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A Quality Improvement Project to Improve Health Care Provider Self-Efficacy in Rural Primary Pediatric Care Clinics through Training Intervention

Alison Borgsmiller

A QUALITY IMPROVEMENT PROJECT TO IMPROVE HEALTH CARE PROVIDER SELF-EFFICACY IN RURAL PRIMARY PEDIATRIC CARE CLINICS THROUGH TRAINING INTERVENTION

By

Alison Marie Borgsmiller

Bachelor of Science – Nursing
University of Nevada, Las Vegas
2006

Master of Science in Nursing – Family Nurse Practitioner
University of Nevada, Las Vegas
2018

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Alison Borgsmiller

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Rhigel Tan, DNP
Examination Committee Chair

Reimund Serafica, Ph.D.
Examination Committee Member

Joseph Morgan, Ph.D.
Graduate College Faculty Representative

Kathryn Hausbeck Korgan, Ph.D.
Vice Provost for Graduate Education & Dean of the Graduate College

Abstract

American Association of Pediatrics recommends screening for various developmental delays in children, but it does not explicitly recommend a tool for screening social and emotional development at well-child checks (WCCs). Therefore, provider self-efficacy (SE) is lacking, and screening rarely occurs. This quality improvement (QI) project sought to improve healthcare provider SE using the Ages and Stages Questionnaire: Social-Emotional, Second Edition (ASQ:SE-2), an evidence-based practice screening tool for identifying such delays in children at 30–60-month WCC visits.

At rural healthcare centers in San Luis Obispo, California, participants completed the Self-Efficacy Twelve Questionnaire prior to and 30 days following a training intervention. While the questionnaire assessed a provider's perceived SE for social and emotional developmental screening in children at WCC visits, the training intervention—handouts and online activities—reinforced practices to improve provider SE in conducting these evaluations. In comparing pre and posttraining scores, the intervention had a statistically significant effect on provider SE using the ASQ:SE-2 to screen for and identify social and emotional development in 30–60-month-olds, improving patient outcomes with earlier referrals to intervention services. The QI project also determined providers with the most negligible improvement in SE after the training intervention had a baseline preintervention SE score above 100.

The limitations of this pilot project were the small sample size, provider difficulty completing the intervention due to the pandemic (i.e., lack of time and patient volume), lack of early intervention service providers, and lack of expedited referrals.

Keywords: Ages and Stages: Social-Emotional, ASQ:SE-2, Self-efficacy, SE-12 Questionnaire

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Dedication

I would first and foremost like to dedicate this to my loving husband, Bill, and my three beautiful children: Taylor, William, and Chloe. I appreciate your support during my educational endeavors and your contributions to support me while I pursued my doctorate. I also want to dedicate this to my sister, Aimee Richard, who has always been my biggest supporter.

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Chapter I

Introduction

Social-emotional delays significantly affect a child's health and development; however, a gap exists in clinical practice for surveilling and screening social and emotional development as self-efficacy (SE) is lacking. A review of relevant literature review shows limited use of evidence-based practice (EBP) screening tools like the Ages and Stages Questionnaire: Social-Emotional, Second Edition (ASQ:SE-2); therefore, this Doctor of Nursing Practice (DNP) quality improvement (QI) project investigated the effectiveness of a training intervention for improving provider SE. The American Academy of Pediatrics (AAP) recommends providers use a tool to screen for gross motor, fine motor, communication, social language, and self-help development at well-child check (WCC) visits but does not recommend a specific EBP screening tool for social and emotional development (Hagan et al., 2017). According to Williams et al. (2018), the ASQ:SE-2 has proven psychometric properties for screening for social and emotional development at 30–60-month WCC visits, but the available research suggests providers lack training and SE related to surveying and screening for these development issues.

Rural primary pediatric providers in San Luis Obispo (SLO), California, allowed the DNP student to create and implement a QI project to improve provider SE through a training intervention using the ASQ:SE-2. The training intervention, which included handouts and online activities, intended to increase provider SE in surveilling and screening children for social and emotional development issues. The theoretical frameworks adapted for this QI project are Bandura's Self-Efficacy Theory (SET) and Lewin's Change Theory (LCT).

Background

The SE training intervention focused on improving rural pediatric healthcare providers' SE using the ASQ:SE-2, an EBP tool that systematically screens for social and emotional delays based on specific behavioral areas, including self-regulation, compliance, communication, adaptive functioning, autonomy, affect, and social interactions (Rosenberg et al., 2018). The ASQ:SE-2 can also improve patient outcomes by referring children for early intervention (EI) services (Bekman et al., 2017). EI referrals for social and emotional developmental deficits are essential for reducing underachievement and improving mental health outcomes (Rosenberg et al., 2018). Children under the age of 5 are vulnerable to their environments; therefore, proper surveillance and screening for developmental milestones, including social-emotional development, enables healthcare providers to refer children for EI services to optimize their growth.

According to Shapiro and Charest (2021), provider SE is associated with implementing EBP programs, including workplace support and training; thus, decreased provider SE may result in difficulty engaging with families. This QI focuses on the impact of positive reinforcement on provider SE through a training intervention that incorporates communication techniques at WCC visits. The SE-12 Questionnaire (SE-12) was used to calculate pre and posttraining intervention scores to determine a provider's attitude, behavior, clinical practice judgment, and readiness to address social and emotional development at the 30–60-month WCC. Thus, the ASQ:SE-2 was used as an EBP screening tool in the clinical setting to provide the QI project with a valid structure while the SE-12 evaluated the efficacy of the intervention.

Problem and Significance

The ASQ:SE-2 is a scientifically proven social-emotional EBP screening tool in contrast to the current standard of care—a broad-based screening tool like the Ages and Stages: Third

Edition (ASQ-3), which lacks validity and reliability (Williams et al., 2018). According to Williams et al. (2018), the ASQ-3 screens for various developmental milestones, and less than half of the study's WCC visits that had a positive screen on the ASQ:SE-2 also had a positive screen on one or more domains of the ASQ-3, indicating that a significant number of WCC visits are not correctly identified and referred for EI services. Thus, the ASQ-3 should not be used for screening social and emotional development at 30–60-month WCC visits because it lacks validity and reliability, decreasing SE in healthcare providers and impacting screening rates.

The ASQ:SE-2 is better at identifying children 30–60-months of age who are at risk for social and emotional developmental deficits than the current recommendation of a broad-based developmental screening tool. The ASQ:SE-2 should be consistently used in a training intervention to reinforce SE in healthcare providers.

While the AAP recommends screening for various developmental delays, it does not explicitly recommend an EBP tool for providers to use when screening for social and emotional development at WCC visits; therefore, provider SE is lacking, and screening rarely occurs. Developmental delays are not often identified in children until they enter the educational system at the age of 5; however, providers could survey and screen children for developmental issues during WCC visits, which occur prior to formal education. The efficacy of this screening depends on the provider's SE. According to Bandura and Walters (1977), SE is an individual's belief in how well they can execute an action plan in a particular situation. When healthcare providers lack SE, their ability to use the ASQ:SE-2 appropriately decreases, potentially affecting the value of WCC screenings for the aforementioned purposes.

Purpose

This QI project was designed to maximize healthcare provider SE by establishing guidance for using the ASQ:SE-2 to systematically screen for social and emotional delays, including behavioral, social-emotional, autism-spectrum disorder, motor-specific, sensory, and psychosocial conditions (Williams et al., 2018). Providers participating in the study completed the SE-12 Questionnaire (i.e., preintervention score), then received the training intervention. The SE training intervention consisted of an online SE activity and a handout SE activity. The online SE activity included continuing medical education (CME) or continuing education (CE) credit by Malik and Marwaha (2022) and a CD-ROM activity from the Brookes system (Appendix J). The SE handout activity (Appendix K) applied the knowledge from the online SE activity to the clinical setting, where providers identified appropriate WCC visits for ASQ:SE-2 screening and distribution, interpreted cut-off values and scores, determined developmental activities and potential referrals for EIs, and practiced how to rescreen follow-up visits. Providers completed the SE-12 Questionnaire again 30 days after completing the SE training intervention (i.e., postintervention score), which the DNP student compared to their preintervention SE scores to assess if a statistically significant change occurred in SE. The training intervention was intended to improve provider proficiency using the ASQ:SE-2 and reinforce their relationships with caregivers by fostering confidence, managing emotions, increasing knowledge, and preparing child patients to enter the education system.

Chapter II

Literature Review

An extensive literature review of several databases—including the Cumulated Index to Nursing and Allied Health Literature, Cochrane, PubMed, and PsycINFO—focused on relevant articles published in the last 5 years in English. A comprehensive database search yielded the highest return on synonyms, including *young children*, *ASQ:SE-2*, *developmental screening*, and *developmental delays*. Studies selected for inclusion were based on a hierarchy of evidence, statistical analysis, and clinical relevance to the SE training intervention, including the social-emotional screening protocol for providers to identify for which WCC visits the ASQ:SE-2 screening is most valuable. Using the ASQ:SE-2 at WCC visits can increase early identification of social and emotional developmental delays, improving providers' SE and enabling them to refer child patients for EI services sooner; overall, this results in improved long-term mental health outcomes for children due to the brain's pliability and rapid development before age 5 (Bekman et al., 2017). In addition, the literature review also indicated healthcare providers do not utilize EBP screening tools due to low SE. While the ASQ:SE-2 tool is valuable for provider SE when implemented at 30–60-month WCC visits, it is not used in the clinical setting.

The United States Department of Health and Human Services recommends the ASQ:SE-2 as a first-line screening tool to assess a child's social-emotional behavior (Moodie et al., 2014). However, the literature highlights the lack of ASQ:SE-2 use in the rural primary pediatric care setting for screening and surveilling social and emotional development in early childhood due to provider SE. Therefore, this QI project focused on improving SE through a training intervention. Although not directly measured, the primary motivation for adopting and using the ASQ:SE-2 is to meet meaningful use criteria where financial incentives exist. For instance, California (the site

of this QI project) raised taxes on tobacco to improve state health care, including early identification of developmental delays in children before they enter the education system. In addition, a formal training intervention would significantly improve the quality of care in the clinical setting for development screenings at WCC visits (Meehan et al., 2014). The research supports the QI project's integrating a training intervention to improve provider SE using the ASQ:SE-2 to screen for social and emotional development issues.

Attachment and Child Health

Anis et al. (2020) investigated the effects of the Attachment and Child Health intervention—specifically, parent-child interaction and child development. This study focused on children under 36 months, fulfilling the age requirement of the proposed QI project, and included the target population's caregivers. The intervention in this study is relevant because of the ASQ:SE-2 and ASQ-3. A statistically significant difference was observed between groups related to ASQ-3 personal-social scores, $F(2) = 3.07$, $p < .04$, favoring the intervention group (Anis et al., 2020). The study highlights the value of the caregiver's role in the social and emotional development screening process with the ASQ:SE-2 because they know the child's daily routines. Therefore, the training intervention activities reinforce provider SE through case studies that enhance communication between providers and caregivers.

Teacher-Reporter Measure

Pooch et al.'s (2019) study is relevant because the training intervention and outcome components included educators' SE in using the ASQ:SE-2 to identify social and emotional deficits in the preschool environment. The study evaluated the ASQ:SE-2 because it is brief, inexpensive, and capable of accurately measuring social-emotional development (Pooch et al., 2019). Children with an elevated ASQ:SE-2 score were screened with the Behavior Assessment

System for Children, 2nd edition (BASC-2), which exhibited a significant positive correlation between the ASQ:SE-2 total score and BASC-2 subscales behavioral symptoms. Elevated ASQ:SE-2 scores identify at-risk children, who score higher on questions measuring symptoms like aggression and hyperactivity (Pooch et al., 2019). The study determined that the ASQ:SE-2 can be implemented easily as a training intervention to improve SE for social and emotional deficit screening.

China Adaption

In a study by Bian et al. (2017), the ASQ:SE-2 was intended to be translated, adapted, and evaluated for surveilling and screening the development of Chinese children. The China study aligns with the DNP project's setting, population, ASQ:SE-2 intervention, and outcome of increased identification of social-emotional developmental delays in early childhood. Using International Test Commission guidelines, the study evaluated the psychometric properties of the ASQ:SE-2—translated into Simplified Chinese (i.e., ASQ: SE-C)—through a sample of 2,528 children across China (Bian et al., 2017). The China Adaption study is relevant because it demonstrates that the ASQ:SE-2 is a valid, cost-effective, and user-friendly tool that can be translated (considering cultural and ethnic differences) and integrated into a training intervention to improve providers' SE for EBP screening.

FQHC and Family Service Agency

Two community agencies evaluated the effectiveness of the ASQ-3 against the ASQ:SE-2 on 608 children 2–60 months of age, to determine which tool was more scientifically valid and reliable for identifying social and emotional developmental delays in children (Williams et al., 2018). If only the ASQ-3 results were used, less than half of the children that received a positive screen on their ASQ:SE-2 were determined to require additional assessment (Williams et al.,

2018). Williams et al.'s (2018) study correlates with the QI project aim by highlighting the need for a SE training intervention for providers because, according to their research, children are more likely to be diagnosed properly and receive services when the ASQ:SE-2 is administered compared to the ASQ-3.

Summary

Several studies agree that providers lack SE using the ASQ:SE-2 diagnostic screening tool, highlighting a need to improve provider knowledge and confidence in identifying social and emotional delays. Bandura and Walters (1977) explain that mastery experiences are the most influential source of SE because they prove that individuals can succeed by implementing changes based on their belief in their own SE. The training intervention needs to establish a systematic method that providers can easily integrate into their 30–60-month WCC and use repeatedly for social and emotional development screening with the ASQ:SE-2. If providers encounter obstacles, they can use the SE training intervention as guidance and adapt their application methods to fit their specific clinical practice settings. The ASQ:SE-2 has also been shown to increase the identification of social and emotional deficits and referral rates for EI services compared to general developmental screening tools like the ASQ-3.

The ASQ:SE-2 reports a child's communication skills, response to cues, ability to soothe, and ability to establish relationships (Anis et al., 2020; Juul et al., 2020). This QI project intended to enhance provider SE in identifying social-emotional deficits in children at 30–60-month WCC visits with a training intervention that used the ASQ:SE-2 rather than relying on provider or caregiver surveillance alone. A core concept imperative to the synthesis review involves the age interval where the ASQ:SE-2 is most effective. Three studies were reviewed for internal consistency using Cronbach's α, which was greater than .70 in age intervals for 30–60-

month WCC visits but less than .70 in age intervals for 6–12-month WCC visits (Anunciação et al., 2019; Bian et al., 2017; Stensen et al., 2018). The ASQ:SE-2 had good psychometric properties for early identification of issues at 30–60-month WCC visits but was less consistent for children under 2 years. Therefore, the QI project focuses on the SE training intervention for providers to screen with the ASQ:SE-2 at 30–60-month WCC visits.

Terminology—such as *young children, ASQ:SE-2*, *developmental delays*, and *developmental screening*—streamlined the database search process, providing the best available EBPs to support SE training interventions that empower clinical decisions in this QI project. The research supports that the ASQ:SE-2 is more than a screening tool but an educational outlet that providers can use at WCC visits to increase knowledge specific to social and emotional development in early childhood with families. A factor that consistently came up in every study was the reliability, sensitivity, and specificity of adapted and translated ASQ:SE-2 versions, which were less consistent than the original version for WCC visits under 24 months (Velikonja et al., 2017). Even though the literature reviewed varied, the results were consistent: using the ASQ:SE-2 can improve SE in early educators and healthcare providers, and the ideal age interval for screening is 30–60 months.

Chapter III

Introduction

The foundation for the QI project is its theoretical framework, which supported the construction and implementation of the SE training intervention in a primary pediatric care setting. The selected theories bridge the gap between theoretical approaches and clinical applications. The Brookes system was used for long-term ASQ:SE-2 implementation. Specifically, the QI project integrated the two-part SE training intervention into each participating provider's clinical environment. Bandura's SET supported the SE training intervention by implementing the SE-12 Questionnaire pre and postintervention, repetition of clinical case studies to reinforce mastery, and anonymous communication and feedback with other providers. LCT was essential for the long-term change process in the clinical setting and used to distribute and collect ASQ:SE-2s from caregivers at WCC visits and make recommendations based on the ASQ:SE-2 scores.

Bandura's Self-Efficacy Theory

Albert Bandura's SET is the primary theoretical model underpinning this QI project. SET is based on the belief that a person's ability to accomplish a new skill, gain SE, and feel proficient in their unique skill increases their likelihood to carry out a new behavior for their well-being (Bandura & Walters, 1977). According to Bandura and Walters (1977), SET is based on four fundamental principles: mastery of experiences, vicarious experiences, verbal persuasion, and physical/emotional arousal. The SE training intervention focused on enhancing the provider's ability to screen the behaviors of child patients at WCC visits and make effective clinical judgments, including EI service referrals.

Mastery Experiences

The best way to master a new skill or improve performance is through repetition; therefore, continuous learning aids mastery (Leigh, 2008). The SE training intervention's online activity supports mastery by providing scenarios and case studies from ASQ:SE-2 screenings at 30–60-month WCC visits, enabling providers to gain success and confidence with repetition. Case studies are a safe, judgment-free option that providers can use to review example ASQ:SE-2 scores in each domain, allowing them to practice appropriate actions to take based on the ASQ:SE-2 cut-off score, schedule follow-up WCC visits in 2–3 months, or refer patients to EI services if their cut-off scores are elevated in more than one domain—all in a simulated environment. Mastery of experiences comes from the confidence one obtains when achieving success in a new task (Bandura & Walters, 1977). Having the provider review the ASQ:SE-2 with the caregiver and summarize the results before the WCC appointment would give the provider time to master the experience of screening for social and emotional delays, increasing their SE with daily repetition. Small successes, including integrating the SE training intervention into their clinical workflow, would increase SE, guiding small triumphs in other 30–60-month WCC screening situations.

Vicarious Experiences

Vicarious experiences can improve SE by fostering mentorship among providers, especially those in similar fields, through dialogue or observation of another's performance (Bandura & Walters, 1977). Establishing a relationship with knowledgeable, experienced role models—especially other providers that display healthy SE levels—can inspires positive behaviors and self-confidence. Providers in the primary pediatric care setting can interact with other providers using the Brookes system for ASQ:SE-2 screening to leverage vicarious experiences; this approach is included in the QI project's online training intervention (Appendix

J). Other providers who use the ASQ:SE-2 can serve as mentors and coach other providers when they encounter obstacles by providing a positive model of success.

Verbal Persuasion

Verbal persuasion is when an individual believes they can perform a task (Bandura & Walters, 1977), and it demonstrates the positive impact that our words can have on a provider's SE. In the context of this study, communicating to a provider that they are capable and have the necessary support to manage any challenge can encourage, motivate, and add to their growing belief in their ability to succeed. Positive feedback and encouragement through the Brookes system and use of this QI project's SE training intervention when a question arises can improve SE and enable providers to tackle self-management goals successfully. Successful efficacy builders place people in situations where they are likely to succeed (Bandura & Walters, 1977). For example, when providers discuss ASQ:SE-2 scores with caregivers, they reinforce SE by setting goals, including selecting appropriate developmental activities, which improves chances of success and positive feedback related to the ASQ:SE-2 at 30–60-month WCC visits.

Physical/Emotional Arousal

The fourth principle influencing SE is physical/emotional arousal, achieved by reducing the caregiver and patient's stress reactions (Bandura & Walters, 1977). Emotional and physiological arousal are vital considerations for improving provider SE and essential to the SE training intervention, particularly for promoting overall health and wellness in the development and maintenance of SE. Providers must identify potential struggles to establish a healthy level of SE as it is undoubtedly easier to boost SE when obstacles are removed; therefore, decreasing physical/emotional arousal (e.g., allowing adequate time for screenings and ASQ:SE-2 collection, supporting families) can contribute to improved SE. For this QI project,

physical/emotional arousal is achieved by encouraging caregivers, staff, and EI service providers to reinforce the goals identified by the provider and not become frustrated when ASQ:SE-2s are either incomplete or not completed prior to appointments. Perceptions can influence the SE of, and clinical decisions made by providers, such as encouraging them to use an EBP screening tool, connect with caregivers, refer patients to EI services, persevere with new changes, and maintain change long-term (Bandura & Walters, 1977).

Applying the SET theory to this QI project was expected to improve provider SE regarding surveillance and screening for social and emotional development at 30–60-month WCC visits, which will be instrumental in connecting families with EI resources.

Lewin's Change Theory

LCT, the theoretical foundation for integrating the SE training intervention into the clinical setting, suggests change is based on a three-step model: unfreezing, change, and refreezing (Bakari et al., 2017). Reinholz and Andrews (2020) explain that in LCT, restraining forces counteract driving forces, hindering change because they push the patient in the opposite direction and shift the equilibrium. Thus, implementing the SE training intervention with the Brookes system (for distribution and collection of ASQ:SE-2) will be disruptive, pitting the driving forces to integrate EBP research against current restraints in the clinical practice.

Unfreezing

Unfreezing involves a shift in status equilibrium and identifying that shift—the most significant driving forces—is the first step toward change. Recognizing these driving forces—such as verifying problems; highlighting successes; and reducing restraining forces, individual resistance, and group conformity—serves to motivate individuals to change (Shirey, 2013). The primary driving force for this QI project is to increase provider SE. The unfreezing stage for this

project is when providers recognize and agree a gap exists in EBP, then adopt the SE training intervention activities to improve social and emotional developmental screening with the ASQ:SE-2. In particular, this stage includes applying the SE training intervention to questions and concerns providers have for integrating the ASQ:SE-2 into their clinical setting. The activities in this project's SE training can also be used to identify resisting forces, including the electronic distribution of the ASQ:SE-2 through the Brookes system, collection, storage, score calculations, referral recommendation, and billing.

Change

Change is the transition phase of LCT and is the most difficult because of the unpredictability of individual reactions to change (Shirey, 2013). For the project, the change phase integrated the SE training intervention—specifically the screening protocol for ASQ:SE-2 screening protocol activity (see Appendix K)—into the clinical setting and evaluated how stakeholders approved or rejected change. The intent was for providers to consistently incorporate the ASQ:SE-2 screening tool in their pediatric clinic setting at 30–60-month WCC visits. The DNP student assisted primary care providers by streamlining access to the ASQ:SE-2 through the Brookes system and collecting SE-12 questionnaires prior to and 30 days after the SE training intervention, which were used to generate pre and posttraining intervention scores.

The ASQ:SE-2 can be completed at home by the caregiver and reviewed with the provider at the WCC visit, which is an essential element of LCT's change stage for this project. Numerous stakeholders identify social and emotional deficits early in childhood, including healthcare providers, educators, daycare providers, caregivers, patients, mental health providers, and EI services providers. The identified resisting forces to possible change were mostly logistical, including providers' knowledge using the Brookes system to electronically distribute

and review ASQ:SE-2s, which enables providers to revisit the SE training intervention as needed. Therefore, the change stage of LCT for this QI project requires providers receive support to increase their SE in ASQ:SE-2 evaluations, realized through the SE training interventions.

Refreezing

The final step in LCT is refreezing, which involves integrating the SE training intervention into an existing setting and establishing a new equilibrium; this process requires balancing the driving and resisting forces after the change occurs by revisiting the newly adopted change (Shirey, 2013). The refreezing phase in this project followed the SE training intervention activities and evaluated data metrics and feedback (i.e., data collection; enabled through the Brookes system) to help sustain the change of integrating the ASQ:SE-2 in the clinical practice setting.

For this QI project, the LCT framework increased the probability that SE training intervention change would be sustained using feedback.

Institutional Review Board

The QI project was proposed and approved in April 2021 by the University of Nevada Las Vegas (UNLV), School of Nursing, and the DNP project committee. Several primary care providers in SLO county approved the SE training intervention for implementation in their clinical settings. The QI project was granted an exemption from the Institutional Review Board (IRB; detailed in Appendix L) since the project is a SE training intervention only reviewing anonymous provider data.

Summary

Appendix H depicts the application of SET and LCT in this QI project. SET focused entirely on enhancing provider SE through a training intervention that used the ASQ:SE-2 in

clinical practice. LCT evaluated the social environment of the clinic, identifying potential barriers and facilitators for the adoption and integration of the SE training intervention in the primary care setting. Finally, SET critically evaluated the SE-12 Questionnaire pre and postintervention scores to determine if the intervention had a statistically significant effect on provider SE.

Chapter IV

Introduction

This chapter discusses the setting, sample, procedure, project tasks, team, outcomes, instruments, and timeline for this QI project (Appendix C).

Needs Assessment

Healthcare providers at 30–60-month WCC visits do not provide surveillance and screening consistently for social and emotional developmental delays with the ASQ:SE-2 due to lack of training; the interventions in this project intended to improve SE using this EBP screening tool. The First 5 of the SLO chapter conducted a needs assessment on significant pediatric healthcare issues in California and initiated a program to expand effective practices in the mental health system in the county. The First 5 of SLO approached primary care providers to integrate a consistent, systematic training intervention designed to increase surveillance and screening of social and emotional developmental delays in the pediatric population; the organization provided county and state funding to support regular screenings for children under 6 months at WCC visits. The First 5 of SLO and county primary care providers assessed the needs of pediatric patients in the community and agreed that a SE training intervention for providers would be beneficial.

Appendix B outlines the needs assessment for the DNP project SE training intervention. The needs assessment is the backbone for the SE training intervention because the intended outcome was to improve provider SE related to social and emotional development screening. The patients identified as most receptive to developmental delay screening and EI services were children under 60 months. This age group's brain is subject to rapid neurological growth and

pliability; these children are also vulnerable to their environments, making milestone screening necessary to ensure optimal development (Bekman et al., 2017).

Project Plan

Setting

The setting for the SE training intervention was an outpatient primary pediatric care clinic in SLO with access to the Brookes system, an electronic screening platform that providers can use for ASQ:SE-2 distribution, collection, scoring, activities, and recommendations based on raw scores. The SE training intervention included online and handout activities that providers could use for surveilling and screening children 30–60 months of age in the outpatient primary pediatric care setting.

Population of Interest

The intended convenience sample comprised 18 eligible healthcare providers in SLO county's primary pediatric clinic setting who were invited to participate. Eligibility criteria included medical doctors (MDs), nurse practitioners (NPs), and physician assistants (PAs). Providers needed to be in a primary pediatric clinic that conducted 30–60-month WCC visits daily and had established relationships with EI service providers. In addition to the above criteria, primary outpatient providers with access to the Brookes system as well as providers with at least one year of clinical experience at a family primary pediatric care practice were eligible to participate in the SE training intervention. Providers not meeting the above criteria were excluded.

Measures, Instruments, and Activities

Providers who participated in the QI project required access to the Brookes system, an electronic medical record (EMR) system, and a computer to complete the SE intervention online

activities. Appendix E contains the consent form providers agreed to as part of the SE training intervention, including the pre/postintervention SE-12 Questionnaire. After completing the pretraining SE-12 Questionnaire, participating providers completed the online SE activity, including the CD-ROM and StatPearls CME/CE activity in Appendix J (Malik & Marwaha, 2022). Appendix I contains the approval notice for the DNP student to use the Brookes system for the SE-12 Questionnaire, SE-12 training intervention, and ASQ:SE-2.

Brookes System

The QI project used the Brookes system, which records and uploads the results of ASQ:SE-2 screenings at WCC visits into the EMR system. Visits are labeled and identified as having social-emotional concerns, borderline social-emotional concerns, or no social-emotional concerns, which can be valuable for providers to evaluate WCC visits and reinforce SE. In addition, the Brookes system is an educational resource for providers when recommending activities to families, which can strengthen and support provider SE by facilitating communication with other providers using the Brookes system and evaluating their clinical decisions.

Self-Efficacy Questionnaire

The DNP student measured provider SE levels pre and posttraining using the SE-12 Questionnaire. This questionnaire is composed of 12 questions regarding an individual's belief in their ability to perform a specified task successfully (Axboe et al., 2016), and it can detect varying degrees of SE based on a Likert scale. Therefore, the score calculations and results are simple to interpret and clearly indicate provider SE in screening children for social and emotional developmental delays. The DNP student contacted the creator of the SE-12 Questionnaire via email to modify its original version and was granted permission based on the

Attribution 4.0 International to share and adapt the questionnaire for this QI project (Appendix I). The SE-12 Questionnaire took participants approximately 5 minutes to complete.

Online Self-Efficacy Activity

The online SE activity was the first component of the QI project, titled "Developmental Stages of Social-Emotional Development in Children"; this activity was offered through StatPearls and enabled the provider to receive 1.75 CME or CE credits (Malik & Marwaha, 2022). The online SE activity content validity, including clarity and readability, was recommended based on content in StatPearls. Malik and Marwaha (2022) explain that online SE activity is based on the stages of human growth and development, including developmental milestone competencies and the eco-biological model of development (i.e., the interaction between environment and biology and their influence on a child's development). Appendix J shows the relevance of the online SE training intervention and how the ASQ:SE-2 can be reviewed by providers as needed when questions arise in their clinical setting.

Handout Self Efficacy Activity

The second component of the QI project was the handout SE activity, including screening protocol for distributing the ASQ:SE-2 in the outpatient primary healthcare setting (Appendix K), toolkits, sample case studies, and referral tips. The handout SE activity, described in Appendix K, included self-study activity completion, 21 post assessment questions, an evaluation form, and certification with a passing test score. The provider had the option to revisit the online or handout SE activities anytime during the study period. Providers could also implement the screening protocols into their clinical setting, allowing them to identify appropriate WCC visits for ASQ:SE-2 surveillance and screening with the Brookes system.

Healthcare providers could also use the handout training activity, including the screening protocol in Appendix K, to communicate between staff, reinforcing SE in social and emotional development surveillance and screening. After completing the online and handout SE activities, providers distributed the ASQ:SE-2 at 30–60-month WCC visits and determine the appropriate interventions based on a calculated raw score that indicated whether a child should be monitored, rescreened, or referred for EI service.

Timeline

The QI project timeline was based on four phases: preintervention, SE training intervention, implementation, and postintervention. The preintervention phase, which lasted 2 weeks, gave providers time to (a) complete the SE-12 Questionnaire to obtain a pretraining intervention score, (b) set up their Brookes system account, and (c) gather both components of the SE training intervention (i.e., handouts and the online SE activity accounts through StatPearls and CD-ROM). After providers completed the pretraining intervention SE-12 Questionnaire, they received access to the online and handout SE activities for 2 weeks to complete the SE training intervention. Upon completing the SE training intervention phase, providers were encouraged to apply the information from the online SE activities to 30–60-month WCC visits for 30 days (i.e., the implementation phase) and revisit the SE training interventions at their convenience. Following the 30-day implementation phase, providers completed the SE-12 Questionnaire again; these scores were compared to their pretraining intervention scores to determine if a statistically significant change occurred in SE based on the training intervention (postintervention phase).

Key Stakeholders

The DNP project training intervention enabled providers to improve their SE in social and emotional delay screening; therefore, the potential beneficiaries of this research are the 7,074 children in SLO county between the ages of 30–60-months who will have the opportunity for consistent and systematic screenings at WCC visits (Counts, 2017). The project sponsors were outpatient primary pediatric care clinics in SLO and First 5 SLO. In addition, there were numerous external stakeholders involved in identifying social and emotional deficits in children, including healthcare providers, educators, daycare providers, caregivers, patients, mental health providers, and EI services. According to Counts (2017), primary healthcare providers in the rural community of SLO include MDs, NPs, and PAs; collectively, 2,025 WCC visits in 2020 between 30–60 months could have benefited from the SE training intervention and ASQ:SE-2 screening. Other key external stakeholders include the DNP committee chair, committee members, and insurance companies as there is interest in decreasing the cost of treatment for long-term mental health conditions and increasing EI services to improve pediatric patient outcomes. Key internal stakeholders include providers in SLO and caregivers, who typically complete the ASQ:SE-2 screening at home for review at WCC visits. Brookes, the online system manufacturer for the ASQ:SE-2, can also gain from this project's success; however, the most important stakeholders are the patients and caregivers due to the impact of this study on the child's development in terms of lifelong social and emotional skills before entering the education system, confidence, and coping mechanisms that facilitate learning. In addition, there is potential to increase provider SE with this training intervention by consistent surveillance of and screening for social and emotional development issues at WCC visits; such practice increases the potential for identifying deficits and improving patient outcomes with access to EI services.

Personnel and Project Tasks

The personnel for the DNP project included the DNP student, Alison Borgsmiller; DNP project chair Dr. Rhigel Jay Alforque Tan; DNP project committee, including Dr. Reimund Serafica and Joseph Morgan, Ph.D.; UNLV statistician Dr. Song; primary healthcare providers in SLO county; and First 5 of California SLO. As the project lead, the DNP student obtained informed consent from providers volunteering for the QI project through an electronic invite recruitment letter and assigned an anonymous numerical code to those who agreed to the study. In November 2021, the DNP student emailed participating providers the SE-12 Questionnaire to obtain pretraining intervention scores; the SE training intervention, including the online and handout SE activities, was distributed to participants immediately after informed consent was received. A second SE-12 Questionnaire (see Appendix D) was emailed to providers 30 days after they completed the SE training intervention to obtain a posttraining intervention score. After this date, the providers could consistently use the ASQ:SE-2 EBP screening tool in their clinical settings. With the support of Dr. Song, the DNP student used a paired *t*-test to examine the difference between pretraining and posttraining scores to measure the significance of the training intervention on provider SE.

Project tasks included identifying and contacting the sample of providers in the rural community. Preintervention phase tasks included obtaining informed consent and having providers complete the SE-12 Questionnaire (see Appendix M for preintervention training scores). SE intervention and implementation phase tasks relied on participants to complete the training intervention and apply lessons learned for 30 days in their clinical settings. Finally, postintervention phase tasks included electronically sending the SE-12 Questionnaire to provider participants to complete (see Appendix M for postintervention training scores) and data analysis. The DNP student compared the SE-12 Questionnaire pre and postintervention training scores

using a paired *t*-test to determine if a statistically significant change occurred in SE based on the training intervention.

Cost-Benefit Analysis

The Center for Disease Control determined that social-emotional deficits, including mental disorders, affect an estimated 5% to 20% of preschool-aged children, imposing a significant economic burden on children, family, and society with an estimated cost of $2,631 per child per year in the United States, or a total cost of $10.9 billion annually (Suryavanshi & Yang, 2016). The cost-benefit analysis for primary pediatric care clinics to independently purchase the Brookes system would take approximately 100 WCC visits to cover the expense of the online system. Streamlining the referral process will decrease labor hours in recouping the cost of the Brookes system based on provider SE, which is instrumental for the consistent screening of social and emotional developmental delays and can be billed at WCC visits. Integrating the ASQ:SE-2 into WCC visits is a feasible, cost-effective plan and can be billed to Medicaid and private insurance under the ICD: 10 code Z13.4 encounter for screening certain developmental disorders and billed for $59.90, in addition to the cost of the WCC visit (Marks, 2020). The ASQ:SE-2 is also associated with little to no expense to the clinic because it can be completed at home with minimal staff involvement and uploaded automatically to the Brookes system. Increasing provider SE will connect identified WCC visits with EI services, improving patient outcomes while simultaneously decreasing the long-term cost of mental health over an individual's lifespan.

Resources and Support

First 5 of California received funding from Proposition 56, the tobacco tax, which will fund pediatric behavioral health services in SLO County. The state has allotted and distributed

funding for integrating an EBP diagnostic tool for social and emotional development screening at WCC visits in the pediatric primary care setting. First 5 SLO agreed to pay the initial expense of $2,000 to primary pediatric care clinics to integrate the Brookes system with their existing EMR system. In addition, the First 5 SLO has funding to offer study participants unlimited access to the CME/CE courses offered by StatPearls until August 2022.

Appendix K details the screening protocol, a component of the handout SE activity; a caregiver can complete the ASQ:SE-2 with the guidance of a health educator or independently. The training intervention aligns with the goals established between primary pediatric care clinics and First 5 SLO because provider SE is a significant factor; therefore, both parties granted permission to the DNP student to utilize their existing Brookes system for the QI project. Bravo Pediatrics, a primary pediatric care clinic in SLO contracted with First 5 SLO, granted the DNP student time and access to accomplish the QI project (see Appendix G).

Risks and Threats

The first identified risk included obtaining an adequate number of providers for the QI project, based on the county's limited number of primary care providers. Another potential threat to the QI project was that primary care providers lacked time to complete the SE training intervention. In addition, the Brookes system is a new electronic system in the rural community of SLO and is not widely accepted; however, the DNP student was available to assist in setting up electronic accounts for each provider and allocate funding from the First 5 SLO. Actual threats included providers not completing the entire SE training intervention in the designated timeframe, which would impede accurate data collection. Enabling providers to access the SE-12 Questionnaire and SE training intervention at home online and through handouts gave providers adequate time to participate in the study. Free CME/CE credits further incentivized participation.

Institutional Review Board Approval

The UNLV IRB received an approval letter of exclusion to implement and complete this QI project (Appendix L). Informed consent was sent via email to the sample population of healthcare providers in SLO county; these providers were invited to complete the SE-12 Questionnaire anonymously for a pretraining intervention score (Appendix M). Demographic information was collected by the DNP student, including provider role (i.e., MD, NP, or PA). The inclusion criteria for the SE training intervention included primary healthcare providers in SLO; these providers were sent a recruitment letter, detailed in Appendix G. Providers who consented to the QI project were assigned a numerical code and could not be identified by another individual in the SE-12 Questionnaire pre and posttraining intervention data. Appendix G also explains that participation in the project is voluntary, and the participant's numerical code ensures they cannot be identified by another provider, DNP student, DNP committee, or their employer.

Evaluation Plan

The QI project utilized a pre and postintervention model to evaluate the project. Providers completed the SE-12 Questionnaire online initially for a preintervention score and 30 days after using the SE training intervention in their clinical setting for a posttraining intervention score. The paired *t*-test was used to determine if a statistically significant change occurred between pre- and post-SE-12 Questionnaire scores—that is, if provider SE improved in the context of surveilling and screening children 30–60 months of age for social and emotional development at WCC visits using the ASQ:SE-2.

Conclusion

A review of current literature proves that SE in healthcare providers in rural primary care settings lack strong SE for surveilling and screening for social and emotional developmental delays using an EBP screening tool like the ASQ:SE-2. The DNP student provided SLO county–based providers in primary pediatric care clinics with the SE training intervention through email and an online electronic format (see Appendix J for link and Appendix K for handout activity). The training intervention included a comprehensive approach to build SE in providers when screening for social and emotional developmental deficits in children 30–60 months at WCC using the ASQ:SE-2.

Chapter V

Introduction

The phenomenon of interest for the QI project was to see if provider SE in identifying, diagnosing, and referring social and emotional developmental delays at children 30–60-month WCC visits would increase with training. This section contains an overview of the QI project's implementation, data collection, statistical results, discussion, and future expansion for clinical practice, research, and public health initiatives. Participation in the project and data collection was conducted through SurveyMonkey. After consenting to participate in the project and 30 days after finishing the intervention, providers received the SE-12 Questionnaire via SurveyMonkey and completed the questions. Pre and postintervention scores were analyzed in Statistical Package for the Social Sciences (SPSS). The DNP student compared the scores to determine if the intervention increased healthcare provider SE in surveying and screening for social and emotional development issues in 30–60-month-old children.

Implementation

Initially, the DNP student emailed 18 primary care providers anonymously through SurveyMonkey. Once the provider completed the informed consent, they received a random numerical code. Out of the 18 providers emailed, 10 providers (55%) met the inclusion criteria; these participants were MDs, PAs, or NPs with access to the Brookes system and EMR system who had worked in a primary care clinic for at least a year and oversaw 5–10 WCC visits daily. The 10 providers accepted the recruitment letter and completed the informed consent (see Appendix G). The 10 providers completed the SE-12 Questionnaire before the intervention (preintervention score). The SE-12 Questionnaire (Appendix D) was based on SET and used a 10-point Likert scale ranging from 1 (very uncertain) to 10 (very certain) to ascertain participant

SE (Axboe et al., 2016). Questions targeted core practices, such as high leverage changes that could promote SE in providers, promote referrals for EI services, increase caregiver knowledge related to social and emotional development, and improve mental health outcomes over an individual's lifespan (Axboe et al., 2016).

After completing the preintervention SE-12 Questionnaire, participants received the SE training intervention, including the online and handout SE activities. Following this SE training intervention, objectives for providers included understanding the aim and goals of social and emotional developmental screening and determining their SE for surveillance and social and emotional development screening at 30–60-month WCC visits with the ASQ:SE-2. As a result, providers could learn how to identify gaps in their SE and generate critical strategies to minimize those gaps, leading to a better understanding of social and emotional development, stronger ability to support caregivers and children with delays in the scope of WCC visits, and confidence for referring patients for EI services. In addition, providers could track WCC visits and communicate with other providers and EI service providers through the Brookes system, even use the system to interpret ASQ:SE-2 scores at WCC visits, conduct data analysis, and facilitate discussion with caregivers.

Providers implemented the lessons learned from the training intervention in their clinical settings for 30 days; afterward, they completed a second SE-12 Questionnaire to generate a postintervention score. The postintervention questionnaire allowed providers to reassess their SE after (1) receiving and implementing the training intervention and (2) using the ASQ:SE-2 consistently in their clinical practice setting for 30–60-month WCC visits. The pre and postintervention scores were analyzed to identify whether the intervention caused a statistically

significant change in SE. Descriptive statistics, including frequencies and means, were also examined among provider responses pre and posttraining intervention.

Methodology

The QI project used a paired *t*-test for data analysis. First, the statistical significance was predicted or determined by reviewing the *p*-value. Differences between the mean scores were then assessed: the lower the mean difference, the higher the statistical significance. The paired *t*-test compared overall pre and posttraining intervention results related to SE gained from the training intervention. For example, the results would indicate if the results were statistically significant based on each provider's pre and posttraining SE-12 Questionnaire scores. Data analysis reviewed each question of the SE-12 Questionnaire separately, quantitatively reviewing pre and postintervention scores, which are provided in Appendix M.

Results

Demographic Statistical Results

SPSS version 26 was used for the demographic and descriptive analysis. Of the 10 providers that participated and completed the SE training intervention, 60% were MDs, 30% NPs, and 1% were PAs. Table 1 displays the demographics.

Table 1: Demographics of Participants

Role	Frequency (*n*)	Percent (%)	Valid Percent (%)	Cumulative Percent (%)
MD	6	60.0	60.0	60.0
NP	3	30.0	30.0	90.0
PA	1	10.0	10.0	100.0
Total	10	100.0	100.0	

Descriptive Statistical Results

Of the 10 participants who completed the preintervention SE-12 Questionnaire (n =10), SE training intervention, and postintervention SE-12 Questionnaire, the preintervention mean score was 77, depicted in Table 2. The scores on the SE-12 Questionnaire ranged from 0 to 10, with a higher score indicating a higher SE level. For those providers who completed the SE-12 Questionnaire postintervention (n = 10), there was a mean increase in the total score of 28.4, which was statistically significant (p = .001).

Table 2: Pre- and Post-SE-12 Questionnaire Paired Statistics

	Mean	***N***	**Std. Deviation**	**Std. Error Mean**
Pre-SE-12 Questionnaire	77.0000	10	6.43256	2.03415
Post-SE-12 Questionnaire	105.4000	10	15.18771	4.80278

Note. The range for SE-Questionnaire scores was 12–120.

Table 3: Comparison of Pre- and Post-SE Scores

	Mean	**Std. Deviation**	**St. Error Mean**	**Lower Limit**	**Upper Limit**	***t***	***df***	**Sig. (2-tailed)**
SE-12 Pre SE-12 Post	18.40	14.0886	4.455521	18.32162	38.47838	6.375	9	<.001

Table 3 presents the paired t-test data for the SE-12 Questionnaire pre and postintervention. A paired sample t-test includes four steps calculating the sample mean, sample standard deviation, the test statistic, and the probability of observing the test statistic under the null hypothesis (Kent State University, 2021). Comparing preintervention and postintervention

effect on the SE-12 scores of each question from the SE-12 Questionnaire, questions 1 through 12 all showed an increase in scores, but the most statistically significant questions were 1, 3, 5, 6, 7, 9, and 12. The change in pre to postintervention scores was statistically significant in 7 of the 12 questions, including question 1 ($p = .009$), question 3 ($p = .001$), question 5 ($p = .001$), question 6 ($p = .004$), question 7 ($p = .011$), question 9 ($p = .002$), and question 12 ($p = .011$). Two of the participating providers provided anonymous posttest feedback about the training intervention. The first anonymous provider stated, “The caregiver who completes the questionnaire is more focused and happier to discuss social and emotional development, providing a focus and positive visit that increases my self-efficacy in using the ASQ:SE-2.” The second anonymous provider stated, “The training intervention increased my self-efficacy because it’s a simple way to catch delays early.” Ninety percent of providers thought the training intervention was an important part of their work and SE and intended to continue screening with the ASQ:SE-2 at 30–60-month WCC visits to survey and screen for social and emotional development.

Chapter VI

Discussion

Most of the QI project participants were MDs (60%), consistent with the current estimated rates of primary care providers in rural SLO County. According to Counts (2017), the estimated number of primary care clinicians in SLO County in 2017 was 143 per 100,000 people, including 86 physicians and 57 non-physician primary care clinicians per 100,000 people. There is no correlation between provider role and baseline SE, but a correlation was noted for the postintervention SE-12 Questionnaire results. If a participant had a SE-12 preintervention score above 100, there was a slight improvement in SE after the training intervention. The SE training intervention showed a statistically significant increase in the SE-12 Questionnaire postintervention score compared to the SE-12 Questionnaire preintervention score.

In terms of theoretical underpinnings, the DNP study results reinforce both SET and LCT depicted in the schematic diagram in Appendix H. The SE training intervention increased provider SE based on the paired *t*-test results that found a statistical significance between pre and postintervention SE-12 Questionnaire scores. Further, LCT proved effective as providers implemented what they learned from the SE training intervention into their workflows to diagnose issues, refer to EI services, and schedule follow-up appointments. The final phase of the LCT—the freezing phase—reinforced SE as the DNP student shared the postintervention questionnaire score with the provider and recommended the provider use the ASQ:SE-2 in clinical settings. The providers that participated in the SE training intervention and completed all SE-12 questionnaires exhibited increased SE identifying, diagnosing, and referring patients with social and emotional developmental delays. Participating providers had 5–10 WCC visits daily with children 30–60 months of age and at various developmental milestones; these providers

almost daily answer caregiver questions related to their child's development. Participating providers' SE and ability to identify social and emotional developmental deficits in early childhood improved, including their ability to use the ASQ:SE-2 to identify issues and refer child patients to EI services. The DNP project's results, providers can implement the ASQ:SE-2 effectively and efficiently in primary care clinics using the Brookes online system to disperse, calculate, and provide recommendations based on a raw score.

This QI project's results have implications for improving provider SE as it pertains to identifying social and emotional development delays during WCC visits; providers could benefit from a SE training intervention with an EBP screening tool like the ASQ:SE-2. The extensive literature review reinforces the findings of the DNP project, that providers can implement the ASQ:SE-2 effectively and efficiently in primary care clinics using the Brookes online system to disperse, calculate, and provide recommendations based on a raw score. The DNP project aligns with the literature review results demonstrating that providers' SE levels increased after the SE training intervention. However, the QI project did not increase provider SE when screening for social and emotional development in children 30–60 months at WCC visits when the provider's initial SE-12 Questionnaire score was greater than 100.

Limitations

There were several limitations with this QI project. The convenience sampling did not reach all intended providers in the primary pediatric care clinic setting and may overinflate the results of the SE training. Providers who are more willing to participate in this QI project and focus on improving their SE screening for social and emotional development in early childhood may have more free time and interest in enhancing EI services in their rural community. This QI project also did not question patients regarding their gender, race, ethnicity, or the demographics

of their clinic's population based on socioeconomic status (SES), limiting the project's generalizability. A significant limitation of the study was the IRB exemption, which only allowed the review of anonymous provider data and not patient data—for instance, whether the training intervention was implemented correctly at 30–60-month WCC visits and if the ASQ:SE-2 screening process altered the identification of and referral rates for EI services.

The COVID-19 pandemic greatly influenced the QI project. Two providers recruited for the study but unable to participate indicated that their primary barrier to participation was a lack of time to complete and implement the training intervention in their clinical setting as they were managing patients amid the COVID-19 pandemic. The most significant barrier was getting the SE training intervention material to providers during the pandemic amid the Omicron surge. The SE training intervention included online and written SE activities and needed to be presented electronically or delivered to participants to ensure safety and COVID-19 guidelines. Reaching providers through email proved to be a slight barrier because the participants had to open the email and take time to complete the SE-12 Questionnaires. Some providers contracted COVID-19 during the training intervention and could not participate.

Several insights were uncovered throughout project implementation and monitoring, such as the need for continued support and opportunities for project expansion. While providing support, the DNP student continuously checked how many providers completed the preintervention SE-12 Questionnaire, primarily Monday through Friday, 8am to 5pm. Provider intervention assignments were altered to accommodate scheduling conflicts and increased patient volume; therefore, not all providers were reachable within 24 hours of contacting the DNP student. The time spent by the participating providers to complete the QI project would be unrealistic if it were not incorporated into billable services at the WCC visit. Primary pediatric

healthcare providers have limited time, and the ASQ:SE-2 must be adequately reimbursed by private and public insurance companies; otherwise, providers would not be able to recoup the costs of the Brookes system, making the decision to integrate the system into their EMR unwise. Therefore, in the future, this QI project may be more sustainable to implement with future AAP recommendations and legislation that reinforces reimbursement from insurance companies.

Recommendation

Results from the QI project will be presented to First 5 California SLO, the SLO Office of Education, and First 5 California Sacramento to expand this QI pilot study statewide. Since the AAP has declared a national emergency in children's mental health, emphasizing the severe toll of the COVID-19 pandemic, an opportunity exists to expand the pilot study, including SE training for healthcare providers to screen and survey for social and emotional development in early childhood and refer patients to EI services. A presentation to the Central Coast Region of Help Me Grow is scheduled for June 2022 regarding the future changes to the AAP guidelines and expanding distribution of the QI projects SE training intervention for screening at WCC visits for social and emotional development throughout the state of California. Working with First 5 SLO has allowed the DNP student to discuss the results of the QI project with the SLO County Board of Supervisors members regarding local population health initiatives, including the data collected from the QI project and potential funding opportunities for 2023.

In April 2021, the DNP student presented the Proposed DNP project at the Western Institute of Nursing, received feedback, and plans to provide an updated presentation in April 2023. The DNP student will share results from the QI project with healthcare providers, clinical educators, mental health agencies, early start program, and SLO Public Health after the DNP Defense is presented and approved by the UNLV DNP committee. SLO county early childhood

development stakeholders have already illuminated the county-wide concern for primary care provider SE related to surveilling and screening for social and emotional development at 30–60-month WCC visits. A health educator or clinical coordinator in primary care clinics can use the Brookes system to distribute ASQ:SE-2 to caregivers before WCC visits. Results— including raw scores—can be uploaded into EMR to view with providers.

Conclusion

Social and emotional deficits affect an estimated 5% to 20% of preschool-aged children. Since there is no universally accepted screening instrument for social and emotional development, many children are not identified as having issues until they enter the education system (Williams et al., 2018). The ideal time in early childhood to survey and screen for social and emotional is under 60 months of age, when WCC visits are frequent. Therefore, providers must cultivate SE using an EBP tool like the ASQ:SE-2 to correctly identify, rescreen, and refer children to EI services as needed. This QI project aimed to improve SE for providers in primary pediatric settings using an ASQ:SE-2-based training intervention to identify social and emotional developmental delays in pediatric patients under 5. Social and emotional development deficits, which impact almost one out of every two adults in the United States, can be chronic conditions and carry a high risk of morbidity and mortality (Williams et al., 2018). This QI project showed that this SE training intervention improved providers' SE in surveilling and screening children 30–60 months of age in SLO county's rural primary care clinics. After completing this training intervention, providers may be more likely to survey and screen for social and emotional development in early childhood with the ASQ:SE-2 due to improved knowledge and SE.

Further efforts are needed to assess the expansion of this QI project to other EBP screening tools that have proven psychometric properties in children under 30 months of age.

The World Health Organization recommends that mental healthcare be part of or integrated into a primary care setting, which is significant to developing nursing resources for mental health, coordinated through mental health policy reform (Ayano et al., 2017). However, provider SE in surveying and screening for social and emotional screening development with a valid tool like the ASQ:SE-2 has created hesitancy; thus, this EBP approach has faced numerous implementation barriers in primary pediatric care settings. Nevertheless, this pilot study and the training intervention give structure and a blueprint for improving provider SE using a statically significant approach.

Project sustainability depends on whether primary care clinics can integrate the Brookes system with the EMR system, allowing providers to view ASQ:SE-2 scores at WCC visits and refer child patients to EI services. Primary care clinics are overburdened with mental health visits, exacerbated by the COVID-19 pandemic; however, systematic screening for social and emotional development will identify patients and provide EI services at a critical stage of development. Caregivers can receive resources for EI services from healthcare providers, but early identification with the ASQ:SE-2 will expedite referrals and decrease unnecessary sick visits regarding social and emotional deficits. With the increased SE providers gained through this training intervention, these providers are less likely to delay referrals to EI services during this critical neurological period for young children and may help decrease long-term mental illness over an individual's lifespan.

Appendix A

Evidence Table

Citation	Setting/Sample	Research Design	Data Analysis	Results	Level of Evidence	Comments
Anis et al. (2020)	Inner-city Agency in Western Canada/ Parents and Children <36 months.	Randomized Controlled Trial	Analysis of Covariance of post-test outcome data. ASQ:3 and ASQ:SE-2, a statistically significant difference between groups observed for the ASQ personal-social scores, F (2) = 3.07, $p < .04$, favoring ASQ:SE-2.	ASQ-SE, a statistically significant difference between groups was observed favoring the treatment group.	II	The intervention maternal-child interaction improves following the Intervention, the ASQ:SE-2 assessment time point for children's development closely followed the end of the intervention.
Anunciação et al. (2019)	Brazilian public daycare preschools of 54,570 children (53% males, 1–5 years old).	Qualitative Study	Item Response Theory (IRT) analysis and classical test theory (CTT) values range from 0.05 to 0.08; they indicate a good/fair fit. ≤0.08, displaying sufficient fit.	The ASQ:SE-2 was developed for clinical purposes, and its scoring system yields an overall result to help identify developmental delay in children 30 months and older.	VI	Results provide validity of ASQ:SE-2. In addition, findings may contribute to a more accurate of children's development and educators who are interested in identifying delays and improving outcomes for young children.
Bian et al. (2017)	China returned ASQ: SE by adapting to the Chinese language (ASQ: SE-C) email and clinic (n = 2,528) children 3–65 months.	Randomized Controlled Trial	Item Response Theory measures the reliability of the ASQ: SE-C ranged from 0.94 to 0.96. Quantitative results using a Likert Scale rated the quality of translation and utility of the ASQ: SE-C as above "sufficient."	ASQ: SE-C, feedback from experts indicated that it should be a valuable tool in identifying children at risk for socio-emotional development.	II	ASQ: SE-C is a valid tool for screening Chinese children and improving SE in caregivers. The lack of a high-quality screening measure has been a barrier to screening young children's socioemotional development.

Juul et al. (2020)	4 Danish municipalities from 17-health districts/ Caregiver and children *n* =1234	Randomized Controlled Trial	Mixed-effects linear regression using the ITT. ASQ: SE showed no significant differences neither in ITT analysis.	A significant effect was noted with mothers who reported a higher level of communication skills with ASQ:SE-2 than the control group.	II	The scores tended to improve both in the intervention and the comparison group with ASQ:SE-2.
Marks (2020)	Primary care, sub-specialty, nurse home visits, early intervention, social service, cross-sector/ US studies (*n* = 90) delays in general (*n* = 32) or at-risk (*n* = 20) populations; primary care medical settings (*n* = 26). Scandinavia (n =36).	Systematic Review	The study used preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines importing all identified references into Covidence systematic review online software. 28% of all studies used the ASQ: SE universally screen a general population, 19% used to universally screen.	ASQ: SE screening increases the early detection and referral of suspected developmental-behavioral problems and EI eligibility rates. Periodic ASQ:SE-2 screenings are sustainable in primary care clinic.	I	The pre-visit screening system includes immediate scoring and provider-to-parent interpretation, completion/return rates of 83% to more than 90%. Fourteen higher-risk groups of children benefited from periodic ASQ or ASQ:SE-2 screening.
Pooch et al. (2019)	Child centers in Florida *n* = 443 children aged 3 to 5 years. ASQ:SE-2 completed in English (39.7%) or Spanish (61%).	Qualitative Study	SPSS to establish reliability of the teacher-report ASQ:SE form. Significant negative correlations between the ASQ:SE total score social skills ($t = -0.261$, $p = .006$), adaptive skills ($t = -0.365$, $p < .001$), and adaptability ($t = -0.342$, $p < .001$).	ASQ:SE-2 scores were high (risk of development of social and emotional difficulties); children tended to score lower on skills that would require social-emotional knowledge, such as social skills and adaptability.	VI	ASQ:SE-2 increases identification of social-emotional delays; it has never been established as a teacher-report instrument.
Stensen et al. (2018)	Childcare centers in Norway/*n* =	QS	The Spearman's	ASQ:SE-2 serves as a good	VI	ASQ:SE-2 depends on

	1395 children aged 18–60 months		correlation between the total scores for the ASQ:SE-2 and the C-TRF were from .49 to .72. ROC analyses demonstrated that the ASQ:SE-2 had a promising ability to classify children at risk based on the C-TRF criterion ranging from .87 to .96 for the different forms.	starting point for screening for social-emotional problems among children. The 30–60-month forms exhibit promising psychometric properties and may prove helpful in early detection.		knowledge of screener and development and observation skills. The ASQ:SE-2 exhibited promising sensitivity and specificity overall.
Velikonja et al. (2017)	Preschools, child psychiatry clinics, hospitals, schools, and community clinics settings/ *N* = 20 studies on children 2–2.5 years of age.	Systematic Review	PRISMA. Positive values for reliability (alpha >0.70 or test–retest reliability >0.80 or ICC >0.70) occurred in 11/18 instances reported and 3 'negative' ratings, for sensitivity in 13/18 instances reported with 3 'intermediate' ratings (0.50–0.70) and 2 'negative' ratings (<0.50)), and for specificity in 19/19 (>0.70) instances reported.	Results showed 'positive' reliability values in 11/18 instances reported, 'positive' sensitivity values in 13/18 cases reported, and 'positive' specificity values in 19/19 cases reported.	I	ASQ:SE-2 questionnaires were more mixed, particularly for culturally specific domains. This highlights the need for cultural and contextual differences when measuring child development and determining what would be appropriate for a child at a given age.
Williams et al. (2018)	2 primary care locations in California/*n* = 608 children 2–60 months. More than	Qualitative Study	Chi-square analyses Significant difference by age in the	More than 600 low-income children ages 2 –60 months, 14% screened	VI	If only the ASQ-3 had been administered, children with positive ASQ:SE-

	half (*n* = 325; 51.8%) of the screenings were completed in Spanish.		proportion of children scoring over the ASQ:SE-2 cutoff ($\chi 2$ [4, n = 607] = 21.741, $p <$ .001, $\varphi =$ .189). Children with positive ASQ:SE-2 screens who were younger than 37 months were significantly less likely to be referred for mental health services (50.9%) compared with those older than 36 months (93.8%) ($\chi 2$ [1, n = 87] = 16.708, $p <$ .001, $\varphi =$ .438).	positive for social-emotional problems on the ASQ:SE-2, a rate comparable to other studies in this age group.		2 screens were significantly less likely to be referred for mental health services. Therefore, physicians should consider screening all young children for social-emotional and behavioral needs and referring those identified for infant and early childhood mental health services.

Appendix B

Needs Assessment

Dear Primary Care Providers,

To better serve San Luis Obispo County and the children within the community, we are attempting to gather information on whether there is a need for surveillance and screening within the healthcare outpatient clinic setting for social and emotional development in children under the age of 5. Please answer a brief survey of questions to assess the community's needs and the children who love San Luis Obispo County.

1. Do you screen for developmental milestones in the clinical setting?
2. If yes, do you specifically survey and screen for social and emotional development?
3. Are you concerned about social and emotional developmental screening as a healthcare provider?
4. Do you have a specific screening tool you as a healthcare provider utilize for social and emotional development in clinical practice?
5. What age interval do you screen for social and emotional development?
6. Do you know where to refer children in San Luis Obispo County for social and emotional developmental deficits?

Appendix C

Detailed Plan and Timeline

Time Period	Associated Task
October 2021	• Determine validity, reliability, and readability of SE training intervention. • Secure IRB exemption from UNLV. • Recruit healthcare providers for the QI project. • Obtain informed consent from each participating provider and establish a numerical code for deidentification. • Each provider completes the preintervention SE-12 Questionnaire. • Set up training sessions for CD-ROM and handout activities for SE training intervention and access their Brookes account. • Develop workflow change process for quality measures for the clinical site by implementing Lewin's Change Theory. • Collaborate with providers to establish dates and times for completing preintervention SE-12 Questionnaire and SE training intervention. • Generate report to measure preintervention SE-12 Questionnaire scores on quality measures using report builder.
November 2021	• Review provider preintervention SE-12 Questionnaire is completed then send providers to link to SE training intervention including CD-ROM and handout activities. • Provide 2 weeks for healthcare providers to complete SE training intervention.
December 2021	• Complete a one-month post training SE- 12 Questionnaire and send an electronic reminder if necessary. • Begin to compile and analyze data from pre and post SE training intervention SE-12 Questionnaire from demographics. • Develop and send out the feedback form to all stakeholders.
January 2022	• Compile and begin analysis of SE-12 Questionnaire pre and post training intervention data. • Collect data from a feedback form and write an analysis. • Complete summary of initiation and implementation. • Identify and summarize threats and barriers to the project. • Document monitoring of the implementation of the SE training intervention, including any variance in delivery and questions. • Summarize processes and procedures for data collection.
February 2022	• Complete data analysis. • Summarize methods of data analysis and rationale for methods. • Complete results and discussion sections of the project. • Identify and summarize project limitations.
March 2022	• Submit project paper draft to Committee Chair for review. • Defend final DNP project at UNLV. • Edit and revise project paper.
April 2022	• Complete final version of DNP project paper and submit to Committee Chair and committee members. • Submit final approved DNP project to Graduate College.

Appendix D

Self-Efficacy-12 (SE-12) Questionnaire for Pre- and Post-SE Training Intervention

The following questions concern selected communication skills regarding the conversation with the caregiver. On a scale from 1–10, where 1 = very uncertain; 10 = very certain

1. How certain can you successfully identify social and emotional developmental delays the caregiver wishes to address during the conversation?

Very Uncertain (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Very Certain (10)

2. How certain can you successfully plan the conversation with the caregiver?

Very Uncertain (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Very Certain (10)

3. How certain can you successfully urge the caregiver to expand on their concerns regarding social and emotional developmental delays?

Very Uncertain (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Very Certain (10)

4. How certain are you that you can listen attentively without interrupting or changing focus?

Very Uncertain (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Very Certain (10)

5. How certain are you that you can successfully encourage the caregiver to express thoughts and feelings related to the social and emotional development of the child?

Very Uncertain (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Very Certain (10)

6. How certain are you that you can successfully structure the conversation with the caregiver about their child's social and emotional development?

Very Uncertain (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Very Certain (10)

7. How certain are you that you can successfully demonstrate appropriate non-verbal behavior, including eye contact, facial expression, placement, posture, and voicing?

Very Uncertain (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Very Certain (10)

8. How certain can you successfully show empathy by acknowledging the caregiver's thoughts and feelings?

Very Uncertain (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Very Certain (10)

9. How certain are you that you can successfully clarify what the caregiver knows to communicate the right amount of information?

Very Uncertain (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Very Certain (10)

10. How certain are you that you can successfully check the caregiver's understanding of the information given?

Very Uncertain (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Very Certain (10)

11. How are you that you can successfully make a plan based on shared decisions between you and the caregiver?

Very Uncertain (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Very Certain (10)

12. How certain are you that you can successfully close the conversation by assuring that the caregiver's questions have been answered?

Very Uncertain (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Very Certain (10)

Appendix E

Consent from Primary Pediatric Care Clinic for access to Brookes System

Bravo PEDIATRICS

Letter of Authorization to Conduct Research at Facility

Office of Research Integrity – Human Subjects
University of Nevada Las Vegas
4505 Maryland Parkway Box 451047
Las Vegas, NV 89154-1047

Subject: Letter of Authorization to Conduct Research at Bravo Pediatrics.

Dear Office of Research Integrity – Human Subjects:

This letter will serve as authorization for the University of Nevada, Las Vegas ("UNLV") researcher/research team, DNP student: Alison Borgsmiller, MSN, FNP-BC, and PI: Dr. Rhigel Jay Alforque Tan APRN, RN, GNP, ANP, PMHNP to conduct the research project entitled **A Quality Improvement Project to Increase Health Care Provider Self-Efficacy in Primary Pediatric Care Clinic Through ASQ: SE-2 Teaching Intervention** at Bravo Pediatrics 3241 South Higuera Street in San Luis Obispo, CA 93401.

The Facility acknowledges that it has reviewed the protocol presented by the researcher, as well as the associated risks to the Facility. The Facility accepts the protocol and the associated risks to the Facility, and authorizes the research project to proceed. The research project may be implemented at the Facility upon approval from the UNLV Institutional Review Board.

If we have any concerns or require additional information, we will contact the researcher and/or the UNLV Office of Research Integrity – Human Subjects.

Sincerely,

Sharon Watson MD

Facility's Authorized Signatory

9/14/21

Date

Dr. Sharon Watson

Printed Name and Title of Authorized Signatory

RENÉ H. BRAVO, M.D., F.A.A.P.
Facility Authorization 2-2015 3241 South Higuera Street San Luis Obispo, CA 93401
ph 805.544.4460 fax 805.544.4019

Appendix F

Informed Consent

UNLV

Informed Consent

Department of NURSING

Title of Study: A Quality Improvement Project to Improve Health Care Provider Self-Efficacy in Primary Pediatric Care Clinic Through Training Intervention

Investigator(s): (PI): Dr. Rhigel Jay Alforque Tan APRN, RN, GNP, ANP, PMHNP

DNP student CO-PI: Alison Borgsmiller, MSN, FNP-BC, RN

For questions or concerns about the study, you may contact **Alison Borgsmiller at (805)704-1210 or Dr. Rigel Jay Alforque Tan APRN, RN, GNP, ANP, PMHNP at (702)895-3115 Office.**

For questions regarding the rights of research subjects, any complaints, or comments regarding how the study is being conducted, contact **the UNLV Office of Research Integrity – Human Subjects at 702-895-2794, toll-free at 888-581-2794, or via email at IRB@unlv.edu.**

Note: Please keep the statement in the box if conducting face-to-face. Delete this entire section if not conducted face-to-face.

It is unknown as to the level of risk of transmission of COVID-19 if you decide to participate in this research study. Therefore, the research activities will utilize accepted guidance standards for mitigating the risks of COVID-19 transmission: however, the chance of transmission cannot be eliminated.

Purpose of the Study

You are invited to participate in a research study. The purpose of this study is a quality improvement project aimed to improve healthcare provider self-efficacy through a training intervention based on utilizing the Ages and Stages Questionnaire: Social-Emotional (ASQ:SE-2), an evidence-based screening tool for identifying social and emotional developmental delays at 30–60-month well-child check visits.

You are being asked to participate in the study because you fit this criterion: As a healthcare provider in a primary pediatric care setting.

Procedures

Suppose you volunteer to participate in this study. In that case, you will be asked to do the following: Complete a pre-self-efficacy training intervention survey called the SE-12 Questionnaire for a preintervention score. Next, complete a 105-minute online self-efficacy training intervention activity and handout training self-efficacy activity. Over the next three months, utilize the self-efficacy training intervention in your clinical practice, including using the ASQ:SE-2 when applicable. After three months, retake the SE-12 Questionnaire for a post-self-efficacy training intervention score.

Benefits of Participation

The benefits of participation in the project include unlimited free continuing education credits for one year through StatPearls for healthcare providers to directly benefit you as a participant in this study. In addition, however, we hope to learn how to utilize training interventions that improve healthcare provider self-efficacy.

Risks of Participation

There are risks involved in all research studies. However, this study may include only minimal risks. The anticipated risk of the project is you may feel uncomfortable when answering questions because you are unfamiliar with the material presented.

Note**: This is only applicable only if conducted face-to-face. Delete this section if not conducted face-to-face. **Please include the measures put in place to mitigate the COVID-19.

Cost /Compensation

There will be no cost to you to participate in this study. However, the study will take 105-minutes of your time and be compensated with 1.75 continuing education credits.

Confidentiality

All information gathered in this study will be kept as confidential as possible. No reference will be made in written or oral materials to link you to this study. All records will be stored in a locked facility at UNLV for five years after completing the project. After the storage time, the information gathered will be confidently shredded.

Voluntary Participation

Your participation in this study is voluntary. You can refuse to participate in any part of this study. You may withdraw at any time without prejudice to your relations with UNLV. You are encouraged to ask questions about this study at the beginning or any time during the research study.

Participant Consent

I have read the above information and agree to participate in this study. I have been able to ask questions about the research study. I am at least 18 years of age. A copy of this form has been given to me.

_____ _____

Signature of Participant Date

_____

Participant Name (Please Print)

Appendix G

Training Intervention Recruitment Letter

Dear Volunteer,

We are writing to see if you would like to participate in a Quality Improvement (QI) project. Self- Efficacy (SE) plays an essential role in understanding healthcare provider decision-making process and clinical judgment for diagnosing and referrals for early intervention (EI) services for social and emotional developmental delays in pediatrics and helps improve mental health outcomes.

Purpose:

- The purpose of the study is to determine an improvement in healthcare provider SE in the utilization of the ASQ:SE-2 determined by the SE training program if a statistical significance is comparing pre and post training program Self-Efficacy-12 (SE-12) Questionnaire scores.

Training Program:

- The training program has two components: an online SE activity that takes 105 minutes to complete, and the handout SE activity includes an ASQ:SE-2 case study, social-emotional toolkit, and referral tips.
- Three months after completing the SE training intervention and using the ASQ:SE-2 screening tool, the healthcare provider will complete the SE-12 Questionnaire for a postintervention score.
- Participation in this QI project is voluntary. Primary care providers will be confidential to other members with a numerical code distributed once the online invitation is accepted through the electronic link through surveymonkey.com.
- Providers that agree to the QI training program will obtain 1.25 CME/CE and unlimited access to StatPearls CME, CE, and MOC credits for the next ten months.

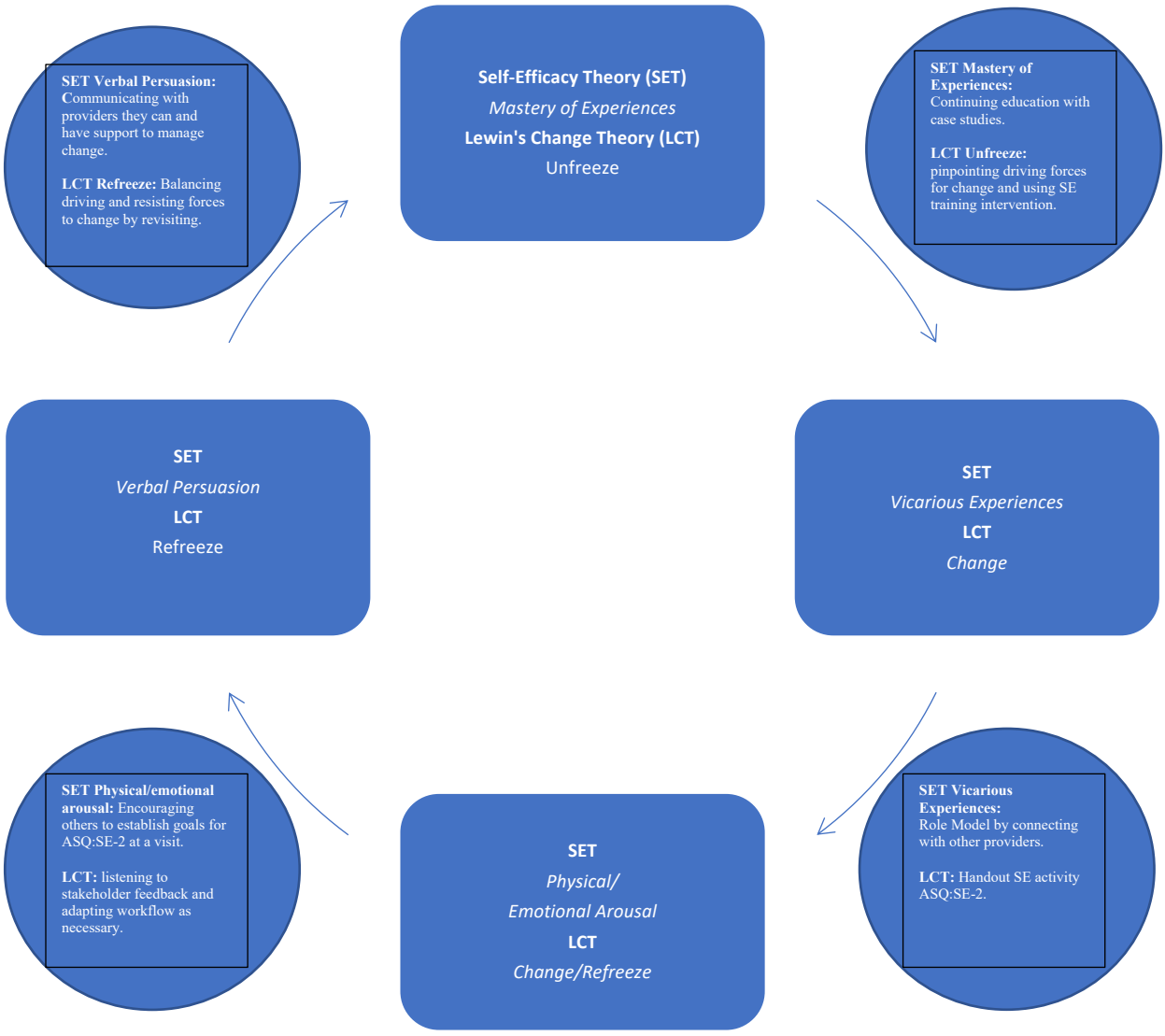
Contact Information:

- If you are interested in participating in this SE training intervention, you can contact Alison Borgsmiller at roya@unlv.nevada.edu or (805) 704-1210.
- Participating in research is voluntary. Therefore, it won't affect your employment if you decide not to call about the study or choose not to participate.

Sincerely,
Alison M Borgsmiller, DNP student, MSN, FNP-BC

Appendix H

Theoretical Framework for DNP Project SET and LCT



Appendix I

Consent to Use Brookes System for Online and Handout Activities for QI Project

Alison Borgsmiller Sent - Google March 10, 2021 at 10:38 AM
Re: Email correspondence with ASQ: SE-2 cre...
To: Brookes Publishing Details

Dear Lisa,

Thank you so much for the quick response. Yes, we will using the ASQ:SE-2 in accordance with all terms of use we have (Photocopying Release; End User License Agreement; etc.). We will not be translating or adapting the ASQ:SE-2 and using the English and Spanish versions in accordance with the Bravo program that was included with the purchase. I will be happy to share the results once the research project is concluded and hopefully encourage other clinical settings to use the ASQ:SE-2.

Thank you-
Alison

Sent from my iPhone

> On Mar 10, 2021, at 10:29 AM, Brookes Publishing <implementation@brookespublishing.com> wrote:
>
> Hello -
>
> I checked in with our rights department just to make sure there wasn't anything that would stop you from doing the research for your project. As long as you are using ASQ:SE-2 in accordance with all terms of use we have (Photocopying Release; End User License Agreement; etc.), then you don't need permission to use ASQ:SE-2 in your study. The Bravo program determines access to their data and is responsible for ensuring proper consent is in place for the use of their data. We do not determine how our online customers can use data in their account (e.g., if they choose to export it and share it with a doctoral student for research). The ASQ Online privacy policy and terms of use are relevant if you are an account holder or user. If they set you up as a user, you will agree to the terms when you login initially.
>
> If you want to adapt the tool in any way (translate into another langauge, programming the items into another secure online platform for completion in that platform instead of ASQ Online), then you'll need permission from Brookes. If you want to use any ASQ intellectual property (content such as items, questionnaires, cutoffs, handouts, screenshots, logos) in your research/dissertation but not for the use of child and family data from the Bravo Pediatrics account, then you'll need permission from Brookes. You're welcome to email rights@brookespublishing.com with any questions or to request permission.
>
> So, it looks like you are good to go! If you have any questions about permissions, again feel free to email our Rights department using the email above.
>
> Best of luck with your project! Feel free to share once complete.
>
> Thanks!
> Lisa Brack

Appendix J

Consent to Use StatPearls for Online SE Activity

Appendix K

SE-12 Questionnaire

Appendix L

IRB Letter of Exempt

Date: 2-20-2022

IRB #: UNLV-2021-101
Title: A Quality Improvement Project to Improve Health Care Provider Self-Efficacy in Rural Primary Pediatric Care Clinic Through Training Intervention
Creation Date: 10-1-2021
End Date:
Status: Approved
Principal Investigator: Rhigel Tan
Review Board: Biomedical
Sponsor:

Study History

Submission Type Initial	Review Type Exempt	Decision No Engagement in Research

Key Study Contacts

Member Rhigel Tan	Role Principal Investigator	Contact rhigel.tan@unlv.edu
Member Alison Borgsmiller	Role Primary Contact	Contact roya@unlv.nevada.edu

Appendix M

Results of SE-12 Questionnaire

1. How certain can you successfully identify social and emotional developmental delays the caregiver wishes to address during the conversation?

	All Participants' Preintervention Scores		All Participants' Postintervention Scores	
	Frequency	%	Frequency	%
Very Certain (10)	0	0	1	10
(9)	2	20	4	40
(8)	1	10	5	50
(7)	2	20	0	0
(6)	0	0	0	0
(5)	2	20	0	0
(4)	1	10	0	0
(3)	1	10	0	0
(2)	0	0	0	0
Very Uncertain (1)	1	10	0	0
Total	10	100	10	100

2. How certain can you successfully plan the conversation with the caregiver?

	All Participants' Preintervention Scores		All Participants' Postintervention Scores	
	Frequency	%	Frequency	%
Very Certain (10)	0	0	1	10
(9)	0	0	5	50
(8)	2	20	4	40
(7)	1	10	0	0
(6)	3	30	0	0
(5)	0	0	0	0
(4)	3	30	0	0
(3)	0	0	0	0
(2)	1	10	0	0
Very Uncertain (1)	0	0	0	0
Total	10	100	10	100

3. How certain can you successfully urge the caregiver to expand on their concerns regarding social and emotional developmental delays?

	All Participants Preintervention Score		All Participants' Postintervention Scores	
	Frequency	%	Frequency	%
Very Certain (10)	0	0	0	0
(9)	1	10	3	30
(8)	0	0	7	70
(7)	1	10	0	0
(6)	1	10	0	0
(5)	2	20	0	0
(4)	3	30	0	0
(3)	1	10	0	0
(2)	1	10	0	0
Very Uncertain (1)	0	0	0	0
Total	10	100	10	100

4. How certain are you that you can listen attentively without interrupting or changing focus?

	All Participants' Preintervention Scores		All Participants' Postintervention Scores	
	Frequency	%	Frequency	%
Very Certain (10)	1	10	2	20
(9)	3	30	5	50
(8)	0	0	3	30
(7)	3	30	0	0
(6)	2	20	0	0
(5)	0	0	0	0
(4)	1	10	0	0
(3)	0	0	0	0
(2)	0	0	0	0
Very Uncertain (1)	0	0	0	0
Total	10	100	10	100

5. How certain are you that you can successfully encourage the caregiver to express thoughts and feelings related to the social and emotional development of the child?

	All Participants' Preintervention Scores		All Participants' Postintervention Scores	
	Frequency	%	Frequency	%
Very Certain (10)	0	0	0	0
(9)	2	20	7	70
(8)	1	10	3	30
(7)	2	20	0	0
(6)	1	10	0	0
(5)	3	30	0	0
(4)	0	0	0	0
(3)	1	10	0	0
(2)	0	0	0	0
Very Uncertain (1)	0	0	0	0
Total	10	100	10	100

6. How certain are you that you can successfully structure the conversation with the caregiver about their child's social and emotional development?

	All Participants' Preintervention Scores		All Participants' Postintervention Scores	
	Frequency	%	Frequency	%
Very Certain (10)	1	10	1	10
(9)	1	10	6	60
(8)	0	0	3	30
(7)	3	30	0	0
(6)	3	30	0	0
(5)	0	0	0	0
(4)	1	10	0	0
(3)	1	10	0	0
(2)	0	0	0	0
Very Uncertain (1)	0	0	0	0
Total	10	100	10	100

7. How certain are you that you can successfully demonstrate appropriate non-verbal behavior, including eye contact, facial expression, placement, posture, and voicing?

	All Participants' Preintervention Scores		All Participants' Postintervention Scores	
	Frequency	%	Frequency	%

Very Certain (10)	0	0	2	20
(9)	2	20	6	60
(8)	1	10	2	20
(7)	2	20	0	0
(6)	1	10	0	0
(5)	1	10	0	0
(4)	1	10	0	0
(3)	2	20	0	0
(2)	0	0	0	0
Very Uncertain (1)	0	0	0	0
Total	10	100	10	100

8. How certain can you successfully show empathy by acknowledging the caregiver's thoughts and feelings?

	All Participants' Preintervention Scores		All Participants' Postintervention Scores	
	Frequency	%	Frequency	%
Very Certain (10)	1	10	3	30
(9)	2	20	4	40
(8)	2	20	3	30
(7)	1	10	0	0
(6)	2	20	0	0
(5)	0	0	0	0
(4)	2	20	0	0
(3)	0	0	0	0
(2)	0	0	0	0
Very Uncertain (1)	0	0	0	0
Total	10	100	10	100

9. How certain can you successfully clarify what the caregiver knows to communicate the right amount of information?

	All Participants' Preintervention Scores		All Participants' Postintervention Scores	
	Frequency	%	Frequency	%
Very Certain (10)	0	0	1	10
(9)	2	20	6	60

(8)	1	10	2	20
(7)	1	10	1	10
(6)	4	40	0	0
(5)	2	20	0	0
(4)	0	0	0	0
(3)	0	0	0	0
(2)	0	0	0	0
Very Uncertain (1)	0	0	0	0
Total	10	100	10	100

10. How certain are you that you can successfully check the caregiver's understanding of the information given?

	All Participants' Preintervention Scores		All Participants' Postintervention Scores	
	Frequency	%	Frequency	%
Very Certain (10)	1	10	2	20
(9)	1	10	4	40
(8)	0	0	4	40
(7)	2	20	0	0
(6)	2	20	0	0
(5)	3	30	0	0
(4)	1	10	0	0
(3)	0	0	0	0
(2)	0	0	0	0
Very Uncertain (1)	0	0	0	0
Total	10	100	10	100

11. How certain are you that you can successfully make a plan based on shared decisions between you and the caregiver?

	All Participants' Preintervention Scores		All Participants' Postintervention Scores	
	Frequency	%	Frequency	%
Very Certain (10)	1	10	3	30
(9)	1	10	3	30
(8)	1	10	4	40
(7)	1	10	0	0
(6)	5	50	0	0

(5)	1	10	0	0
(4)	0	0	0	0
(3)	0	0	0	0
(2)	0	0	0	0
Very Uncertain (1)	0	0	0	0
Total	10	100	10	100

12. How certain are you that you can successfully close the conversation by assuring that the caregiver's questions have been answered?

	All Participants' Preintervention Scores		All Participants' Postintervention Scores	
	Frequency	%	Frequency	%
Very Certain (10)	0	0	2	20
(9)	1	10	6	60
(8)	2	10	2	20
(7)	2	20	0	0
(6)	3	30	0	0
(5)	1	20	0	0
(4)	1	10	0	0
(3)	0	0	0	0
(2)	0	0	0	0
Very Uncertain (1)	0	0	0	0
Total	10	100	10	10

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Curriculum Vitae

Curriculum Vitae for Alison Borgsmiller, MSN, APRN, FNP-BC, RN

amazonwom@yahoo.com

Objective

An experienced Family Nurse Practitioner–Board Certified (FNP-BC) at Bravo Pediatrics and Doctor of Nursing Practice (DNP) candidate with an expected graduation date of Spring 2022 from the University of Nevada, Las Vegas (UNLV).

Skills

- 2018 Master of Science (MS); Graduate of UNLV; Family Nurse Practitioner Program.
- A registered nurse (RN) with a Bachelor of Science (BS) and over 15 years of experience predominantly caring for patients with multisystem failure requiring ventilation, neurological trauma, respiratory failure, and hemodynamic monitoring.
- Experience in a pediatric emergency and trauma unit at Sunrise Children's Center in Las Vegas, Nevada, as a nurse apprentice. Collaborated with other healthcare professionals to ensure effective patient care delivery. Identified patients' conditions and addressed nursing care.

Graduate Student Clinical Rotations

Primary Care

- Pacific Central Coast Health Centers, *265 Posada Ln Ste B, Templeton, CA*
- Pacific Central Coast Health Centers, *1250 Peach St, San Luis Obispo, CA*

Pediatrics

- Bravo Pediatrics, *3241 S Higuera St, San Luis Obispo, CA*

Obstetrics and Gynecology

- Pacific Central Coast Health Centers, *350 Posada Ln Ste 202, Templeton, CA*

Oncology and Hematology

- San Luis Obispo Oncology & Hematology, *715 Tank Farm Road, San Luis Obispo, CA*

Experience

- Advanced Practice RN
  - May 2019–Present
  - FNP-BC at Bravo Pediatrics – San Luis Obispo, CA
- Volunteer RN: Old Mission School
  - January 2014–Present
  - Old Mission School – San Luis Obispo, CA
- RN II in Critical Care Unit
  - August 2006–January 2014
  - Sierra Vista Regional Medical Center – San Luis Obispo, CA
- Nurse Apprentice in Pediatric Emergency Department
  - January 2004–May 2006
  - Sunrise Children's Hospital – Las Vegas, Nevada

Education

- High School Diploma: *1999*
  - Paso Robles High School – Paso Robles, California
- General Education related to Nursing Program: *2001–2003*
  - Cuesta College, San Luis Obispo, CA

- BS, Nursing: *May 2006*
    - University of Nevada Las Vegas School of Nursing - Las Vegas, Nevada
    - Coursework includes nursing science, research, leadership, community health, and independent studies related to pediatric asthma.
- MS, Nursing in Family Nurse Practitioner: *December 2018*
    - UNLV–Las Vegas, Nevada
    - Coursework included performing health histories and physical examinations, ordering, and interpreting diagnostic tests, diagnosing, and managing acute and chronic diseases, prescribing medication, and treatments, and providing patient and family counseling and education regarding lifestyle behaviors.

Licenses

- RN in California: license #684868
- Family Nurse Practitioner in California: license # 95011430
- Nurse Practitioner Furnishing in California: license # 95011430

Certifications/Awards

- 2021–Present: BLS Healthcare provider
- June 2021: Hand on Hero Award – Champion for Children, caring for young patients and their families during some of the most vulnerable stages and moments of their lives.
- 1 February 2019–31 January 2024: American Nurses Association FNP-BC #2018088222:
- 19 December 2018: Outstanding MSN Student for graduating class of 2018

Community Involvement:

- Volunteer as a RN for Dioceses of Monterey, assisting in student health examinations, facility vaccine administration, and on-call emergencies.

- Member of Help Me Grow Steering Committee: Providing resources for families and caregivers to understand developmental milestones and facilitate early intervention services in San Luis Obispo, California. Helping families take the lead in seeking additional support or referring their child for a comprehensive, confidential screening or evaluation at no cost.