will list a description of the EBP activities such as literature search, writing PICO

questions, reading and/or appraising research articles, preparing easy-to-understand

summaries for the repository and other tasks. A numerical rating survey to learn about the

participants' perceived usefulness of each implementation strategy in the program will be

administered once at the post-implementation test period. An initial draft of the numerical

rating survey is provided in Appendix E. This survey will include a list of the

intervention components included in the program to be rated from a range of "*not very*

useful" to "*very useful*." The number of deliverables created by the Sb-OTPs will be a

simple numerical count of these items in the ARS repository for research evidence. A

checklist of the number of resources made available by ARS for its Sb-OTPs will be

created to keep a track of organizational resources that have been successfully provided to the Sb-OTPs during the time of the study.

The Sb-OTPs will complete the AFT and the EBASE in the pre- and post-implementation testing period. The OCRSIEP will be completed by the Sb-OTPs as well as the ARS director in the pre- and post-implementation testing period. AFT will be administered in-person at ARS' main office location or at a location closer to the Sb-OTPs work sites. The EBASE and OCRSIEP will be completed electronically by the Sb-OTPs. The OCRSIEP will be completed electronically by the ARS director as well. All the pre- and post-test data will be collected by the author. The factors that may influence outcomes are years of clinical work experience and academic qualifications of the occupational therapy Sb-OTPs. Therefore, the demographic information on the Sb-OTPs obtained in the EBASE will be used for descriptive analysis.

Data analysis

Confidentiality

Confidentiality will be maintained in accordance with Institutional Review Board (IRB) regulations. Participants will be required to sign an informed consent form to participate in the program. Each participant will be assigned a code designation consisting of letters and numbers which will be used throughout the program. A spreadsheet that connects each person with his or her code will be kept in a secure passcode protected folder on the author's computer. Any transcripts or electronic copies of audio recordings will be identified by the unique code. All data on paper will be stored in a locked file cabinet at ARS' main office. All electronic data will be password

protected and stored on a secure server that is encrypted and password protected. Data will be shared only for analysis purposes. Presentations or data reports and analyses will not include participants' names or other identifiable information. Qualtrics, a secure web-based software, will be considered for surveys response collection and storage.

Qualitative Data Management and Analysis

The MAXQDA (2021) by VERBI GmBh software for qualitative and mixed-methods research will be considered for the formative/qualitative data analysis. MAXQDA enables audio and video file transcription. The analytic approaches that will be considered are a qualitative content analysis involving coding of the meaningful data, a narrative analysis to listen to the participants' stories and lived experiences and thematic analysis to find out the participants' views and opinions. Qualitative data will be stored in clearly labeled electronic passcode protected folders for example, interview tracking, transcriptions, data analysis, raw data files etc. These files will be imported into the qualitative analysis software package. The notes taken during the semi-structured and focus group interviews will be reviewed and cross checked soon after the session completion to ensure clarity in data collection. A summary of the notes will be emailed to the interviewee to confirm accuracy and credibility of the data.

Summative Data Management and Analysis

The MAXQDA allows for mixed-methods data collection and can be considered for quantitative data analysis. The IBM Statistical Package for Social Sciences (SPSS) (SPSS Inc., Chicago, IL, USA) would be another option for data analysis. The participant demographic data will be analyzed descriptively. The quantitative data will use

correlational analysis to obtain a preliminary indication of the effect of the intervention

program. A unique identifier will be used to match pre- and post-questionnaires for each

participant. Thus, the descriptive and inferential data analysis will be completed.

Anticipated strengths and limitations

The mixed-methods design adopted in the study will provide not only data on

outcomes but also a rich understanding of the practitioners' experiences and is

appropriate to answer the research question. The use of sound theoretical frameworks and

involvement of all stakeholders in the program are other identified strengths of the study.

The self-report measures chosen for the data collection have acceptable established

validity and reliability. Additionally, the ARS director is open to implementing new ideas

to help Sb-OTPs provide quality care. Most of the occupational therapy Sb-OTPs have

been in school-based practice for more than two years, hence they have had time to

develop the clinical reasoning skills and daily job functions for school-based practice and

probably would be more open to taking on the task of furthering their competency by

learning about research utilization.

The pre-post design and a small sample size has a disadvantage of having

difficulty establishing cause-effect relationships, a threat to internal validity. The

anticipated sources of biases in the study are respondent bias through the self-report

measures, interviewer bias and researcher bias. The author who is the clinical mentor for

the Sb-OTPs at ARS may influence responses or actions from the team. Convenience

sampling used will limit the generalizability of the study findings. It is also possible that

the more experienced Sb-OTPs may be more comfortable with traditional practices that

have worked for them over the years rather than learning research-based practices. Sb-OTPs may perceive this as an additional burden to their workloads and may struggle to make time. Also, the organization does not have any prior culture or experience in using research in practice which may make the overall project seem tedious. Typically, ARS has employee turnover at the end of the academic year and new hires employed at any time during the academic year which will impact data collection. Another external factor to consider is the culture and leadership opinions of the different school districts that the Sb-OTPs work at, which may affect the Sb-OTPs' participation.

CHAPTER SIX – Dissemination Plan

Program description

According to the American Occupational Therapy Association's (AOTA) Standards of Practice guidelines, occupational therapy practitioners are required to acquire and maintain knowledge on evidence-based practice (EBP) and apply it appropriately in occupational therapy service delivery to clients in their work settings (AOTA, 2021). Additionally, EBP is a necessity outlined by education laws such as the Individuals With Disabilities Education Improvement Act (IDEIA) of 2004 (PL. 108–446) and the Every Student Succeeds Act (ESSA) of 2015 (PL. 114 - 95). Yet recent research shows that occupational therapy practitioners in the United States are lagging behind in using external research evidence in clinical decision making for service delivery (Krueger et al., 2020; Myers, 2019a, 2019b; Wang et al., 2019). To address this research-practice gap in the profession, the proposed research utilization capacity-building program is a multifaceted intervention targeting the individual and organizational capacities for increasing EBP implementation among school-based occupational therapy practitioners (Sb-OTPs) in a contracting company, Ascend Rehab Services (ARS), in Union City, CA. This evidence-based program based on strong theoretical foundations and developed by the combined participation of all stakeholders consists of four key components: education, provision of resources, working in groups, and organizational supports. The program aims to increase Sb-OTPs' research literacy skills to locate, appraise, and use best research evidence in daily practice in their school settings. At the same time, the program builds the organization's resources, culture, and

overall vision to support its Sb-OTPs' capacity to deliver EBP to clients. This chapter

outlines the plan for disseminating the results of the research program in the study with

an overall aim to assist occupational therapy practitioners become more skilled EBP

providers.

Dissemination goals

The intervention program is designed to follow the steps of the action cycle in the

Knowledge-to-Action (KTA) process framework (Graham et al., 2006). After the post-

implementation assessment conducted in the evaluation phase, efforts for dissemination

of results will commence. This section will first describe the initial dissemination efforts

of research findings to the stakeholders of the program during its implementation at ARS,

followed by broader dissemination efforts that will reach out to providers and

organizations beyond ARS.

Soon after the program results are obtained, an executive summary providing

details on the evaluation design, results, conclusion, and discussion will be shared

electronically with the main participants, the ARS Sb-OTPs. It will provide important

documentation needed to shape and finalize the structure of the program for its future

use. Those who are interested in deeper knowledge about the context and details of the

methodology will be provided with a technical report. For these formal reports, the use of

an easy-to-follow layout with text enhancements such as outlines; bold text; lists; and

graphics, such as tables, will assist the practitioners to analyze and interpret the data. An

oral presentation, either in-person or via a synchronous video conference session with a

visual slideshow tool and a question-and-answer opportunity will also be conducted for

the Sb-OTPs to discuss the findings and to engage them in a discussion on program improvement.

The ARS director will be provided with an electronic color copy of a two-page executive summary with an easy-to-follow layout and graphics highlighting the most important parts of the research methodology, findings, and recommendations. In addition, an in-person oral presentation with a visual slideshow highlighting key facts and recommendations will help Ascend Rehab's leadership to get a quick overview of the concentrated information. The emphasis will be on the key data points highlighting the program's worth from an organizational context.

As part of the broader dissemination efforts that will reach practitioners and organizations outside of ARS, listed below are the long term and short-term dissemination goals.

Long term goal – The EBP capacity building program will contribute to improving the capacity of not only individual practitioners to deliver EBP during their service delivery but also that of organizations or workplaces providing school-based occupational therapy to support and provide a positive culture for EBP for their employed OTPs.

Short term goal – The program will be disseminated as a research paper in a national occupational therapy publication and in a formal presentation at a state or national occupational therapy conference within 1 to 2 years after implementation to add to the available occupational therapy research literature on effective EBP knowledge translation projects.

Short term goal – Within 2 to 3 years following dissemination of the program, at least three neighboring school districts will adopt the program as a professional development course to facilitate EBP capacity within their occupational therapy departments. The author will deliver the course presentation and be available as a consultant during the program implementation, if needed.

Short term goal – Within 3 to 5 years following dissemination of the program, it will be available as a continuing education course provided by an AOTA approved continuing education unit (CEU) providers for individual Sb-OTPs or occupational therapy managers or therapy organizations or school districts to obtain valuable resources for improving EBP implementation.

Target audience

The overall goal of the proposed program is to build Sb-OTPs' knowledge and skills for research use and to build the organization's capacity and a positive culture for EBP for its practitioners. Given the dual impact at the individual and organizational level to improve EBP implementation in school-based settings, the primary target audience of the dissemination plan will be school-based occupational therapy practitioners as well as administrators of organizations that provide school-based occupational therapy services. These organizations would include public or private school-based settings (special education directors or program specialists or school principals) and contracting therapy agencies similar to ARS.

The secondary target audience will be AOTA approved CEU providers. As the program is made available as a CE course for especially occupational therapy managers,

a larger number of occupational therapy communities will gain resources to build an

effective EBP implementation program. Another potential secondary audience will be

colleges and universities that would be willing to partner with the school-based settings

and contracting therapy agencies to provide resource support.

Key messages

The dissemination efforts targeting the primary audience will help them

understand that the program is evidence-based, effective, and designed to be easily

integrated in a practitioners' work schedule. The goal of the dissemination to the CEU

provider companies is to encourage them to sponsor the program as an AOTA approved

CE course. Also, disseminating the program result findings will help to garner support

from more universities and colleges to partner with school districts in similar EBP

knowledge translation efforts. The following list provides key messages that the

dissemination efforts will impart to both the primary and secondary audiences.

1. At the practitioner level, the EBP building multifaceted intervention program

   increases Sb-OTPs' knowledge and skill to locate best available research evidence

   and apply it in their service delivery to school-based clients.

2. The program helps to build a wealth of EBP resources, incentives, and other

   supports to raise a favorable EBP culture within the organization, thus elevating

   the organization's reputation as an EBP provider.

3. Designed by implementation science frameworks, this program provides

   evidence-based guidelines to tailor a sustainable and stakeholder-relevant EBP

   implementation plan unique to the organization.

4. Informed by adult learning theories, the education sessions in the program are collaborative, group-based, hands-on, and are integrated into the work week so that the Sb-OTPs learn right away how to sustain evidence-based activities in their career.

5. With these gained skills, individuals and organizations gain confidence in providing effective therapy interventions leading to improved client health and outcomes, which is the overall goal of EBP.

6. The program is designed to be delivered in-person or online, uses commonly available and user-friendly digital tools and software, and paces practitioner learning in small doses to accommodate occupational therapy practitioners' busy work schedules.

Sources/messengers

Credible and influential spokespersons who would help to spread the key message to the primary and secondary target audiences during dissemination efforts are the Sb-OTPs, the ARS director, and program participants from the local university. They have participated in and benefited from the intervention program during the research study and can provide testimonials of their experiences in the program. They can share their feedback on the gained personal, professional, and organizational benefits and the overall program structure and content which will be available either in print on program brochures or through video testimonials on electronic marketing materials and websites. Listening to messages from previous recipients of the program will motivate the target audiences to adopt the program. As the program continues to be utilized by a larger

number of people and organizations, the testimonials from the newer organization administrator, practitioners, and university/college participants will be included in the ongoing dissemination efforts. Later, sponsorship by an AOTA approved CEU provider will increase the program's credibility, as the provider's acceptance of the program as a CE course will indicate that the program meets the rigorous standards for high quality and evidence-based continuing education activities set by AOTA.

Dissemination activities

To ensure the goal of program utilization for improving EBP implementation, the program findings will be disseminated to the target audiences through written information, electronic media, and person-to-person communication. Written information will include article submissions for publication in occupational therapy or healthcare journals and program brochures/one-page handouts/fact sheets for meetings or presentations with the primary audience, or at the ARS booth at national professional conferences. A two-page executive summary outlining short details of the program evaluation research will be prepared for universities/colleges. Electronic media will include sending brochures, fact sheets or slide presentation material documents via email to Sb-OTPs or organization administrators ahead of a meeting or presentation for their review. This would also include sending article abstracts to the professional organization for journal publication or an executive summary of the program to the AOTA approved CEU providers. In addition, posting a program flyer/brochure, short video presentations of the program, video testimonials of participants on ARS website, and other social media platforms like LinkedIn and occupational therapy groups on Facebook will spread

the message out to a larger audience. Creating a Facebook group for program participants

to join would allow them to have a shared online space platform for continued

professional dialogue on EBP beyond program completion. A program webpage is yet

another online option for dissemination. Person-to-person contact will include a formal

presentation of the program research at a state or national professional conference,

meetings with occupational therapy teams and/or the administrators in school districts,

other pediatric organizations, and universities or colleges.

The written information through brochures or one-page handouts or fact sheets

will use phrases to present key ideas in a visually appealing color format with graphics

and text enhancements. This will provide the research findings in an eye-catching style to

grab the attention of the primary audience. ARS can disseminate this information either

electronically or through a one-page handout during their contract deal meetings with the

district. Electronic media methods of dissemination will have the information available

for clinic owners or contracting agencies through posts on the ARS webpage or blogs. A

short stand-alone review of the methodology, findings, and recommendations will

provide a strong message to the reader and will target a larger audience, including

potential new hires exploring job opportunities at ARS. A program webpage will be

another electronic dissemination tool to spread the program information. All participants

of the program will be provided access to a Facebook group as an online community

space for sharing information and support for sustained EBP implementation efforts.

Table 3 presents more information on the activities, tools and timing of the dissemination

efforts.

Table 3

Proposed schedule of dissemination activities

Activity (Target audience)	Tool (Person-to-person contact, written or electronic media)	Timing	Persons responsible
Research article published in occupational therapy professional journal (primary)	*Written information*: Abstracts and drafts emailed to publication	Within 1 to 2 years after program implementation	Author of study
Presentation at state or national occupational therapy conference (primary)	*Person-to-person contact*: Poster presentation or live presentation of research study *Written information*: Brochures or fact sheets as accompanying tools at the poster presentation above available electronically through QR code scan or printed copies	Within 1 to 2 years after program implementation	Author of study
Advertising at state or national occupational therapy conference through ARS business booth (primary)	*Written information*: Brochures or fact sheets used to advertise the program when ARS sponsors a booth at a conference available electronically through QR code scan or printed copies	Within 1 to 2 years after program implementation	Author of study and ARS administrative staff overseeing conference preparation
Meetings with Sb-OTP teams and/or organization administrators, and universities/ colleges (primary and secondary)	*Person-to-person contact*: A short live visual presentation of the program *Written information*: Brochures or fact sheets and presentation handouts as accompanying tools for the presentation above will be emailed to participants. For universities/colleges, a two-page executive summary will be used.	Within 2 to 3 years after program implementation. (Sb-OTP teams and school districts that have a working relationship with ARS or the author will be contacted first.	Author of study Author of study and ARS school district operations staff

Activity (Target audience)	Tool (Person-to-person contact, written or electronic media)	Timing	Persons responsible
Social media platforms (primary)	*Electronic media*: Post on ARS website Post on ARS or ARS Sb-OTPs' and author's social media accounts (LinkedIn, Facebook groups) A Facebook group for program participants A program webpage The posts will contain links for brochures, a one-minute video presentation of the program, and written/video testimonials of program recipients. The webpage will outline details on the program evaluation research, recommendations and participants' testimonials.	Within 2 to 3 years of program implementation	Author of study, Sb-OTP team at ARS, ARS director, ARS administrative staff overseeing social media operations
Program brochures and/or fact sheets (secondary)	*Written information:* Program brochures or short executive summaries emailed to AOTA approved CEU providers	Within 3 to 5 years of program implementation	Author of study

Budget

A preliminary budget for the dissemination activities is presented in Table 4. This

is an estimated budget for the first 3 years of the dissemination plan. All of these costs

incurred for wider dissemination outside of ARS will be the author's personal costs as the

owner of the program. Funding sources will be explored by the author to cover some of

these expenses. The initial investments of the author's personal time for preparation of

research paper publication, preparation for district meeting presentations, and preparation of CEU course content as well as the material preparation costs will be higher in the first few years of dissemination. It is anticipated that the time-costs related to maintaining ongoing dissemination efforts will decrease. Since the primary purpose of dissemination is to spread the result findings of the program, the expenses for the software for data storage and analysis is counted as a dissemination cost.

As soon as it is adopted by a district for organizational use or an AOTA approved provider as a CE course, the program fees will help with providing revenue to cover these expenses, and thus the program will become self-sustaining. The AOTA approved providers will take care of marketing needs of the CE course.

Table 4

Preliminary budget for dissemination plan

Activity (audience)	Itemized costs	Total expense (for 3 years)
Research paper publication (primary)	- Manuscript submission fees - approx. $50 - $125 - Open access purchase for American Journal of Occupational Therapy (AJOT) - approx. $1500 - Author's invested time	Approx. **$1625** for 1 publication
State and national professional conference (primary)	- Conference registration - $500 (for presenter) - Travel and stay - $1500 (for presenter) - Poster printing costs - $100 - Printed materials - $100 (electronic materials will primarily be used) - Author's invested time	For 2 conferences: $2200 x 2 = **$4400**

Activity (audience)	Itemized costs	Total expense (for 3 years)
Advertising at ARS booth at professional conference (primary)	- Printed materials - $100 (electronic materials will primarily be used) (Small business booth cost will be covered by ARS as it is primarily an ARS business marketing activity)	For 2 conferences: $100 x 2 = **$200**
Presentations and meetings with organizations and Sb-OTP teams (primary)	- Non-billable wages of author for presentation, preparation, travel - approx. $70-$75 per hour x 4 hours per visit x 4 visits per year = $1200 per year - Handouts and materials emailed - $0	For 3 years: **$3600**
Social media posts (primary)	- Non-billable wages of author for consultation with social media person - approx. $70-$75 per hour x 4 hours per year (1 hr quarterly) = $300 per year **(not counted as an expense to the author as it is part of advertising for the company as an EBP provider, done during work hours[*])** - Non-billable wages of ARS social media administrative person for content design and preparation - approx. $25 per hour x 10 hours per year = $250 per year **(not counted as an expense to the author as it is part of advertising for the company as an EBP provider, done as part of social media job description[*])** - Facebook group = $0 - Program webpage = $600/yr created in the second year = a total of $ 1200 for 2 years	For 3 years: **$2850**
Program brochures and/or fact sheets (secondary)	- Program brochures or short executive summaries emailed to AOTA approved CEU providers - $0 - Author's invested time	For 3 years: **$0**
Data analysis software costs	Data analysis software = approx. $2000 Expert help for analysis = 5 hrs x $100	$2500
	TOTAL COST (excluding ARS wages*) = $13,525	

Evaluation of outcomes of dissemination efforts

The purpose of dissemination of the program findings is to encourage Sb-OTPs

and their organizations to adopt the program to build their own capacity for EBP

implementation and to build clinic-university connections. Hence, the success of the

dissemination will be measured by the number of these organizations adopting the

program for their Sb-OTP teams or individual Sb-OTPs signing up for the course to

benefit from the program's educational components to gain skills in research utilization.

It is possible that after taking the course, these individuals will advocate for EBP

organizational support at their workplaces. Some measurable criteria for the success of

each dissemination activity are listed below.

1. Conference – number of presentations, either research paper or poster

   presentations, at conferences within 1 to 2 years of program dissemination.

2. Publication – acceptance and publication of research program in at least one

   professional journal within 1 to 2 years of program dissemination.

3. Advertising at professional occupational therapy conferences – number of Sb-

   OTPs or organizations reaching out to learn more about the program, number of

   Sb-OTPs or organizations adopting the program within 2 to 3 years of

   dissemination.

4. Program presentation to Sb-OTP teams and organizations – number of Sb-OTPs

   or organizations adopting the program per year within 3 to 5 years of

   dissemination, number of organizations or school districts reaching out to ARS to

   learn more about the program after hearing testimonials from organizations that

have adopted the program.

5. Social media posts – number of Sb-OTPs' or organizations' views, likes, sharings, or downloads of the program content on social media, number of Sb-OTPs or organizations reaching out to learn more about the program, number of Sb-OTPs or organizations adopting the program within 2 to 3 years of dissemination.

6. Seeking sponsorship by an AOTA approved CEU provider – acceptance of the program as a CEU course within 3 to 5 years of dissemination.

7. Program presentation to universities/colleges – number of universities/colleges providing consent to partner with provider settings to provide resource support within 3 to 5 years of dissemination.

As outlined in this document, this research utilization capacity-building program is created to facilitate EBP in the profession of occupational therapy by building EBP knowledge and skill in Sb-OTPs and organizations. The dissemination efforts will attempt to reach as large an audience as possible through in-person contact at conferences and scheduled meetings, social media channels, published research in professional journals, and continuing education course options. It is hoped that these efforts will result in more practitioners and organizations developing skills and tools to be EBP providers.

CHAPTER SEVEN – Funding Plan

Program description

The author's proposed multifaceted intervention program is aimed at building the capacity of the school-based occupational therapy practitioners (Sb-OTPs) at Ascend Rehab Services (ARS), Inc. in Union City, CA, to access and use the best available research evidence during clinical decision-making in their school-based practice. The four proposed components of the program target research utilization capacity at both the individual practitioner level and the organizational level. The *education* component consists of initial outreach sessions, which will be delivered mostly in a live online class format over a period of two to three months. The content and materials for these training sessions will be developed by the author, who is also the clinical mentor of the ARS SB-OTP team. After the outreach sessions, the education element will also include ongoing consultation to the Sb-OTPs provided by the author, which will also be provided through live video-conference meetings. The second component, *provision of resources*, consists of protected time for research activities during the work day and paid access to research databases for the Sb-OTPs. ARS will provide these resources with possible assistance from a partnership with local academic institutions. Next, the *working in groups* component will allow the Sb-OTPs to engage in collaborative group activities where they locate research related to school-based occupational therapy and create user-friendly documents that will guide the team to translate that evidence in practice. These group sessions will be online or in-person, depending on the practitioners' preference. The last element of the intervention program are *organizational supports* that ARS will offer to its

Sb-OTPs. Incentives in the form of CEU certificates and digital badging for EBP

learning, raises or stipends based on EBP behavior, email reminders to support

engagement in EBP activities, audit and feedback to the Sb-OTPs, and connections with

academic partnerships for training and database access purposes will be included. This

chapter provides funding details for the program development, implementation, and

dissemination and will discuss available resources, the budget, and potential funding

sources for the program.

Available resources

The program will use some existing resources at ARS, listed below, which will

not need additional funding.

- ARS has an existing Zoom© membership for the company's live video-
  conferencing event needs. It also has a Kahoot© membership for creating fun,
  motivating activities during online or in-person meetings.

- ARS currently uses Google© Workspace tools for its business electronic
  communication, storage, content creation, and video conferencing needs. All
  employees have a Gmail account and access to these tools.

- All employees will use their own personal or workplace, either ARS or school
  worksite, and internet connection for video-conferencing meetings.

- ARS provides work laptops for all its employees. These laptops are equipped with
  built-in microphone and camera, and Microsoft© Office apps for employees'
  electronic content creation and video-conferencing needs.

- ARS often takes on volunteers to perform office clerical duties and they can help with tasks such as photocopying, on-site preparation for in-person meetings at the ARS locations, on an as needed basis.

- The senior practitioners in the Sb-OTP team at ARS, who are looking to assume leadership roles in the future, could assist with some parts of the program such as taking on the facilitator roles for the working in groups activity in the program. Those having a doctoral degree in the team could assist in data collection and/or program coordination.

- As part of the organizational supports component of the intervention program, the author aims to leverage local support from academic institutions. ARS has working relationships as an occupational therapy fieldwork and/or capstone placement site with a local state university and a private university. Resources such as assistance with preparation of training materials or consultative review of such materials prepared by the author, sharing their research database access, or providing digital badging for educational achievements would be very beneficial for the program. Through this partnership, the local universities will stand to gain a solid evidence-based practice worksite for their fieldwork students with more EBP-confident ARS fieldwork educators/capstone coordinators. At this time, it is not clear if these resources will be available fully at no cost to the program. The author will engage these resourceful stakeholders to come up with creative and feasible options for both parties. For example, while it may not be feasible for the university faculty to deliver training sessions for the program given their busy

workloads, the Level II masters' or doctoral fieldwork students placed with ARS could assist the author with educational material preparation for the initial outreach sessions. The author is a fieldwork educator and these activities could be an assigned project as part of the students' fieldwork experience. Similarly, instead of ARS obtaining library access, the possibility of only fieldwork educators getting access to research databases to some degree can be explored.

Needed resources: Budget

The preparation of initial educational course sessions and materials, a part of the program development will be completed pro bono by the author. The author will seek consultation from an EBP expert for review and feedback on the session content and materials created for the initial educational outreach. These will be the author's personal costs, as owner of the program.

The funds needed for the initial program development and implementation while the program is within ARS can be considered as the short term-funding costs. The overall program coordination and operation, and intervention components such as delivery of initial education outreach sessions, ongoing consultation, email reminders, audit and feedback will be time costs or non-billable wages on part of the author who also holds the clinical mentor position for the Sb-OTP team at ARS.

Financial costs for ARS include contributions for Sb-OTPs' AOTA memberships, digital badging, Padlet© membership, and minimal raises/stipends for EBP achievements. The major time cost in the program will involve the protected time offered to the Sb-OTPs for EBP activities to be conducted as part of the work week. The author is

proposing an hour per week of time during the work day to be protected for EBP activities for each Sb-OTP on the team. The current team has nineteen practitioners including the clinical mentor (author) who is also a school-based service provider. Contract deal-setting meetings with the school districts should include negotiations such that this protected time is built into the Sb-OTPs' workload with the understanding that school districts will receive strong EBP providers from ARS as a result of this program. The overall goal of EBP is that occupational therapy interventions delivered are efficient and cost-effective, such that students have better outcomes in terms of academic achievement, social and emotional well-being, health and nutrition, and other areas of support provided by occupational therapy.

A detailed overview of the estimated program short-term funding costs for two years, including the program dissemination costs, is provided in Table 5. Details of the program dissemination are provided in chapter 6.

Table 5

Estimated budget needs for program development and implementation

Budget Category	Program activity - cost summary per 10 months or one academic year	Program cost - Year 1	Program cost - Year 2	Justification
Personnel/Instruction				
Author as program creator	Preparation of educational materials	$0	$0	Pro bono time by author
Author as clinical mentor	Program coordination and operation - approx. $70-$75/hour x 10 hours/month x 10 months (Hours will vary per month)	$0	$0	Cost built into clinical mentor job salary.
Author as clinical mentor	Delivery of initial education outreach sessions - approx. $70-$75/hour x 0.75 hours x 8 sessions (8 educational sessions)	$0	$0	Cost is built into clinical mentor job salary.
Author as clinical mentor	Ongoing consultation - approx. $70-$75/hour x 10 hours/month x 10 months	$0	$0	Cost is built into clinical mentor job salary.
Author as clinical mentor	Email reminders, audit and feedback - approx. $70-$75/hour x 3 hours/month x 10 months	$0	$0	Cost is built into clinical mentor job salary.
Expert EBP consultant	Review of educational materials - $100 x 10 hours	$1000	$0	$1000 (one time cost)
Senior Sb-OTP	Facilitator for working in group activity - approx. $60-$65/hour x 3 hours/month x 10 months	$0	$0	Cost is built into practitioner job salary.
Office admin	Technology set up, software account set-up, interview and focus group assistance - $20-$25 x 24 hours over 2 years	$0	$0	Cost is built into admin job salary.
Volunteer	Photocopying/clerical duties	$0	$0	No cost

Budget Category	Program activity - cost summary per 10 months or one academic year	Program cost - Year 1	Program cost - Year 2	Justification
Equipment/supplies/resources				
Available software/ electronics/ apps	-Zoom® membership - approx. $200/year -Kahoot® membership - approx. $40/month x 10 months -Google® Workspace - approx. $18/user/month x 19 users x 10 months -Laptops with microphone/camera and Microsoft® Office apps for Sb-OTPs - $500-$700/laptop x 19 -Internet - $60/month x 10 months -Shared research database and digital badging from local university (to be confirmed)	$0	$0	Existing resources
Padlet membership	Small business membership - $15/month x 12 months	$200	$200	Cost for 12-month period
AOTA membership contributions	50% contribution for 19 practitioners - $ 75/year x 19	$1425	$1425	Basic package = $150/year
Digital badging provider	Provider company costs - approx. $20-$30/month x 12 months	$300	$300	If local institution is unable to provide badging
Raises/ Stipends for Sb-OTPs	Cost will depend on ARS director	Approx. $2000	Approx. $2000	One-time stipends or raises split per paycheck
Protected time for EBP activities	For 19 SB-OTPs - approx. $55-$65/hour x 4 hours/month x 10 months x 19 SB-OTPs	$0	$0	Time is built into practitioners' workload-based school contracts
Paper supplies	For paper copies of materials	$100	$100	Mostly electronic format, so minimal costs

Budget Category	Program activity - cost summary per 10 months or one academic year	Program cost - Year 1	Program cost - Year 2	Justification
Evaluation				
Outcome measures	Self-report measures for assessing program's individual and organizational outcomes	$0	$0	Available from developers with permission at no cost
Communication/travel				
	Email communication, meetings	$0	$0	Primarily electronic communication, video-conferencing calls/meetings. Phone calls/occasional travel to physical location - covered as personal expense or through existing company fringe benefit.
	ESTIMATED TOTAL EXPENSES	$5025	$4025	
	ESTIMATED PROGRAM DISSEMINATION COSTS (for first 3 years of dissemination)	$13,525		See details in chapter 6
				TOTAL COSTS = $22,575

While Table 5 considers the short-term funding for the first two years of the

program, the long-term funding costs, after the first 2 years, will change as the program

moves to organizations other than ARS. The goal is that the program is adopted by

districts or contracting agencies for organizational use, and an AOTA approved provider

as a CE course. At that time, the zero-dollar costs related to the author's time for travel

for in-person sessions, and program delivery listed in table 1 will turn into program

expenses for the district/organization. However, time-costs related to the clinical mentor

who will eventually oversee the program, senior practitioners who will be responsible for

group work coordination, and the office administrative staff will remain as zero-dollar

costs for the organizations, built into salaries for those job descriptions. Just as the

technology related components of the program will use Kahoot®, Google® workspace,

and Zoom®, which are the existing digital tools at ARS, the program can be implemented

using different existing technology in other organizations, thus requiring minimal funds

for acquiring new technology for the program. In short, the funding costs will vary when

the program moves to its CE/wider dissemination phases. The program fees will help

with providing revenue to cover the author-related expenses and, thus the program will

become self-sustaining.

Potential funding sources

For the entire duration of the program development and implementation, the

majority of the costs will be non-billable wages of the clinical mentor and the Sb-OTPs.

The program will be absorbed into the mentorship schedule at ARS and hence, ARS will

bear the costs of the existing resources and the additional resources such as AOTA

memberships, Padlet® memberships, digital badging, and raises/stipends costs for its Sb-

OTPs. The costs involved in wide dissemination of the program to school districts will be

personal costs to the author, as the creator and owner of the program. Once the program

is adopted by a district, the fees for service will cover the author's training and consultation costs of the program, becoming self-sustainable.

Some of the personal costs for the author, such as those required for consultative review of the educational material, data analysis software and expert consultation, and program dissemination, can be obtained through angel funding or through research scholarships or grants offered by The California Foundation for Occupational Therapy (CFOT). CFOT offers:

- general grants up to $6000 for independent research to practicing occupational therapy practitioners (OTPs) who are members of Occupational Therapy Association of California to help fund items such as consultation fees, printing, supplies and communication;

- research seed money up to $250 to individual OTPs conducting studies requiring less extensive funds; and

- program development project seed money up to $250 to practitioners for projects addressing occupational therapy practice.

Conclusion

The multifaceted research capacity building program is being created by the author for the Sb-OTPs at ARS, an agency that contracts out practitioners to school districts. The author is the clinical mentor for the Sb-OTP team. During the program development and implementation, most of the costs will be built-in salary costs of the employees. Other costs will be offset by existing resources and potential assistance from partnerships with local universities. ARS will be investing $4000 per year through

benefits such as AOTA memberships, raises/stipends for EBP performance to sustain this program as part of the mentorship as part of the organization's vision of being an EBP provider. The author will bear the costs for wider dissemination of the program outside of ARS out-of-pocket, through angel funding, or through available CFOT program funding sources. After dissemination, once the program is adopted by an organization for its use and is made available as a CE course through an AOTA approved CEU provider, the fees-for-service will cover the program costs, thus rendering it self-sustaining.

CHAPTER EIGHT – Conclusion

Established as a professional standard in occupational therapy, evidence-based practice (EBP) improves the quality of services provided and, thus increases the likelihood of positive client outcomes. Occupational therapy practitioners (OTPs) are called to use their clinical expertise to apply best available scientific evidence in a practice situation while consulting with the client on their preferences and values (Sackett et al., 2000). Naturally, an inherent EBP responsibility is that OTPs acquire research literacy skills in order to access and appraise research continuously in their practice career. OTPs are still struggling to maintain their professional responsibility of research application in practice due to individual practitioner and organizational level barriers (Krueger et al., 2020; Myers, 2019a). The proposed evidence-based intervention program is a practical tool for improving EBP implementation in a contracting agency, Ascend Rehab Services (ARS) based in Union City, CA. It aims to build school-based practitioners' skills and confidence in research literacy and to make the workplace better equipped to support EBP.

The multifaceted program is developed using theories from knowledge translation, and adult learning and behavior. The Knowledge-to-Action process framework (Graham et al., 2006) provides a context-focused iterative process to the program design starting with problem identification and moving on to sustainability. Core features of the program are continual involvement of all stakeholders throughout the process, assessment of barriers to tailor the intervention, and adaptation of the knowledge for use in the practice context. This ensures that the program is relevant and engaging to

the stakeholders. The four proposed interventions of education, provision of resources, working in groups, and organizational supports will set in motion a continual process of EBP implementation. The education sessions are designed using principles of Social Cognitive Theory (SCT) (Bandura, 1986), brain-based learning strategies (Willis, 2006; Yee & Boyd, 2018) outlined in cognitive science literature, and evidence-based literature supporting blended learning and digital health education formats (Brown et al., 2020; Hew & Lo, 2018; Kim & Castelli, 2021; Liu et al., 2016). The education and working in groups components will provide the practitioners with a multi-sensory learning experience that follows a collaborative, group-based, hands-on learning-by-doing approach through user-friendly digital tools and software meant to engage all learning styles. In parallel efforts, the organization is making its contribution in support of their employees' commitment to EBP by providing basic resources and supports, such as access to databases, protected time for EBP activities during work, and incentives. Perhaps one of the most important supports is the clinic-academic partnership forged to strengthen this knowledge translation endeavor. These existing relationships could eventually divert their focus to knowledge creation, where both parties collaborate in research efforts to generate new knowledge that is directly relevant to real-life clinical problems.

An increase in knowledge and skills of research use, in time spent on EBP activities during work, and in implementation of EBP in practice are the practitioner-related outputs, and sustained support, resources and priorities for EBP are the organization-related outputs. In addition to these outputs, better reputation and service

credibility for the practitioners and organizations, and organizational benefits such as better employee engagement, team collaboration and retention, improved customer satisfaction, and possible increased revenue are anticipated outcomes of the program.

In the larger picture, this program is a step in advancing EBP in the profession. As an increasing number of organizations realize their obligation and their potential to be EBP providers, occupational therapy will gain more credibility as an evidence-based profession. It takes both OTPs and their work organizations to collaboratively make a strong commitment to acquire and maintain an EBP provider status. This is vital for OTPs as they execute their professional duties to help clients achieve maximum potential and outcomes to participate in meaningful life occupations.

APPENDIX A – Core Definitions and Categorization of Implementation Strategies

Implementation strategy	Definition based on ERIC compilation (Powell et al., 2015) and categories (Waltz et al., 2015)
Category: Use evaluative and iterative strategies	
- Assess for readiness and identify barriers and facilitators	Assess the ARS organizational readiness for implementation, and barriers and facilitators in the organization that may impede or facilitate the implementation plan.
- Audit and provide feedback	Provide summarized data collected for a specific period to stakeholders (Sb-OTPs, ARS director) as feedback for monitoring and adjusting behaviors as needed.
- Develop a formal implementation blueprint	Use a formal plan of the implementation design consisting of purpose, goals, strategies, expected change, timeframes, performance measures and other relevant implementation information, and update it to guide implementation regularly. Plan is developed jointly by key stakeholders.
- Purposefully re-examine the implementation	Conduct careful monitoring of the implementation outcomes and progress in order to make necessary changes in the implementation plan, as needed, to maintain quality of the outcomes.
Category: Train and educate stakeholders	
- Conduct educational outreach visits	A trained person provides education to the Sb-OTPs in their settings (either in in-person or virtual meetings) about the innovation which in this case is 'how to access and use research evidence' in order to help them include research evidence in their practice".
- Create a learning collaborative	Form groups of Sb-OTPs so that they can apply the knowledge from the outreach sessions and develop practice- specific knowledge tools, in a team-based collaborative problem-solving approach.
- Develop educational materials	Provide multi-sensory educational materials using interactive, user-friendly digital tools such as short videos, quick tutorials, online reading material, easy-to-understand electronic handouts to educate Sb-OTPs on how to access and understand research evidence, and how to apply that research in practice.

Implementation strategy	Definition based on ERIC compilation (Powell et al., 2015) and categories (Waltz et al., 2015)
Category: Train and educate stakeholders (contd.)	
- Make training dynamic	Deliver the education through interactive, multisensory methods using digital tools such as flipped classroom, gamification, group discussions, suitable for all learning styles of the Sb-OTPs
- Provide ongoing consultation	Provide in-person or online consultation with the clinical mentor to assist Sb-OTPs to ask questions about knowledge learned, and to apply the knowledge gained to clinical practice cases.
Category: Support clinicians	
- Remind clinicians	Clinical mentor sends regular electronic reminders to the Sb-OTPs to assist them in knowledge recall and use of knowledge in practice.
Category: Adapt and tailor to context	
- Tailor strategies	Choose strategies that reduce barriers and monopolize on strengths, that were identified during data assessment.
Category: Develop stakeholder interrelationships	
- Develop academic partnerships	Develop collaborations with local universities to gain assistance with education/training, database library access, and resources for the program.
- Involve executive board	Involve the ARS director and if needed, other administrative staff in the overall implementation design, monitoring and outcomes data.
- Use advisory boards and workgroups	Involve the important stakeholders; i.e., Sb-OTPs, ARS director, and university to gain feedback on data and advice on program improvement.
Category: Utilize financial strategies	
- Alter incentive/allowance structures	Provide CEUs for EBP activities, digital badging for EBP achievements, small stipends/raises, and financial contributions for access to research journals to promote Sb-OTPs use of research in practice.

APPENDIX B – Sample Teaching Plan

TEACHING PLAN TABLE					
Overall learning goal: School-based occupational therapy practitioners (Sb-OTPs) will learn the levels of research evidence hierarchy available in their field of practice					
Specific learning objective	**Learning activity(ies) & supporting learning theory(ies)**	**Method of teaching**	**Time allotted (in minutes)**	**Resources (e.g., materials for instruction)**	**Method of evaluation**
After a 30-minute online group instruction with a pre-assigned video (C), the Sb-OTPs (A) will demonstrate (B) the ability to access one (D) free research article on PubMed	Small-group discussion: Apply steps learnt in the pre-assigned video to search for a free PubMed article on a topic chosen by the small break-out group; share it with the whole group (SCT) Whole group discussion: Share their article and identify the level of evidence according to the evidence hierarchy (SCT)	Flipped classroom model Online team-based learning	Total: 40 minutes (25 minutes – small group discussion 15 minutes – large group discussion)	Video accessible online on AOTA website	Peer-rated (peers from small group) skills checklist for return demonstration
Note. A – audience; B- behavior; C – condition; D - degree; SCT - Social cognitive theory.					

APPENDIX C – Sample Padlet® Lesson Plan

APPENDIX D – Sample Interview Questions for Qualitative Data Collection

For Sb-OTPs	When you hear evidence-based practice, how do you define evidence? Describe your methods of gathering evidence How do you use that evidence? How do utilize evidence in daily practice? Let me share with you the definition of evidence-based practice. Now, Describe any experience you have had with EBP in your workplace. How do you feel about EBP? Tell me your views on the importance of EBP in relation to your current role. Describe your perception on the need to implement EBP in practice. Tell me about the supports you experience or anticipate related to the use of EBP in your current role. Tell me about the challenges you experience or anticipate related to the use of EBP in your current role. (Follow up questions will be asked as appropriate based on Sb-OTPs' responses)
For ARS director	When you hear evidence-based practice, how do you define evidence? Let me share with you the definition of evidence-based practice. Now, Describe any experience you have had with EBP in the organization. How do you feel about EBP? Tell me your views on the importance of EBP in relation to ARS' Sb-OTPs' roles. Describe your perception on the need for the Sb-OTPs at ARS to implement EBP in practice. What do you perceive to be the benefits of EBP in school-based practice? What do you perceive to be the drawbacks of EBP in school-based practice? What role do you believe ARS has in implementing EBP? What resources or supports are currently in place at ARS to support EBP? What resources would need to be available to fully implement EBP at ARS? Tell me about the challenges you anticipate related to supporting EBP within ARS (Follow up questions will be asked as appropriate based on director's responses)

APPENDIX E – Numerical Rating Survey on Usefulness of Intervention

Please rate the following intervention components in terms of how useful you found them in helping you learn and use evidence-based practice during the project.				
	Not useful at all	A little useful	Moderately useful	Very useful
Initial education sessions	1	2	3	4
Ongoing consultation	1	2	3	4
Access to databases	1	2	3	4
Protected time for EBP	1	2	3	4
Working in groups	1	2	3	4
Incentives	1	2	3	4
Reminders	1	2	3	4
Audit and feedback	1	2	3	4
Academic partnerships	1	2	3	4
Consistent EBP communication	1	2	3	4
Other perceived facilitators 1. _____ 2. _____ 3. _____	1 1 1	2 2 2	3 3 3	4 4 4

APPENDIX F – Executive Summary

Moving Toward Evidence-Based Practice: A Research Utilization

Capacity Building Program

Introduction

Evidence-based practice (EBP) in rehabilitation is a process of using one's

clinical experience to apply best external scientific evidence in a practice situation while

simultaneously considering client and/or family values and context (Sackett et al., 2000).

EBP is set as a professional standard in occupational therapy as it increases the likelihood

of positive client outcomes, appropriate reimbursement for services, and it maintains the

credibility of the profession in the competitive world (Taylor et al., 2017). To acquire and

maintain knowledge on EBP for continuous application in service delivery is a

requirement set by the American Occupational Therapy Association (AOTA) in its

Standards of Practice (AOTA, 2021). Furthermore, EBP is outlined as a necessity in

education laws, such as the Individuals With Disabilities Education Improvement Act

(IDEIA) of 2004 (PL. 108–446) and the Every Student Succeeds Act (ESSA) of 2015

(PL. 114 - 95). Despite this, recent research shows that occupational therapy practitioners

apply research findings in practice at a low level and underutilize available online

evidence sources to implement EBP (Krueger et al., 2020; Myers, 2019a). These poor

research utilization behaviors will negatively impact the likelihood of provision of high-

quality services leading to ineffective interventions which cause financial risks (Scheibel

et al., 2022). Research exploring the underlying causes for insufficient research uptake

calls for parallel efforts to address barriers at both the individual and the organizational

levels (Bennett et al., 2016; Dobbins et al., 2018; Novak & McIntyre, 2010). Thus, with

an overall goal of moving toward EBP, this study is designed to increase the research

utilization capacity at both levels within an organization providing school-based

occupational therapy services.

Program Overview

This evidence-based multifaceted intervention program is designed based on the

action cycle of the Knowledge-to-Action (KTA) framework (Graham et al., 2006). KTA

framework, widely used in knowledge translation projects, is a context-focused action

model that provides a careful, deliberate, step by step outline of activities to guide the

process of translating research into practice. Core features of the program are continual

involvement of all stakeholders in the program, assessment of barriers to tailor the

intervention, and adaptation of the knowledge for use in the practice context. Figure 1

shows the program following the KTA action cycle steps.

Figure 1

Steps of program design based on the action cycle of the KTA framework (Graham et al.,

2006)

The *initial educational outreach* covered within the first three months of

implementation can be delivered in a synchronous online class format. The class focuses

on teaching basic research literacy skills to follow the five steps of the EBP cycle

(Brown, 2017). The session design and materials are developed using principles of Social

Cognitive Theory (SCT) (Bandura, 1986), brain-based learning strategies (Willis, 2009;

Yee & Boyd, 2018) outlined in cognitive science literature, and evidence-based literature

supporting blended learning and digital health education formats (Brown et al., 2020;

Hew & Lo, 2018; Kim & Castelli, 2021; Liu et al., 2016). A flipped classroom format is used to allow self-pacing of class preparation ahead of time and group discussions during the synchronous class. During class, online games and quizzes stimulate curiosity and motivation while assisting with retrieval and immediate feedback to learning, and open-ended reflective questions trigger associations of the meaning and context with the content. The 35-to-45 minute sessions fit conveniently in a busy work schedule. Throughout the program duration, *ongoing consultation* through online office hours with the author/clinical mentor provides additional support for application of gained knowledge to real-life practice situations. The school-based occupational therapy practitioners (Sb-OTPs) receive a protected block of time on a weekly basis and access to research databases through the employer and the academic institution partnerships, *resources* essential for their participation in the program. While *working in groups*, teams create knowledge tools, such as decision aids, practice guidelines or one-page evidence summaries relevant for school-based practice. These tools are stored in an electronic research repository for all practitioners' future use. Through the group work of adapting available research to the practice context which is a part of the KTA framework (Graham et al., 2006), the SCT-based collaborative team learning approach allows practitioners to practice their learned research literacy skills. Scheduled after completion of the initial education sessions, this group work is structured based on the common enablers for communities of practice groups identified in the research literature, some of which are mixed novice-expert attendance, management support, strong facilitator, and smaller sized groups (Alary Gauvreau et al., 2019; Barbour et al., 2018; Barry et al., 2017;

Roberts, 2015). Lastly, to support the practitioners' EBP work, *organizational supports* include incentives (continuing education units for education and group learning work, digital badging, small stipends), email reminders, continuous audit and feedback, consistent EBP supportive communication, and supports through partnership/s with local academic institution/s (support for initial training and shared library access). Through the group work and organizational supports, the Sb-OTPs gain social approval (norms) from their peers and their organization, and develop confidence in their EBP capabilities (perceived behavioral control). Based on the Theory of Planned Behavior (Ajzen, 1985, 1991), these high normative beliefs and high perceived control coupled with positive attitudes for EBP will likely produce high EBP implementation behaviors, at an individual level. Similarly, examining the organizational-level constructs outlined by Organizational Readiness for Change (Weiner, 2009), the intervention promotes the collective commitment and belief in collective capability of the Sb-OTPs, as they develop knowledge and skill and are supported with needed resources. This impact, in turn, increases the organizational readiness for change leading to a higher likelihood of effective EBP implementation. Figure 2 gives a visual summary of the components.

Figure 2

Proposed components of the intervention program

The program consists of a pre-implementation phase of 6 to 12 months and an

implementation phase of 18 to 24 months. The majority of the costs involved in program

development and implementation are non-billable wages of the author/clinical mentor

and the Sb-OTPs as maintaining EBP is a part of a mentor/practitioner job duties. The

program ultimately becomes a part of the mentorship schedule of the organization with

the clinical mentor or an assigned lead in the team maintaining the overall coordination

and operation of the program. Aside from the built-in salary costs, the organization would

spend an approximate cost of $4000 per year to cover the expenses for software set-up

and provision of incentives. The costs involved in dissemination of the project findings

will be personal costs to the author. These costs could be covered through potential angel

funding and/or research grants from local professional occupational therapy

organizations. The primary target audience for dissemination are Sb-OTPs and organizations involved with providing school-based occupational therapy services, such as school districts or contracting therapy agencies, with the aim that they will adopt the program. It will also be offered as a continuing education (CE) course through an American Occupational Therapy Association (AOTA) approved CE unit provider. Once the program is adopted by an organization or provided as a CE course, the fees for service will cover the costs of the program, thus making it self-sustaining.

Anticipated key findings

Quantitative and qualitative methods are used for pre-and post-implementation data collection to assess the practitioners' and organization's program outcomes. Self-structured and focus group interviews, valid and reliable self-report questionnaires, and performance measures are used to gather data from the practitioners' and organization's leadership. The expected short-term outcomes are an increase in Sb-OTPs' knowledge and skills for access and understanding research evidence in practice and an increase in the number of organizational EBP resources provided to practitioners. The intermediate-term and long-term outcomes are an increase in time spent by Sb-OTPs in research utilization activities on a monthly basis, in the number of EBP deliverables created or shared in the research repository, an increase of use of knowledge gained in daily practice as reported by the Sb-OTPs, and eventually sustained use of research evidence in practice by the Sb-OTPs and provision of EBP resources by the organization.

Recommendations and conclusion

To fulfill their professional obligation toward EBP implementation, all occupational therapy practitioners are required to make an ongoing commitment to stay abreast of new research and to use clinical expertise to apply it within the clinical practice, while considering the client's inputs. The described evidence-based multi-component program is created for school-based occupational therapy practitioners and their organizations to build their research utilization capacities for EBP. Strongly rooted in theories from implementation science and adult learning and behavior, this program not only strengthens the practitioners' practice credibility, but also cultivates a favorable EBP culture within the organization, thus elevating the organization's reputation as an EBP provider. All stakeholders have an equal voice in tailoring the program to their unique organizational context. The learning-by-doing education approach is designed to be collaborative, group-based, hands-on, and easily integrated into a work week, such that Sb-OTPs quickly learn how to sustain evidence-based activities in their practice career. Moreover, it is designed for an in-person or online delivery format; it uses commonly available, user-friendly digital tools and software to engage all learning styles in amplified, temporary, multi-sensory experiences which enhances attention, motivation and memory, all in a social learning context (Cilliers, 2021; Deaton, 2015). Additionally, it leverages support from local academic institutions and creates clinic-academic partnerships which could eventually progress from a knowledge translation focus to a knowledge creation one.

In conclusion, this program is strongly recommended for organizations providing school-based occupational therapy services to build their EBP capabilities. This will help Sb-OTPs to fulfill their professional duty of EBP implementation in practice, and more importantly, to provide the most credible and efficient therapy interventions for better outcomes of successful student participation in schools.

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APPENDIX G – Fact Sheet

BOSTON UNIVERSITY

Moving Toward EVIDENCE-BASED PRACTICE

A Research Utilization Capacity Building Program

BENEFITS OF THE PROGRAM

- Strongly rooted in theories from Implementation Science

- Targets the individual and organizational levels of research capacity for EBP

- Involves all the stakeholders to tailor the program to individual organizational context

- Components can be used in an in-person or synchronous online format – practical and convenient

- Uses a learning-by-doing approach: collaborative, group-based, hands-on, easily integrated in the work week

- User-friendly digital tools and software to engage all learning styles in multi-sensory experiences

Program Evaluation and Impact

MIXED METHODS RESEARCH DESIGN

Qualitative (semi- structured and focus group interviews) and quantitative measures (self-report measures, performance measure, time log, and numerical rating survey) will collect data on the following outcomes:

SHORT-TERM OUTCOMES:
- **Sb-OTP:** Increased knowledge and skill for use of research evidence
- **Organization:** Increased resources to support practitioners' EBP

INTERMEDIATE/LONG-TERM OUTCOMES:
- **Sb-OTP:** Increase in time spent in research/EBP activities
- **Sb-OTP:** Increase in the number of EBP deliverables/knowledge tools in the repository
- **Sb-OTP:** Increase in the use of research evidence in daily practice
- **Organization:** Sustained provision of EBP support

OVERALL IMPACT: More consistent use of research evidence in practice; a strong EBP supportive workplace with resources and set priorities for EBP; increased team collaboration to create easy-to-use evidence tools relevant for practice.

OVERALL IMPROVED EBP PROVIDER CREDIBILITY

Theoretical Basis of The Program

- Uses the Action cycle of KTA framework (Graham et al., 2006) to guide the design of steps in the program

- Uses the social learning principles from Social Cognitive Theory (Bandura et al., 1986) for the education component

- Based on the Theory of Planned Behavior (Ajzen, 1985), it creates better social norms and capabilities for EBP, thus increasing chances of EBP behavior

- Based on Organizational Readiness for Change (Weiner, 2009), it aims to improve the collective EBP commitment and collective belief in EBP efficacy in the organization

Use the QR code to access the references used in this fact sheet

Use this QR code to check out a sample of a lesson on Padlet®: Password – HP720

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