Spring 5-18-2023

Save the Children Community Health Worker Program – Adverse Childhood Events Prevention

Jieun Lee
University of San Francisco, ginaljieun@gmail.com

Save the Children Community Health Worker Program – Adverse Childhood Events Prevention

Jieun Lee

University of San Francisco

Committee Chair: Dr. Trinette Radasa

Committee Member: Dr. Jo Loomis

May 7, 2023

TABLE OF CONTENTS

Section I: Title and Abstract

Title 1

Abstract 5

Section II: Introduction

Background 7

Problem Description 8

Setting 9

Specific Aim 10

Available Knowledge 10

PICOT Question..... 10

Search Methodology 11

Integrated Review of the Literature 11

Summary/Synthesis of the Evidence 11

Rationale 17

Section III: Methods

Context 18

Interventions 20

Gap Analysis..... 20

Gantt Chart 21

Work Breakdown Structure 21

Responsibility/Communication Plan 22

SWOT Analysis 22

Comprehensive and Financial Analysis 23

Outcome Measures 24

CQI Method and/or Data Collection Instruments..... 24

Analysis 24

Ethical Considerations 25

Section IV: Results 25

Section V: Discussion

Summary..... 26

Interpretation..... 27

Limitations 27

Conclusion 28

Section VI: Funding 28

Section VII: References 29

Section VIII: Appendices

Appendix A. 35

Appendix B. 39

Appendix C. 41

Appendix D. 45

Appendix E. 46

Appendix F. 47

Appendix G. 48

Appendix H. 49

Appendix I. 50

Appendix J. 51

Appendix K. 52

Save the Children Community Health Worker Program – Adverse Childhood Events Prevention

Abstract

Background: Adverse childhood experiences (ACEs) are potentially traumatic events that occur between the ages of 0 to 17 in which are directly associated, in a dose–response manner, to many of the most common and serious health problems in the United States.

Local Problem: 62% of California residents have experienced at least one ACE, and 16% have experienced at least four ACEs. ACEs are linked to nine of the ten leading causes of death in the United States Adults with four or more ACEs are 37.5 times more likely to attempt suicide, 3.2 times more likely to have chronic lower respiratory disease, 2.3 times more likely to have a stroke, cancer, or heart disease and 1.4 times more likely to have diabetes. ACEs are preventable.

Methods: This project is in collaboration with Save the Children, an international nonprofit nongovernmental organization with the mission of addressing children's physical and mental health needs. In order to address this public health problem, community health workers (CHWs), alongside health care professionals, are utilized to prevent and address ACEs.

Interventions: The intervention was to research, design, and teach an ACEs prevention curriculum for the CHWs from Save the Children. The curriculum was instructed through synchronous Zoom didactic courses and constructed using Canvas for Teachers platform during Fall 2022 semester. The effectiveness of each class or module was measured by pre-tests and post-tests.

Results: The aim of this project was to increase CHWs' knowledge base by 25% or more on ACEs and prevention. The average increase in scores for the entire course was 32.40% which was statistically significant ($p = .00295$). Aim of the project was met.

Conclusions: With adequate education and training, CHWs may effectively lower the prevalence and/or harmful effects of ACEs.

Key words: *community health workers, adverse childhood experience prevention, child maltreatment prevention, child abuse prevention, traumatic toxic stress, and toxic stress*

Save the Children Community Health Worker Program – Adverse Childhood Events Prevention

Background

Adverse childhood experiences (ACEs) are potentially traumatic events such as experiencing violence, abuse, neglect, or witnessing violence including suicide that occur between the ages of 0 to 17 (Centers for Disease Control and Prevention [CDC], 2021).

ACEs are directly associated, in a dose–response manner, to many common and serious health problems including nine of the ten leading causes of death in the United States (California Surgeon General, 2022). The consequences of traumatic toxic stress (TTS) from ACEs show starting infancy. Babies experiencing high levels of continuous stress may show symptoms related to failure to thrive and developmental delay. For school aged children and adolescents, these minors have a higher risk of infections, asthma, and skin conditions as well as psychological and behavioral problems (California Surgeon General, 2022). For children with supportive guardian(s), there may be strategies to buffer the effects of TTS with the help of community resources (Gilgoff et al., 2020).

Child maltreatment is a major portion of ACEs which encompass sexual abuse, emotional abuse, physical abuse, and physical neglect (Felitti et al., 1998). There have been consistent studies demonstrating the detrimental effects of abuse and neglect in child development physiologically, psychologically and neurobiologically (Cyr et al., 2013). Leading causes of death have been associated to ACEs, but ACEs are preventable; randomized controlled and match-group trials show that child abuse and neglect rates can be reduced by 48% to 52% with educational interventions such as preschool enrichment and early childhood home visitations (Merrick et al., 2019).

To address this public health problem, CHWs alongside health care professionals are utilized to prevent and address ACEs. According to American Public Health Association (2021), a community health worker (CHW) is a "frontline public health worker who is a trusted member and has an unusually close understanding of the community served." CHWs exemplify innate cultural competency which enable these workers to serve as the link between health and social services, and the community. With adequate education and training, CHWs may effectively lower the prevalence and harmful effects of ACEs.

Problem Description

Based on 2011-2017 Behavioral Risk Factor Surveillance System (BRFSS), data from a random-digit-dialed telephone survey show that 62% of California residents have experienced at least one ACE and 16% have experienced at least four ACEs (California Surgeon General, 2020). And ACEs are directly and heavily associated with various health conditions. For adults with four or more ACEs, they are 37.5 times more likely to attempt suicide, 3.2 times more likely to have chronic lower respiratory disease, 2.3 times more likely to have a stroke, cancer, or heart disease and 1.4 times more likely to have diabetes (Gilgoff et al., 2020).

Central California includes 10 counties including Fresno, Bakersfield and Stockton as the most populous cities respectively. According to the 2021 Census, the three most populous cities in Central California roughly make up 48.1% Hispanic or Latinos, 21.47% foreign born persons, 43.5% of the population speak a language other than English, 8% of the population under 65 years old do not have health insurance, and 19.17% of the population are in poverty (U.S. Department of Commerce, 2021).

From a cross-sectional study with data from 2016 National Survey of Children's Health (NSCH) with a final study sample of 45,831, the most prevalent types of ACEs exposures were

related to caregivers who reported high parenting stress and economical hardship, separation/divorce, mental illness and substance abuse. The demographics of high parenting stress include the Hispanic population, non-parent or single mother as the caregiver or income below the federal poverty line. 4.4% of caregivers reported that high parenting stress led to their children to experience four or more ACEs by the age of 18 (Crouch et al., 2019). Central California resides significantly at-risk pediatric populations for ACEs.

Furthermore, a data report from 302 non-training pediatricians exclusively practicing general pediatrics who completed the 2013 American Academy of Pediatrics Periodic Survey reported that 32% of these doctors did not ask about any ACEs, and less than 11% of pediatricians reported being familiar with the ACE study (Kerker et al., 2016). Overall, a lack of attention to children at risk of experiencing four or ACEs is a problem that must be addressed.

Evidence suggests that there are effective interventions in preventing the deleterious outcomes of ACEs and toxic stress with the support of a caring adult (Gilgoff et al., 2020). Also there are community educational courses such as the Stress Management course based on cognitive behavioral therapy and another course is Positive Parenting Practices which can help reduce parental distress (Lange et al., 2018). From a year-long ethnographic study in Indiana, CHWs have proved to be effective advocates on behalf of clients to medical professionals, health insurance representatives, policy makers, and social service organizations to take into account the structural forces that impede their clients' ability to function in broader society, and therefore addressing the social determinants of health that detrimentally affect their wellbeing and bring on higher levels of parenting stress (Logan, 2019).

Setting

This project is in collaboration with Save the Children which is a nonprofit, international non governmental organization (Save the Children, 2022). (See Appendix B for The Letter of Support from the agency, Save the Children). Our objective is to co-design a Community Health Worker certification program with the participants from Central California's local Early Childhood Coordinators or home visitors. Like Early Childhood Coordinators, CHWs will physically meet families where they live as they are also a part of the community and lived through the adversities with the population they work with. CHWs will be effectively placed for encompassing support for the community as well as individuals at risk. The cultural competence of the CHWs is one of the most valuable traits that act as a helping hand for those families experiencing adverse determinants of health.

Specific Aim (Purpose)

This doctoral project consists of formulating and teaching an education curriculum based on evidence based practice literature. The educational modules are designed to target CHW students to decrease the prevalence of ACEs. The curriculum was instructed through synchronous Zoom didactic courses and constructed using Canvas for Teachers platform during Fall 2022 semester. The effectiveness of each class or module was measured by pre-tests and post-tests. The aim of this project was to develop, implement, and evaluate an adverse childhood events prevention education curriculum to increase community health workers' knowledge base by 25% on ACEs and prevention by Spring 2023.

Available Knowledge

PICOT Question

In CHW students from Central California, how does education for adverse childhood experiences prevention compared to no education improve knowledge base to decrease the prevalence of ACEs?

Search Methodology

The databases searched were PsychINFO, Pubmed, Cumulative Index of Nursing and Allied Health Literature (CINAHL), Scopus, and google scholar with the one following key terms, “adverse childhood experience*,” “child maltreatment,” or “child abuse” with one of the following key terms “community health,” “community health worker*,” or “pomodar*.” Then a second search was conducted with the same key terms, “adverse childhood experience*,” “child maltreatment,” or “child abuse” with both of the following key terms, “stress” and “prevent*.” The limitations to the search were the years of publication which were 2002 to 2022. 41 articles were chosen for an abstract review. After the full-text review, 7 articles were included in the literature review. The level of evidence and relevance to the PICO question was the ultimate guiding factor when choosing these articles.

Integrated Review of the Literature

The research started with a total of 41 studies from initial search selected for abstract review. After the exclusion and inclusion criterias were applied, the types of studies included in the review were cross-sectional studies, clinical practical guidelines, ethnographic research, and systematic reviews. The articles were appraised using the John Hopkins Research/Non-Research Evidence Appraisal Tool (Dang & Dearholt, 2017). (See Appendix C for Evidence Evaluation Table).

Summary/Synthesis of the Evidence

Community Health Workers and Adverse Childhood Experiences

According to Logan (2019), community health workers (CHWs) are important intermediaries between marginalized populations and health or social services. A year-long ethnographic research project in Indiana demonstrates CHWs' commitment to advocacy which addresses the social determinants of health that deleteriously affect the wellbeing and diverse structural challenges encountered by the community such as accessing resources for clients, lack of effective public transportation, and barriers within the professional workforce (Logan, 2019). CHWs advocate on behalf of clients to medical professionals, health insurance representatives, policy makers, and social service organizations to consider the fundamental forces that hinder their clients' capacity to operate in broader society. CHWs focus their time and effort with clients outside the clinic in aiding with their diagnosis to avoid exacerbations such as rehospitalizations, allowing them to be intimately knowledgeable about the community's needs. Overall, CHWs address the social determinants of health to attain health equity, and CHWs are an essential component of health promotion and disease prevention which includes ACEs, more specifically child maltreatment. With education and training, CHWs can be an effective workforce in preventing ACEs and child maltreatment.

Identifying ACEs and child maltreatment is a complex process since the boundaries and definitions may be unclear in different environments, situations, and cultures. However, a qualitative study shows that the assessment of pediatric patients for child maltreatment is not solely determined by explicit medical information and procedures but also through intuition and instinct in vague situations with limited information. A qualitative study analyzes the assessment process of possible child maltreatment identification which can be listed as the recognition of emerging vulnerabilities of child's condition, preliminary interpretation of suspicions as the possible result of maltreatment, and accountable justifications for one's judgment through

consultation with colleagues and searching for additional info about child and family (Nouman & Alfandari, 2020). Assessing the probability that a child's clinical condition is caused by maltreatment involves a complex interaction of explicit and tacit knowledge. Explicit knowledge consists of declarative information, routines, and procedures while tacit knowledge is a set of intuitive skills that are instinctive and may be unavailable to the consciousness therefore difficult to articulate. When trying to make decisions in a place of incomplete information due to impractical time construct, intuitive judgment can be a smarter strategy with higher accuracy (Nouman & Alfandari, 2020). A descriptive cross-sectional study investigating the knowledge of CHWs of child maltreatment and abuse indicate that 58.5 percent of CHWs had knowledge about the causes of child maltreatment and 45 percent had knowledge of the signs, symptoms, and complications of child abuse after training (Sahebihagh et al., 2017). With education and training, CHWs can have higher feelings of self-efficacy and knowledge on how to prevent ACEs which includes child maltreatment and child abuse.

Traumatic Toxic Stress (TTS) Prevention

There are three types of stress which are positive, tolerable and toxic. Positive stress is a fight or flight reaction that allows the child to generate inner resources to cope and solve problems which allows growth, and tolerable stress are stressors that require supportive environments and relationships in order to cope and deal with. However toxic stress or chronic sustained stressors, mainly known as traumatic toxic stress (TTS) are long lasting negative environmental factors that lead to a sustained stress response with no end in sight (Oral et al., 2016). The impact of ACEs and TTS traverse health risk behaviors, chronic diseases, mental health and those with significant ACEs die as much as 20 years younger with increased healthcare utilization and costs (Oral et al., 2016).

Clinical guidelines for interventions of preventing ACEs that may be transferred for CHW to teach to preparing or new parents are anticipatory guidance for toxic stress and domains of intervention for toxic stress. Any anticipatory guidance should always be performed with developmentally appropriate knowledge of trauma-informed principle with cultural competence that can be defined as the ability to integrate knowledge about culture and associated behaviors and attitudes in all aspects of service delivery (Cry et al., 2013). There are domains of intervention in addressing and improving some aspects of neuroendocrine and immune function are healthy relationships, sleep, nutrition, exercise, mindfulness and nature (Gilgoff et al., 2020). Social integration and support has been found to have a dose-dependent protective effect on health. Exercise can help reduce stress response for children and reduce the likelihood of insulin resistance while helping clients identify healthy forms of high-fat, high-energy foods to decrease inflammation from toxic stress but also satisfying cravings from toxic stress is useful. Evidence suggests that one effective intervention in preventing the negative outcomes associated with ACEs is a caring supportive adult (Gilgoff et al., 2020). These are just some of the few domains of intervention and strategies that can be shared for families where ACEs are not stemming from the parents or guardians but from the structural violence that communities may face. While the state of research on ACEs is mainly focused on mitigating individual psychosocial damage, not much of the social pathways which may mediate negative impacts of ACEs are addressed (Lorenc et al., 2020). These anticipatory guidance and domains of intervention to improve resiliency are useful and easily applicable to any community.

Preventing Child Maltreatment with Collective Social Efficacy

Collective efficacy theory comprises of social cohesion and informal social control; this theory works that in a community where there is a higher level of social cohesion and mutual

trust, residents will willingly and proactively utilize informal social control by intervening in neighborhood disturbances to ensure social order (Abdullah et al., 2020). In other words, neighborhood collective efficacy theory of social disorganization prompts residents to intervene or protect children from parental maltreatment. According to McLeigh et al. (2018), social cohesion is mutual trust and shared expectations among neighbors and a study suggest that this may arbitrate the relationship between neighborhood poverty and child abuse and neglect rates. CHWs have valuable understanding of the neighborhood setting since environmental influences can overwhelm even well-intended parents. Social cohesion may aid parents in their caregiving roles by increasing feelings of support and assistance in meeting basic needs of children. This knowledge can contribute to the education and training of CHWs working with child maltreatment primary prevention. Overall, efforts to increase neighborhood social cohesion may be effective in reducing rates for child abuse (McLeigh et al., 2018). A systematic literature review analyzes both direct and sequential pathways in which increased social cohesion and informal social control (ISC) protect against parents' maltreatment behaviors, and the findings show that higher levels of neighborhood social cohesion may be potential primary preventive strategies against risk factors for child maltreatment. These results can be utilized for education and training, for CHWs about community-based child protection practice, in terms of promoting values that nurture social cohesion and enable ISC interventions within communities (Abdullah et al., 2020). Collective efficacy could boost community members' intervention against parents' detrimental behaviors towards their children (Abdullah et al., 2020).

Protective Factors Against Child Maltreatment

Primary prevention of ACEs and enhancing positive childhood experiences may promote lifelong health with the potential to mitigate impact of ACEs on health (Matjasko et al., 2022).

Main protective factors against child maltreatment consist of family functioning and resilience, nurturing and attachment, social support and concrete supports (Roygardner et al, 2020). For example, higher levels of resilience are associated with fewer depression symptoms, fewer posttraumatic stress disorder symptoms, and lower rates of revictimization (Tlapek et al, 2017).

With the focus on protective factors, an extensive literature review analyzes various evidence-based approaches, programs and models that leverage family and community strengths to prevent child treatment such as Period of Purple Crying for families with infants, The Medical Home model, SEEK (Safe Environment for Every Kid), Prevention Zones, Strong and Thriving Families Resource Guide, and Strong Communities for Children (Roygardner et al, 2020). The HOPE framework includes 4 evidence-based positive childhood experiences which are relationships with adults and other children, safe and stable environments to live, learn and play, social and civic engagement, and social and emotional growth (Burstein et al. 2021). Some other evidence-based programs are group CBT for new mothers who have experienced ACEs in their childhood which is called New Haven Mental health Outreach for MotherS (MOMS) since early traumatic experiences are associated with reduced social support in adulthood (Lange et al, 2018). A literature review on ACEs prevention shows how economic support for families and promotion of family-friendly work policies are effective in reducing ACEs. More specifically, there were significant associations between state EITCs, federal child tax credits, state Medicaid expansions, maternal homeownership and paid parental leave policies decreasing ACEs (Matjasko et al., 2022).

These programs are adaptable and can be used as guides to train and educate CHWs in preventing ACEs, especially childhood maltreatment. Prevention efforts are more effective when concentrated on a broader concept of promoting healthy development rather than on a specific

problem (McLeigh, 2017), and basing education and training for CHWs on principles and values rather than technique is vital to be versatile to accommodate diverse populations and to be culturally sensitive.

Rationale

Resiliency Theory will be used as the theoretical framework for the rationale of preventing ACEs and reducing the negative health outcomes of ACEs. This conceptual framework focuses on promotive factors which can be contextual, social and individual variables; there are 2 types of promotive factors which include assets and resources. Assets are positive factors that can be produced intrinsically such as self-efficacy and self-esteem as to resources are positive extrinsic factors such as parental support and youth programs that provide adolescents with opportunities to learn and practice coping skills.

The Resiliency Theory includes three models which are the compensatory model, protective model and challenge model (Zimmerman, 2013). The compensatory model frames promotive factors that neutralize the risk exposure directly and indirectly in a counteractive style by contributing additively against negative outcomes. The protective model states that positive assets and resources moderate the relationship between risk factors and outcomes, protecting against the negative factors. The challenge model explains that exposure to modest levels of risk help and prepare youth to overcome future risk exposures. However it is crucial to note that the initial risk exposure must be challenging so that youth may develop coping mechanisms but not too burdensome where adversity overwhelms the system and inhibits coping (Zimmerman, 2013). All three models of the resiliency theory serve as a buffer system against the harmful effects of ACEs protecting youth from toxic traumatic stress.

A data analysis report from a series of regression analyses to examine how counter-ACEs and ACEs concluded that protective factors aptly named “counter-ACEs" protect against poor adult health outcomes when ACEs scores are moderate and that counter-ACEs largely buffer the negative effects of ACEs on adult health. In further detail, higher counter-ACEs scores were associated with improved adult health and counter-ACEs neutralized the negative impact of ACEs on adult health. Counter-ACEs had a reduced positive effect on adult health among those with four or more ACEs compared to those with fewer than four or more ACEs. (Crandell et al., 2019). (See Appendix D for the Resiliency Theoretical Framework).

Methods

Context

CHWs can be the bridges to available medical resources and better health outcomes. They are the main sources of health promotion and ACEs prevention, especially in rural and at risk populations. Their unique perspective and innate cultural competence is irreplicable in the role of preventing child maltreatment as well as promoting protective factors to prevent if not lessen the burdens of TTS. The intervention of educating 13 CHWs to prevent ACEs is a section of a large educational program project that encompass various factors of public health and community health outcomes holistically. This section of the intervention focused on educating CHWs from Central California in preventing ACEs in five class sessions.

62% of California residents have experienced at least one ACE and 16% have experienced at least four ACEs. This (California Surgeon General, 2020). Furthermore, the most prevalent types of ACE exposure experienced were related to caregivers who reported high parenting stress and economical hardship, marital difficulties, mental illness and substance abuse. At-risk populations of high parenting stress include Hispanic population, non-parent or

single mother as the caregiver or income below the federal poverty line, and 4.4% of caregivers reported that high parenting stress led to their children to experience four or more ACEs by the age of 18 (Crouch et al., 2019). Fresno, Bakersfield and Stockton's demographics are 48.1% Hispanic or Latinos, 21.47% foreign born persons, 43.5% of the population speak a language other than English, 8% of the population under 65 years old do not have health insurance, and 19.17% of the population are in poverty (U.S. Department of Commerce, 2021). Central California has many at-risk pediatric populations for ACEs.

For this project, the location was Central California in which at least 33% of the population identify as Hispanic or Latino and 25% of the population's primary language is not English and 14% of the population are in poverty. With the CHWs' background and cultural sensitivity of the neighborhoods they live in was effective in this educational proposal of decreasing rates of ACEs in Central California.

The main stakeholders in this project are the children, parents or guardians of the children, other community members, CHWs, program director, site director, DNP students, University of San Francisco's Save the Children coordinators, lead faculty members. Program director, site director, Save the Children organization and coordinators along with University of San Francisco and lead faculty members made this project possible for many DNP students. CHWs, DNP students, program director and faculty members worked closely together to carry out implementation during the Fall 2022 semester. And hopefully this project will positively impact children, parents or guardians and other community members. Although different styles of interest go into the project depending on the stakeholder, they have a common denominator of the objective in preventing ACEs. Each of the stakeholders' different perspectives and priorities was valuable in the success of this collaborative project.

Intervention

The intervention consisted of formulation and teaching an education curriculum catered for CHWs in Central California to decrease the prevalence of ACEs in the community. CHWs are considered crucial intermediaries between marginalized populations, health, and social services. CHWs are acutely and personally aware of the key barriers which overlap with social determinants of health such as difficulty accessing resources for clients, lack of transportation, and general inability to access health and social services which are all structural violence that may be prevalent in communities (Logan, 2019). CHWs were a great fit for educating to create change in community culture in decreasing the rates of ACEs due to their unique position within the community. Furthermore, a descriptive cross-sectional study with the sample size of 265 CHWs indicate that 91.3% of CHWs had a favorable attitude in dealing with child abuse (Sahebihagh et al., 2017). Overall, the intervention utilized CHWs' unique role within the community and willingness to learn to prevent ACEs with consequent goals such as reducing healthcare costs and lessening human suffering.

Gap Analysis

There is a lack of primary prevention strategies, options and implementation to prevent ACEs, lack of resources to maintain healthy environments for children to avoid TTS, and lack of education for CHWs, parents or guardians, or children about ACEs and its health outcomes in the current state of ACEs.

Trauma informed care has become more common in working with trauma-related mental health disorders and there are some ACEs training for medical professionals such as "Becoming ACEs Aware in California," a two-hour training; however in order to qualify for the training, the medical professional must have a national provider identifier and board certification ID, and

practice address (State of California Department of Health Care Services, 2022). In order to become a CHW, California does not require a certification of CHWs or provide licensure, but rather CHWs must train for core competencies such as communication and interpersonal and relationship building (Cuvelier, 2022). There is no evidence based education curriculum for CHWs in preventing ACEs. For the future state of ACEs, some of the goals are to implement formal educational modules and training for CHWs resulting in increased ACE identification through screening, primary prevention through social theories, building relationships and trust between community members and teaching at-risk populations coping strategies and resources through CHWs. This gap in organized education for CHWs may bring many missed opportunities to prevent ACEs and buffer the effects of TTS. The action to close the gap is to propose evidence based education and training for CHWs about preventing ACEs to increase community health outcomes and lessen human suffering. (See Appendix E for Gap Analysis Chart).

Gantt Chart

This project began with researching the literature, drafting a manuscript and a sample curriculum with possible topics with stakeholder input during the spring semester of 2022 (January to May). During the summer semester (May to August), additional research was done for finalizing the prospectus and the curriculum. DNP students, USF faculty and Save the Children coordinators collaborated for the implementation and schedule of the project. In the fall semester, the project was implemented and ACEs Prevention curriculum with 5 specific modules was delivered. Data was collected and feedback was obtained for evaluation. In spring semester of 2023, collected data was analyzed, final project report written and DNP presentation to USF was delivered. (See Appendix F for the Gantt Chart).

Work Breakdown Structure

ACEs Prevention Education for CHWs project has five stages; however several components within the five stages may overlap in time period but each component has distinct steps in advancing the project. The first stage comprises literature review and manuscript writing. Drafting a manuscript includes modifications incorporated with feedback from the advisor, and the secondary reader. This stage is the foundation of the project. The second and third stage include curriculum development and collaboration. This includes continuing to research with stakeholders' input and drafting and organizing educational material into five modules as a curriculum. For collaboration, many zoom meetings were conducted to finalize the curriculum and schedule the class in the fall semester. The fourth stage of implementation included a final check with the collaborators and actual teaching of the course on ACEs prevention. The curriculum included pretests and posttests for data collection. The fifth and final stages consisted of evaluation in data analysis and finalizing project report and presentation. (See Appendix G for the Work Breakdown Structure).

Communication Matrix

There were three main meetings for stakeholders, education and training and team were all held in a zoom session during this project. Ongoing correspondence with stakeholders and CHWs were primarily held before or after class and through email. (See Appendix H for the communication matrix).

SWOT Analysis

The SWOT Analysis technique was utilized for this project with the goal of preventing ACEs via CHW education and training. The strengths of this project is that there were small class sizes that promoted individualized learning about the risks and prevention of ACEs and buffer systems for TTS. Overall, this built rapport between staff and CHWs with additional

resources which were shared. Some weaknesses were lack of time, financial resources and that some CHWs were reluctant to learn about this topic if they personally had experiences and biases about ACEs. One of the ongoing opportunities are decreased financial costs of healthcare of diseases and disorders stemming and/or exacerbated from ACEs and other opportunities are to facilitate law and policies to prevent ACEs and child abuse, facilitate education about resource gathering in school systems for primary prevention of ACEs. Some ongoing threats are lack of public interest and therefore lack of funding from public sectors which leads to lack of existing and future research in primary prevention of ACEs. With the strengths and opportunities, addressing the weaknesses and threats allowed for in-depth analysis for the project to promote better community health outcomes. (See Appendix I for the SWOT Analysis).

Comprehensive Financial Analysis

California's population is roughly 39.2 million people and Central Valley California's population is roughly 6.5 million people which means Central Valley California's population makes up 16.58% of California's population (U.S. Department of Commerce, 2021). But this budget focuses on Fresno City as a more realistic cost avoidance analysis. Fresno city's population was 544,510 people in 2021 which is 1.39% of California's population. And there is the statistic that 62% of California residents have experienced at least one ACE and a recent estimate based in 2013 revealed that ACEs cost California $112.5 billion overall annually and will cost over $1.2 trillion in the next 10 years. (California Surgeon General, 2020). 1.39% of 112.5 billion dollars is still 1.5 million dollars as a cost that could be avoided by preventing ACEs, and this would also be the gross revenue.

For expenses, the starting and ongoing expenses is the annual wage of the CHWs which is $53,930 per CHW (U.S. Bureau of Labor Statistics, 2022). We currently have 13 CHWs so the

total expense is $717,090 per year. Therefore the total net profit would be -$717,090 for the first year but from each year after, optimistically the net profit could be up to $717,090. (See Appendix J for Budget and Cost Avoidance Analysis).

Outcome Measures

CQI Method and Data Collection Tools

Canvas was the main platform for interaction with participants and where educational modules were accumulated for resources. Computerized data collection tools in Canvas and data analytic tools through Microsoft Excel were used to collect the participants' assessment of knowledge and confidence levels through a pre/post test. There were 5 modules and 5 pre/post assessments which all consisted of 5 questions which were a mix of multiple choice, select all that apply, fill in the blank and essay type questions. These assessments all had a time limit of 15 minutes to complete. The aim of this project was to increase community health workers' knowledge base by 25% on ACEs prevention through these quizzes.

Analysis

Data was collected through the platform Canvas and entered into Microsoft Excel. In Microsoft Excel, the averages of the pre-tests and post-tests were calculated for the five modules. The improvement of scores in each module was calculated, and the average increase for all five modules was 32.40%. (See Appendix K for Data Table and Calculations). To make sure that these calculations were statistically significant, a paired sample t-test was used. The hypothesis was two-tailed and the significance level was 0.05. The value of t was 6.46517 and the value of p is .00295. Therefore, the result is statistically significant at $p < .05$.

Ethical Considerations

This project's ethical framework was guided by American Nurses Association Code of Ethics and University of San Francisco's Jesuit values. American Nurses Association ethical guidelines of Provision 8 states that "the nurse collaborates with other health professionals and the public to protect human rights, promote health diplomacy, and reduce health disparities" (American Nurses Association, 2019). The end goal of this project is to reduce ACEs through education of CHWs which directly agree with the mission to protect human rights, promote health diplomacy and reduce health disparities starting from infancy so that children have a better chance of a healthy life. In addition, the Jesuit value of *cura personalis*, or care for the whole person is congruent with the mission of preventing ACEs since the education and training is focused on holistic care of children and families (University of San Francisco, 2020).

A formal ethics review was not necessary therefore this project did not require Institutional Review Board (IRB) approval. (See Appendix A for DNP Statement of Non-Research Determination Form). There was no potential conflict of interests identified. Lastly, privacy of the participants were maintained through anonymity in all pre and post tests, feedback and suggestions to ensure confidentiality and psychological well-being.

Results

The aim of this project was to increase CHWs' knowledge base by 25% or more on ACEs and prevention. The ACEs Prevention course was based around 5 main topics which were 1) Role of CHWs in ACEs Prevention, 2) Generational Trauma and Social Theories, 3) Traumatic Toxic Stress, 4) Domains of Intervention, and 5) Trauma Informed Care. For each module there was a 5 question pre-test and a post-test, and the average increase in scores for five modules were 24.32%, 37.68%, 36.72%, 17.32% and 45.95% respectively. A paired sample t-test was calculated and the results were statistically significant at $p < .05$. The average increase in scores

for all five modules was 32.40%. (See Appendix K for Data Table and Calculations). Aim of the project was met.

Discussion

Summary

Research and practice on ACEs have shifted from delineating effects of ACEs on adults to primary prevention in children (Naryan et al., 2021). And the development, implementation, and evaluation of a ACEs prevention educational program for CHWs in Central California will alleviate the prevalence of ACEs in these communities and improve health outcomes.

The aim to increase CHWs' knowledge base by 25% or more about ACEs and prevention was met at an average increase of 32.4% on test scores before and after the educational modules. The increased knowledge base for CHWs will hopefully translate into better prevention of and interventions for ACEs.

Literature suggests that there are many interventions, resources and education that can be dispersed for the primary prevention of ACEs. CHWs' integral role in supporting healthy behavior which include empowerment, peer moedling, cultural congruence and trusting relationships allows them to be an ideal role model for educating and being a resource for the community in preventing ACEs and preventing TTS (Katigbak et al., 2015). Social cohesion theory, anticipatory guidance and domains of intervention, and practicing resiliency are all tools that CHWs can utilize to prevent ACEs and negative effects of TTS. CHWs' intimate understanding of the patient population allows fostering relationships that can influence behaviors to be healthier and protective towards children (Katigbak et al., 2015).

Interpretation

The overarching goal of prevention of ACEs is not within this project's capacity to measure. However, this project's specific aim of education and training for CHWs was met. The scores for pre-test and post-test for all modules increased by at least 25% except module 4. However the averages of all test scores combined was 32.4%, and this calculation was statistically significant ($p = .00295$). One of the CHWs did not take all the pre-tests and post-tests therefore the usable data decreased from 14 students to 13 students. The CHWs knowledge base increased significantly which will hopefully manifest into a more evidence-based practice in preventing ACEs and interventions for unavoidable ACEs for children and caregivers throughout Central California.

Limitations

A major limitation was the lack of articles and research focused on CHWs or training and education for CHWs in regards to prevention for ACEs. The articles' content on traumatic toxic stress prevention still focused largely on the long term physical and psychological harm that would be a consequence of toxic stress rather than prevention. However, there were specific domains of interventions to buffer against traumatic toxic stress that could be included into the curriculum for CHWs that may help reduce the detrimental effects of ACEs (Gilgoff et al., 2020). Most articles demonstrated correlations of environmental and psychosocial factors and prevalence of child maltreatment and indicated a need for systematic implementation as a method in preventing more specifically child abuse and neglect. There were reports on implemented programs for prevention of ACEs and child maltreatment which may be useful in developing the training and education for CHWs (McLeigh et al., 2017). Further research on specifically CHWs and ACEs prevention implementation would be valuable information to proceed in the goal of preventing ACEs.

Another limitation is that there were only 13 CHWs that completed ACEs prevention education and training in which they are dispersed throughout Central Valley California. Fresno city's population was 544,510 people in 2021 and 13 CHWs may not be enough to make a significant decrease in ACEs. Subsequently, there aren't any specific methods to measure the decrease in prevalence of ACEs or assess a direct causal relationship between education/training and decrease in ACEs in the future with too many variables and not enough CHWs.

Conclusions

The original ACE study's demographics were mainly Caucasian, middle class and college-educated with private health insurance, however later studies have found a higher prevalence among population who were racially marginalized, unemployed, lower income brackets, LGBTQ+, and without health insurance (State of California Office of the Surgeon General, 2020). As further studies continue, the conversation about ACEs prevention will also evolve. While this is a complex topic with varying perspectives and opinions in the public, the negative health outcomes are increasingly evident. The ACEs prevention education and training for CHWs will be beneficial in reducing ACEs and alleviating the effects of TTS. Not only will the result of the project reduce the state cost of negative health outcomes that stem from ACEs and TTS but also reduce human suffering for many individuals long term.

Funding

This project was developed, implemented and evaluated by the DNP student without any external funding.

References

Abdullah, A., Emery, C. R., Jordan, L. P. (2020). Neighbourhood collective efficacy and protective effects on child maltreatment: A systematic literature review. *Health & Social Care in the Community, 28*, 1863–1883. https://doi.org/10.1111/hsc.13047

American Nurses Association. (2019). *Code of ethics for nurses with interpretive statements.*

American Public Health Association. (2021). *Community Health Workers.* APHA. Retrieved November 17, 2021, from https://www.apha.org/aphacommunities/member-sections/community-health-workers.

Burstein, D., Yang, C., Johnson, K., Linkenbach, J., & Sege, R. (2021). Transforming practice with hope (healthy outcomes from positive experiences). *Maternal and Child Health Journal, 25*(7), 1019–1024. https://doi.org/10.1007/s10995-021-03173-9

California Surgeon General. (2022). *Adverse childhood experiences (ACEs) and toxic stress.* OSG. Retrieved August 4, 2022, from https://osg.ca.gov/aces-and-toxic-stress/

Centers for Disease Control and Prevention. (2021, April 6). *Preventing Adverse Childhood Experiences.* Centers for Disease Control and Prevention. Retrieved November 15, 2021, from https://www.cdc.gov/violenceprevention/aces/fastfact.html.

Crandall, A. A., Miller, J. R., Cheung, A., Novilla, L. K., Glade, R., Novilla, M. L., Magnusson, B. M., Leavitt, B. L., Barnes, M. D., & Hanson, C. L. (2019). ACEs and counter-ACEs: How positive and negative childhood experiences influence adult health. *Child Abuse & Neglect, 96,* 1–9. https://doi.org/10.1016/j.chiabu.2019.104089

Crouch, E., Radcliff, E., Brown, M., & Hung, P. (2019). Exploring the association between Parenting Stress and a child's exposure to adverse childhood experiences (ACEs).

Children and Youth Services Review, 102, 186–192. https://doi.org/10.1016/j.childyouth.2019.05.019

Cuvelier, M. (2022, May 4). *California Community Health Worker Core Competencies.* Community Health Worker Training. Retrieved August 13, 2022, from https://chwtraining.org/california-community-health-worker-core-competencies/

Cyr, C., Michel, G., & Dumais, M. (2013). Child maltreatment as a global phenomenon: From trauma to prevention. *International Journal of Psychology, 48*(2), 141–148. https://doi.org/10.1080/00207594.2012.705435

Dang, D., & Dearholt, S. (2017). *Johns Hopkins nursing evidence-based practice: Model and guidelines* (3rd ed.). Sigma Theta Tau International.

Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., Koss, M. P., & Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults. *American Journal of Preventive Medicine, 14*(4), 245–258. https://doi.org/10.1016/s0749-3797(98)00017-8

Fergus, S., & Zimmerman, M. A. (2005). Adolescent resilience: A framework for understanding healthy development in the face of risk. *Adolescent Resilience: a Framework for Understanding Healthy Development in the Face of Risk*, *26*(1), 399–419. https://doi.org/10.1146/annurev.publhealth.26.021304.144357

Gilgoff, R., Singh, L., Koita, K., Gentile, B., & Marques, S. S. (2020). Adverse childhood experiences, outcomes, and interventions. *Pediatric Clinics of North America, 67*(2), 259–273. https://doi.org/10.1016/j.pcl.2019.12.001

Katigbak, C., Van Devanter, N., Islam, N., & Trinh-Shevrin, C. (2015). Partners in health: A conceptual framework for the role of community health workers in facilitating patients' adoption of healthy behaviors. *American Journal of Public Health, 105*(5), 872–880. https://doi.org/10.2105/ajph.2014.302411

Kerker, B. D., Storfer-Isser, A., Szilagyi, M., Stein, R. E. K., Garner, A. S., O'Connor, K. G., Hoagwood, K. E., & Horwitz, S. M. (2016). Do pediatricians ask about adverse childhood experiences in pediatric primary care? *Academic Pediatrics, 16*(2), 154–160. https://doi.org/10.1016/j.acap.2015.08.002

Lange, B. C., Callinan, L. S., & Smith, M. V. (2018). Adverse childhood experiences and their relation to parenting stress and parenting practices. *Community Mental Health Journal, 55*(4), 651–662. https://doi.org/10.1007/s10597-018-0331-z

Logan, R. I. (2019). 'A poverty in understanding': Assessing the structural challenges experienced by community health workers and their clients. *Global Public Health, 15*(1), 137–150. https://doi.org/10.1080/17441692.2019.1656275

Lorenc, T., Lester, S., Sutcliffe, K., Stansfield, C., & Thomas, J. (2020). Interventions to support people exposed to adverse childhood experiences: Systematic review of Systematic Reviews. *BMC Public Health, 20*(1), 1–10. https://doi.org/10.1186/s12889-020-08789-0

Matjasko, J. L., Herbst, J. H., & Estefan, L. F. (2022). Preventing Adverse Childhood Experiences: The Role of Etiological, Evaluation, and Implementation Research. *American Journal of Preventive Medicine, 62*(6), S6–S15. https://doi.org/10.1016/j.amepre.2021.10.024

McLeigh, J. D., Katz, C., Davidson-Arad, B., & Ben-Arieh, A. (2017). The cultural adaptation of a community-based child maltreatment prevention initiative. *Family Process, 56*(2), 393–407. https://doi.org/10.1111/famp.12193

McLeigh, J. D., McDonell, J. R., & Lavenda, O. (2018). Neighborhood poverty and child abuse and neglect: The mediating role of social cohesion. *Children and Youth Services Review, 93*, 154–160. https://doi.org/10.1016/j.childyouth.2018.07.018

Merrick, M. T., Ford, D. C., Ports, K. A., Guinn, A. S., Chen, J., Klevens, J., Metzler, M., Jones, C. M., Simon, T. R., Daniel, V. M., Ottley, P., & Mercy, J. A. (2019). Vital signs: Estimated proportion of adult health problems attributable to adverse childhood experiences and implications for prevention — 25 states, 2015–2017. *Morbidity and Mortality Weekly Report, 68*(44), 999–1005. https://doi.org/10.15585/mmwr.mm6844e1

Nouman, H., & Alfandari, R. (2020). Identifying children suspected for maltreatment: The assessment process taken by healthcare professionals working in community healthcare services. *Children and Youth Services Review, 113*, 1–8. https://doi.org/10.1016/j.childyouth.2020.104964

Roygardner, D., Hughes, K. N., & Palusci, V. J. (2020). Leveraging family and community strengths to reduce child maltreatment. *The ANNALS of the American Academy of Political and Social Science, 692*, 119–139. https://doi.org/10.1177/0002716220978402

Sahebihagh, M. H., Hosseini, S. Z., Hosseinzadeh, M., & Shamshirgaran, S. M. (2017). Knowledge, Attitude and Practice of Community Health Workers Regarding Child Abuse in Tabriz Health Centers in 2015-2016. *International Journal of Community Based Nursing and Midwifery, 5*(3), 264–274.

Save the Children. (2022). *Humanitarian Aid Organization for Children. Save the Children.* Retrieved August 5, 2022, from https://www.savethechildren.org/

State of California Department of Health Care Services. (2022). *Becoming ACEs aware in California*. ACEs Aware. Retrieved August 13, 2022, from https://training.acesaware.org/

State of California Office of the Surgeon General. (2020, December 9). *Roadmap for Resilience The California Surgeon General's Report on Adverse Childhood Experiences, Toxic Stress, and Health.* OSG. Retrieved August 14, 2022, from https://osg.ca.gov/

Tlapek, S. M., Auslander, W., Edmond, T., Gerke, D., Voth Schrag, R., & Threlfall, J. (2017). The moderating role of resiliency on the negative effects of childhood abuse for adolescent girls involved in child welfare. *Children and Youth Services Review, 73,* 437–444. https://doi.org/10.1016/j.childyouth.2016.11.026

University of San Francisco. (2020). Vision, mission, and values statement. https://www.usfca.edu/about-usf/who-we-are/vision-mission.

U.S. Bureau of Labor Statistics. (2022, March 31). *Occupational Employment and Wage Statistics*. U.S. Bureau of Labor Statistics. Retrieved August 14, 2022, from https://www.bls.gov/oes/current/oes211094.htm

U.S. Department of Commerce . (2021). *U.S. Census Bureau quickfacts: California.* United States Census Bureau. Retrieved August 14, 2022, from https://www.census.gov/quickfacts/fact/table/CA/PST045221

U.S. Department of Commerce . (2021). *U.S. Census Bureau quickfacts: Stockton city, California; Bakersfield city, California; Fresno city, California.* United States Census Bureau. Retrieved August 7, 2022, from

https://www.census.gov/quickfacts/fact/table/stocktoncitycalifornia,bakersfieldcitycalifornia,fresnocitycalifornia/PST045221

Zimmerman, M. A. (2013). Resiliency theory: A strengths-based approach to research and practice for adolescent health. *Health Education & Behavior, 40*(4), 381–383. https://doi.org/10.1177/1090198113493782

Appendix A

DNP Statement of Non-Research Determination Form

UNIVERSITY OF SAN FRANCISCO | School of Nursing and Health Professions

Doctor of Nursing Practice
Statement of Non-Research Determination (SOD) Form

The SOD should be completed in NURS 7005 and NURS 791E/P or NURS 749/A/E

General Information

Last Name:	Lee	**First Name:**	Jieun "Gina"
CWID Number:	20248105	**Semester/Year:**	Fall 2022
Course Name & Number:	N739B NP Qualifying Project: Prospectus Development		
Chairperson Name: Second Reader Name	Dr. Jo Loomis	**Advisor Name:**	Dr. Trinette Radasa

Project Description

1. **Title of Project:** Prevention of Adverse Childhood Events Education for Community Health Workers

2. **Brief Description of Project** *(Clearly state the purpose of the project and the problem statement in 250 words or less):*
This project is a partnership between Save the Children organization and University of San Francisco's DNP program to develop an educational module for community health workers based on literature about the prevention of adverse childhood events (ACEs). The purpose of this project is to increase knowledge base and practical stress reduction skills in the community health workers in Fresno county with hopes of decreasing rates of ACEs and child abuse.

3. **AIM Statement: What are you trying to accomplish?**

- Provides clear, well-defined, and concise statements regarding the purpose of the project and describes the specific aim in the IHI format: What?; How much?; For whom?; Where?; By when? The Aim Statement needs to follow the SMART guidelines: specific, measurable, achievable, realistic, and timely.
- To improve (your process) from (baseline)% to (target)%, by (timeframe), among (your specific population)

Complete the AIM statement by answering the following elements:

What? Decrease prevalence of ACEs, increase knowledge base for community health workers on the prevention of ACEs, practice stress reduction skills.

How much improvement? Increase in confidence and knowledge about the prevention of adverse childhood events by pre-test and post-test.

For whom? Community health workers.

Where? Fresno county.

By when?: Fall 2022.

4. Brief Description of Intervention (150 words)**:**
An educational module including lecture, discussion and activities which will be part of a curriculum pattern in collaboration with USF's DNP faculty and Save the Children coordinators. A tentative curriculum pattern to address prevention of ACEs by practicing reacting to stressful situations and stress reduction and some background knowledge about ACEs.

4a. How will this intervention be implemented?

- Where will you implement the project?
  - Fresno county and virtually through zoom.
- Attach a letter from the agency with approval of your project.
- Who is the focus of the intervention? (Needs to match population [for whom?] in Aim statement.)
  - Community health workers.
- How will you inform stakeholders/participants about the project and the intervention?
  - During the first meeting or meeting beforehand about the course outline.
  - Stakeholders = USF DNP faculty, Save the Children organization, Fresno community
  - Participants = home coordinators from Save the Children attending the CHW classes (8 students)

5. Outcome measurements: How will you know that a change is an improvement?

- Measurement over time is essential to QI. Measures can be outcome, process, or balancing measures. Baseline or benchmark data are needed to show improvement.
- Align your measure with your problem statement and aim.
- Try to define your measure as a numerator/denominator.
- What is the reliability and validity of the measure? Provide any tools that you will use as appendices.
- Describe how you will protect participant confidentiality.

The community health workers will be given a pretest for baseline data before education and a post-test for benchmark data after education to measure the outcome of the educational module. These test scores will be the common denominator. Participants' confidentiality will be protected by not taking any personal identifiable information and keeping assessments anonymous.

UNIVERSITY OF SAN FRANCISCO | School of Nursing and Health Professions

DNP Statement of Determination
Evidence-Based Change of Practice Project Checklist*

The SOD should be completed in NURS 7005 and NURS 791E/P or NURS 749/A/E

Project Title: Preventing Adverse Childhood Events Education for Community Health Workers

Mark an "X" under "Yes" or "No" for each of the following statements:	**Yes**	**No**
The aim of the project is to improve the process or delivery of care with established/ accepted standards, or to implement evidence-based change. There is no intention of using the data for research purposes.	Yes	
The specific aim is to improve performance on a specific service or program and **is a part of usual care**. All participants will receive standard of care.	Yes	
The project is **not** designed to follow a research design, e.g., hypothesis testing or group comparison, randomization, control groups, prospective comparison groups, cross-sectional, case control). The project does **not** follow a protocol that overrides clinical decision-making.	Yes	
The project involves implementation of established and tested quality standards and/or systematic monitoring, assessment or evaluation of the organization to ensure that existing quality standards are being met. The project does **not** develop paradigms or untested methods or new untested standards.	Yes	
The project involves implementation of care practices and interventions that are consensus-based or evidence-based. The project does **not** seek to test an intervention that is beyond current science and experience.	Yes	
The project is conducted by staff where the project will take place and involves staff who are working at an agency that has an agreement with USF SONHP.	Yes	
The project has **no** funding from federal agencies or research-focused organizations and is not receiving funding for implementation research.	Yes	
The agency or clinical practice unit agrees that this is a project that will be implemented to improve the process or delivery of care, i.e., **not** a personal research project that is dependent upon the voluntary participation of colleagues, students and/ or patients.	Yes	
If there is an intent to, or possibility of publishing your work, you and supervising faculty and the agency oversight committee are comfortable with the following statement in your methods section: *"This project was undertaken as an Evidence-based change of practice project at X hospital or agency and as such was not formally supervised by the Institutional Review Board."*	Yes	

Answer Key:

- If the answer to all of these items is "Yes", the project can be considered an evidence-based activity that does not meet the definition of research. IRB review is not required. Keep a copy of this checklist in your files.
- If the answer to any of these questions is "No", you must submit for IRB approval.

*Adapted with permission of Elizabeth L. Hohmann, MD, Director and Chair, Partners Human Research Committee, Partners Health System, Boston, MA.

To qualify as an Evidence-based Change in Practice Project, rather than a Research Project, the criteria outlined in federal guidelines will be used: http://answers.hhs.gov/ohrp/categories/1569

UNIVERSITY OF SAN FRANCISCO | School of Nursing and Health Professions

DNP Statement of Determination
Evidence-Based Change of Practice Project Checklist Outcome

The SOD should be completed in NURS 7005 and NURS 791E/P or NURS 749/A/E

☐ This project meets the guidelines for an Evidence-based Change in Practice Project as outlined in the Project Checklist (attached). **Student may proceed with implementation.**

☐This project involves research with human subjects and **must be submitted for IRB approval before project activity can commence.**

Comments:

Student Last Name:	Lee	**Student First Name:**	Jieun "Gina"
Student Signature:		**Date:**	
Chairperson Name:	Dr. Trinette Radasa		
Chairperson Signature:		**Date:**	
Second Reader Name:	Dr. Jo Loomis	**Date:**	
Second Reader Signature:			
DNP SOD Review Committee Member Name:			
DNP SOD Review Committee Member Signature:		**Date:**	

Appendix B

Letter of Support from Save the Children

From: **Mitchell, SaRonn** smitchell@savechildren.org
Subject: Save the Children and USF Partnership
Date: October 31, 2021 at 5:32 PM
To: Jo Ann Loomis (jaloomis2@usfca.edu) jaloomis2@usfca.edu

SM

To Whom it May Concern:

It gives me great pleasure to be in partnership with USF and its students to bring much needed support and training to Save the Children's partner staff and the communities we serve. Our new and bold endeavor of building a Community Health Worker program, for example, will not only support families with understanding the importance of identifying a medical home, but will support our Early Childhood Coordinators/home visitors with a variety of interventions that will improve the overall quality of life and productivity for the communities they serve.

Since 2012, Save the Children and University of San Francisco have worked together in partnership to promote positive health outcomes for families and children in California's Central Valley. The USF students have provided health education and training for Early Childhood Coordinators/home visitors on topics such as breastfeeding education, oral health, child and family nutrition, and the effects of toxic stress and violence on children. The USF students were able to accompany the home visitors to provide nursing support with early childhood developmental screenings. These home visits were highlights of the experiences for USF students with the intention of providing them with deeper insight into some of the health needs of the families we serve, in rural America. This learning experience was vast in its approach as it included meeting program families and working with them on a one-to-one basis helped teach the need and create the 'heart' for many of the students to consider living and working in rural California. Working with the early childhood coordinators was an important part of these experiences, as they provided insight into the community needs to the USF students who many live and attend school in urban San Francisco.

Today, as we continue our work together, we will co-design a Community Health Worker training program for our local Early Childhood Coordinators/home visitors. Like our Early Childhood Coordinator, Community Health Workers literally meet families where they live, and see their economic, physical, and related mental health struggles on a daily basis. The Early Childhood Coordinators will be strategically positioned to provide support for the whole person as they assess the wide array of environmental, economic, and social determinants of health for this population. They visit with parents in their homes and see first-hand the effects of poverty, language barriers, and other social disadvantages that affect physical and mental health. This educational program will be designed to equip and enlarge the skills, attitudes, and behaviors of the early childhood coordinators as CHW to assess the whole person, in respect for the individual circumstances and needs of parents and families in the community, especially those families who experience traumatic and adverse determinants of health.

We are committed to creating new approaches to support systemic and collaborative community health-based initiatives that promote among other things, optimal birth outcomes and positive family and child outcomes. Furthermore, our early childhood coordinators will be better equipped during regular home visits to support families. Early Childhood Coordinators will provide families with health-related knowledge and tools to be better advocates for themselves as parents and for their children.

Again, I'm excited and look forward to working with USF and the USF students, so that these opportunities can continue to benefit USF students, Save the Children's partner staff but most importantly benefit the many families and children in the Central Valley our collective efforts will touch.

Warmly,
SaRonn Mitchell

SaRonn Mitchell
SENIOR SPECIALIST, EARLY CHILDHOOD
Save the Children.
CA & WA—Rural Education
Mobile: 559•313•7070

Appendix C

Evidence Evaluation Table

Reference	Objective	Method/Level of Evidence	Results/Conclusion	Implications for Practice
Abdullah, A., Emery, C. R., Jordan, L. P. (2020). Neighbourhood collective efficacy and protective effects on child maltreatment: A systematic literature review. *Health & Social Care in the Community, 28*, 1863–1883. https://doi.org/10.1111/hsc.13047	To review empirical studies published 2008-2019 on mixed findings and pathways through which neighbourhood collective efficacy could protect children from parental maltreatment.	Systematic literature review (of 21 empirical studies) following PRISMA (preferred reporting items for systematic reviews and meta-analyses) guidelines ● Level 3	Both direct and sequential pathways in which increased social cohesion and informal social control (ISC) protect against parents' maltreatment behaviors. Higher levels of neighborhood social cohesion were found to be potential primary preventive strategies against risk factors for maltreatment.	Collective efficacy enhancement programs should be developed to promote neighborhood residents' protective and intervention efforts in child maltreatment issues by promoting engagement and participation in social clubs that teach and share parenting norms and practices to facilitate neighborhood cohesion.
Crouch, E., Radcliff, E., Brown, M., & Hung, P. (2019). Exploring the association between Parenting Stress and a child's exposure to adverse childhood experiences (ACEs). *Children and Youth Services Review, 102,*	Hypothesis: "Children of parents experiencing parenting will be more likely to have four or more ACEs."	Cross-sectional study used data from 2016 National Survey of Children's Health (NSCH). Final study sample = 45.831 ● Level 1?	4.4% of caregivers reported "high parenting stress" and the children living with them were three times more likely to experience four or more ACEs by the age of 18. Parenting stress, negative feelings related to the demands of parenting, is a	Need to address parenting stress, especially among low-income caregivers and single parents and to monitor at-risk children for child maltreatment.

186–192. https://doi.org/10.1016/j.childyouth.2019.05.019			well-documented risk factor for child maltreatment, neglect and exposure to multiple traumatic events.	
Gilgoff, R., Singh, L., Koita, K., Gentile, B., & Marques, S. S. (2020). Adverse childhood experiences, outcomes, and interventions. *Pediatric Clinics of North America, 67*(2), 259–273. https://doi.org/10.1016/j.pcl.2019.12.001	Clinical practice guidelines in interventions of preventing ACEs through screening in pediatric medical settings, providing anticipatory guidance and treatment of health complications arising from ACEs.	Clinical practice guidelines ● Level 4	ACEs screening can be used as an assessment of a child's risk for developing neuroendocrine and immune dysregulation otherwise known as toxic stress response. Domains of anticipatory guidance for toxic stress may aid in addressing stress and improve some aspects of neuroendocrine and immune function and other health outcomes. Some of the domains include: healthy relationships, sleep, nutrition, exercise, and mindfulness.	Educating CHWs and secondarily parents on healthy relationships, sleep, nutrition, exercise, and mindfulness could act as a buffer against toxic stress to protect children that anticipate experiencing ACEs to avoid and prevent further health complications in life.
Logan, R. I. (2019). 'A poverty in understanding': Assessing the structural challenges experienced by community health workers and their	To elucidate the lived experiences of CHWs operating in the United States	a year-long ethnographic research ● Level 4	Key barriers encountered by CHWs: difficulty in accessing resources for clients, lack of effective public transportation, barriers within the professional workforce,	CHWs can positively address these barriers via structural competency approach which elucidates/addresses harmful effects of structural violence.

clients. *Global Public Health, 15*(1), 137–150. https://doi.org/10.1080/17441692.2019.1656275			overarching negative impact of structural violence on client motivation	
Lorenc, T., Lester, S., Sutcliffe, K., Stansfield, C., & Thomas, J. (2020). Interventions to support people exposed to adverse childhood experiences: Systematic review of Systematic Reviews. *BMC Public Health, 20*(1), 1–10. https://doi.org/10.1186/s12889-020-08789-0	To measure positive mental health outcomes of various psychological interventions in people who were exposed to abuse.	Systematic review ● Level 3	The strongest evidence is for cognitive-behavioral therapy for people exposed to abuse. For other interventions – including psychological therapies, parent training, and broader support interventions – the findings overall are inconclusive, although there are some positive results. CBT most effective in children who have been sexually abused. Psychological interventions aiming to improve individuals' mental resilience did well which was true across abuse and neglect populations as well as household adversity populations.	Implementing educational modules for mental resilience for CHWs may be the most effective in a utilitarian sense in hopes of decreasing the rate of ACEs. For more specific cases, CHWs can refer sexually abused children to CBT.
Matjasko, J. L., Herbst, J. H., & Estefan, L. F. (2022). Preventing	To examine the role of research on preventing ACES	Literature review ● Level 3	CDC supported studies showing how economic support for families and	Financial support for families and making more accommodations for

Adverse Childhood Experiences: The Role of Etiological, Evaluation, and Implementation Research. *American Journal of Preventive Medicine, 62*(6), S6–S15. https://doi.org/10.1016/j.amepre.2021.10.024			promotion of family-friendly work policies are effective in reducing or mitigating ACEs.	parent(s) to be able to support their children reduces ACEs.
Oral, R., Ramirez, M., Coohey, C., Nakada, S., Walz, A., Kuntz, A., Benoit, J., & Peek-Asa, C. (2016). Adverse childhood experiences and trauma informed care: the future of health care. *Pediatric RESEARCH, 79*(1), 227–233. https://doi.org/10.1038/pr.2015.197	To measure the impact of ACEs and traumatic toxic stress on health.	Literature review ● Level 3	Having 4 or more ACES = increased rates of smoking 2.2x, alcoholism 7.4x, substance abuse 4.2x, IV substance use 11.3x, severe obesity 1.6x, sexual intercourse w/ 50+ partners 3.2x w/ a clear dose-response relationship between the number of ACEs and adoption of these high risk behaviors. 4 or more ACEs = increased risk of depression 4.5x, suicide attempts 12.2-15.3x.	Intervention should focus on strengthening individual and community resilience rather than solely identifying and responding to individual ACEs by strengthening communities and reducing resource disparity.

Appendix D

Resiliency Theoretical Framework

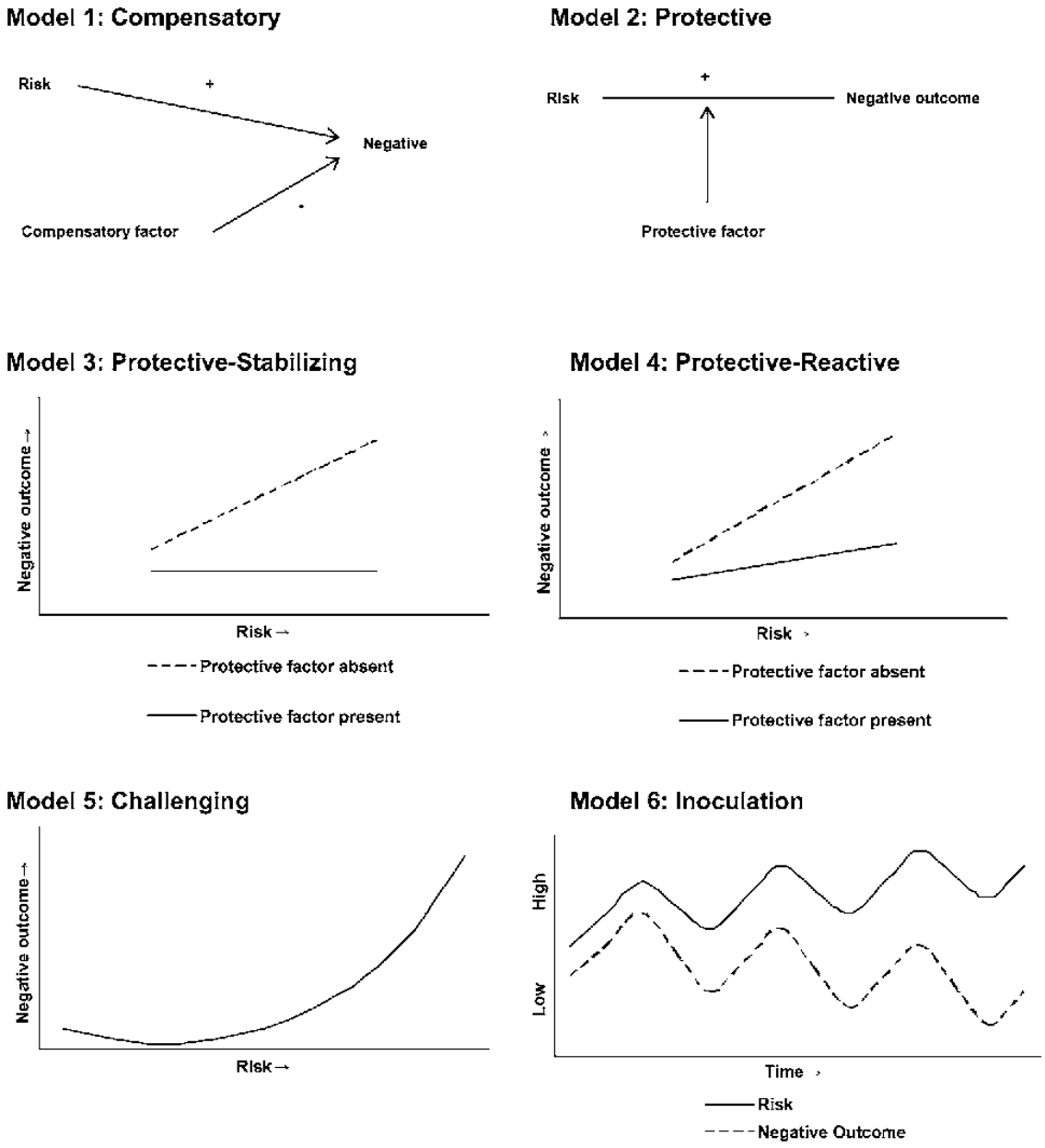

Figure 1 Models of resilience.

Appendix E

Gap Analysis

Current State	Lack of primary prevention strategies; lack of implementation options to prevent ACEs, lack of resources to maintain healthy environments for children to avoid TTS, lack of education for CHWs, parents/guardians, or children about ACEs and its health outcomes.
Future State	Formal education and training for CHWs resulting in increased ACE identification through screening, primary prevention through social theories, building relationships and trust between community members and teaching at-risk populations coping strategies and resources through CHWs.
Gap	Lack of education and training for CHWs to assist in the community in preventing ACEs and buffering TTS.
Action to Close Gap	Creation and implementation of an evidence based educational curriculum along with hand on training for CHWs to educate, provide resources and teach coping skills for at-risk populations and community members in general about ACEs and TTS.

Appendix F

Gantt Chart

Timeline	2022			2023
	Spring	Summer	Fall	Spring
Research literature and draft manuscript. Obtain stakeholder input. Draft curriculum and identify possible topics.				
Write a prospectus and finalize the curriculum. Collaborate with DNP students, USF faculty and Save the Children coordinator for teaching schedules.				
Implementation of the project. Delivery of educational modules to CHWs. Obtain feedback from CHWs and evaluate for necessary revisions.				
Data analysis and Final Project Report. DNP Presentation to USF				

Appendix G

Work Breakdown Structure

1. Literature Review and Manuscript
    a. Researching existing data on ACEs as a public health concern, ACEs primary prevention, TTS, and effectiveness of CHWs on various databases.
    b. Draft a literature review and manuscript with feedback from advisor and secondary reader and modify paper as needed.
2. Curriculum Development
    a. Continue to research ACEs prevention strategies and assess.
    b. Obtain stakeholder input.
    c. Draft and organize educational material in five modules.
3. Collaboration
    a. Meetings with advisor, secondary reader, project director, other DNP students.
    b. Finalizing educational material (e.g., powerpoints, case studies, group discussions, quizzes).
4. Implementation
    a. Finalize curriculum and double check with collaborators.
    b. Teach the course on ACEs prevention.
    c. Include pre-test and post-test to measure outcomes.
5. Evaluation
    a. Examine measurements and data analysis.
    b. Refine project according to feedback.
    c. Finalize project report and presentation.

Appendix H

Communication Matrix

Communication	Task and Frequency	Audience
Stakeholder Meeting	To present the ACEs prevention education curriculum, assess for adjustments via feedback and suggestions and request for project approval. Biannually.	Stakeholders
Educational and Training Session	To implement ACEs prevention education for CHWs. Ongoing basis depending on class schedule.	Staff, CHWs
Team Meetings	To collaborate with involved individuals and stakeholders and staff about curriculum design to ensure best evidence for practices and that educational modules align with values and priorities. Annually.	Stakeholders, staff, CHWs (voluntarily)

Appendix I

SWOT Analysis

Strengths	**Weaknesses**
● Provide a safe space for vulnerable parents and children individually to decrease suffering. ● Small class sizes that promote individualized learning and build rapport between staff and CHWs. ● Education for CHWs on identifying the risks of ACEs, prevention, buffer systems for TTS depending on the source of ACE. ● Practical training through case studies and group exercises for practical use of identifying risks and chances for prevention and utilizing buffer systems for ACEs/TTS. ● Spreading the information/education from classes to the community via word of mouth.	● CHWs may be hesitant or reluctant to participate. ● Parents may be the perpetrators of the ACEs. ● Lack of time available. ● No immediate financial gain. ● Difficulty obtaining governmental (financial) assistance to implement the program.
Opportunities	**Threats**
● Decreased financial costs of healthcare from diseases and disorders stemming and/or exacerbated from ACEs by preventing ACEs. ● Facilitate laws and policies to prevent ACEs/child abuse. ● Encourage personal growth, coping strategies and self soothing. ● Facilitate education about resource gathering for older children/young parents. ● Creation of a team of CHWs to continue awareness, prevention and coping with ACEs.	● Lack of public interest. ● Lack of funding from public sectors/government. ● Lack of existing literature and plans for future research about ACEs primary prevention. ● Lack of implementation of ACEs prevention strategies, lack of existing resources available for children and/or parents.

Appendix J

Budget and Cost Avoidance Analysis

Line Item	**Year 1**	**Year 2**	**Year 3**
Cost avoidance from ACEs prevention	N/A	$1.5 million	$1.5 million
Gross Revenue	$0	$1.5 million	$1.5 million
Expenses: CHW wages ($53,930k per CHW) x 13 CHWs currently	$717,090	$717,090	$717,090
Total Expenses	$717,090	$717,090	$717,090
Total Net Profit	**-$717,090**	**$782,910**	**$782,910**

Appendix K

Data Table and Calculations

Student	Mod 1 Pre	Mod 1 Post	Mod 2 Pre	Mod 2 Post	Mod 3 Pre	Mod 3 Post	Mod 4 Pre	Mod 4 Post	Mod 5 Pre	Mod 5 Post
1	1.25	4.08	1.5	4.5	3.33	3.5	2	5	3.17	5
2	4.08	5	4	5	2.5	3.5	4.5	5	3.83	5
3	3.08	3.75	3.25	5	0.83	4	3.83	5	2.5	4.67
4	3.75	4.15	2.5	4.25	1.83	2.5	4.33	5	3	5
5	3	4.5	1.5	5	0.33	4	1	5	1.83	4
6	3.75	4	3.75	5	2.33	3.5	3.67	4.5	2.67	4.5
7	2.58	3.75	4	4.25	1.5	3.16	3.33	2.33	1.83	3.67
8	5	3.67	4.5	5	2.33	4	5	4.67	1.5	4.5
9	4.08	5	2.5	4.5	2.16	5	3.5	3.83	2.83	4.67
10	3.25	5	0	5	1.33	4.5	4.5	5	0.66	5
11	3.58	4.75	3.25	4.5	3	5	3.5	5	1.83	4.5
12	1	3.58	0	1.25	1.5	3.5	5	5	3.33	5
13	1.83	4.75	3	5	1.83	2.5	4.5	5	1.66	5
Avg	3.09461	4.30615	2.59615	4.48076	1.90769	3.74307	3.74307	4.64076	2.35692	4.65461
Incr		24.32%		37.68%		36.72%		17.32%		45.95%

Avg of Incr = 32.40%

<u>Difference Scores Calculations</u>

Mean: 1.63

S: 1.26

$\mu = 0$

S2 = SS/df = 1.26/(5-1) = 0.32

S2M = S2/N = 0.32/5 = 0.06

SM = √S2M = √0.06 = 0.25

T-value Calculation: $t = (M - \mu)/SM = (1.63 - 0)/0.25 = 6.47$

The value of t is 6.46517. The value of p is .00295. The result is significant at $p < .05$.