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Chantel M. Kilford Ms

University of San Francisco, chantelmkilford@yahoo.com

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**School-Based Development and Implementation of Adolescent Mental Health
Educational Toolkits**

Chantel Kilford

University of San Francisco, School of Nursing and Health Professions

Committee Chair: Dr. Trinette Radasa

Committee Member: Dr. Susan Mortell

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Abstract

After the onset of the COVID pandemic, there were significant increases of adolescents with anxiety, behavioral and conduct problems. These disorders have devastating individual, social, and economic ramifications and school-based staff play a key role in identification, assessment, and treatment. Evidence suggested that healthcare providers, school counselors and teachers were not confident or knowledgeable about adolescent mental health. The purpose of the change in practice project was to increase knowledge and confidence among school-based healthcare providers, school counselors and teachers by providing an adolescent mental health tool kit. The toolkit focused on disruptive behavior and other prevalent mental health disorders and trauma focused evidence-based resources that can be used with students. For healthcare providers there is education about an adolescent mental health risk assessment tool and its application. Ethical considerations included the American Nurses Association code of ethics, University of San Francisco Jesuit values and the high school mission. The quality improvement project was a two-group pre-post assessment with educational PowerPoint presentations and integrated concepts of the Conceptual Model of Nursing and Population Health. One group consisted of the school counselors and teachers and the other group were healthcare providers. The barriers that were faced when implementing the innovation were time restriction and resistance to change. Data analysis results showed the projects aim was achieved with over a 20% learning gain for both groups and both parametric and nonparametric pre and post differences in means were significant, there was however an insufficient study population. Qualitative evaluation indicated positive staff attitudes of the adolescent mental health tool kit.

Keywords: ADHD, adolescent, children, conduct disorder, oppositional defiant disorder, pediatric mental health, school-based

School-Based Development and Implementation of Adolescent Mental Health Educational Toolkits

Background

Behavioral disorders such as conduct disorder (CD) and oppositional defiant disorder (ODD) have devastating individual, social, and economic ramifications and healthcare providers, school counselors and teachers play a key role in prompt identification, assessment, and interventions (Fairchild et al, 2019). A review of the available evidence found that often healthcare providers, school counselors and teachers are not confident or knowledgeable about identification and assessment of CD and ODD. Recommendations include educational interventions in school settings and the use of valid, reliable assessment tool to identify children with conduct traits and associated common co-morbidities.

The quality improvement project includes educational interventions within a high school for healthcare providers, school counselors and teachers about disruptive behavioral disorders in adolescents and other prevalent mental health disorders. Also, there was an integration into practice for health care providers, the Pediatric Symptom Checklist (PSC, Massachusetts General Hospital, 2018) which identifies conduct traits consistent for CD and ODD. The PSC has been used extensively to identify children at risk of conduct traits as well as other childhood mental health disorders (Burke et al., 2021; Holcomb, 2021; Murphy et al., 2021).

The project costs were modest, however there is an increasing return on investment overtime as early identification and intervention has been shown to improve children's lifelong outcomes (Frick, 2016). The results of the project advanced education within the high school system and initiated a useful tool for healthcare providers to use, which according to a position statement by the American Academy of Pediatricians is very much needed (Foy et al., 2019).

Problem Description

Conduct Disorder is a mental health condition which starts in childhood and can cause detrimental effects well into adulthood. Conduct disorder is described by the American Psychiatric Association (APA, 2013) as “a repetitive and persistent pattern of behavior in which the basic rights of others or major age-appropriate societal norms or rules are violated” (p. 469). Conduct disorder has specific diagnostic criteria in which three out of 15 criteria must be met and at least one of these must be within the previous six months. Criteria is categorized under the concepts, aggression to animals or people, destruction of property, deceitfulness or theft and evidence of serious violations of rules. Oppositional defiant disorder is “a pattern of angry/irritable mood, argumentative/defiant behavior, or vindictiveness for at least six months” (APA, 2013, p. 462). To fit diagnostic criteria four out of eight symptoms must be met and these symptoms are categorized by angry/irritable mood, argumentative/defiant behavior, and vindictiveness (APA, 2013).

. Within the United States of America (USA), national survey data from the Health Resources and Services administration Maternal and Child Health Bureau (2020) found that behavioral and conduct problems of children aged three to 17 years of age is 6.9% of the USA population and is the sixth highest childhood prevalent health condition. Anxiety is the only childhood mental health condition that is more prevalent. After the onset of the pandemic, there were significant increases in children diagnosed with behavioral or conduct problems (Lebrun-Harris et al. 2022). It is important to identify and assess childhood behavioral disorders because they impact individuals academic progress, increases potential for criminality and increase the risk for other mental health and substance abuse disorders later in life (Fairchild et al., 2019). Behavioral disorders such as CD and ODD are also associated with a high societal and economic

burden (Fairchild et al., 2019). Health disparities such as low economic status, poverty and community violence increase the risk of these behavioral and disruptive disorders (Fairchild et al., 2019). Early identification of disruptive and conduct type disorders improve life-long outcomes for children (Frick, 2016).

Specific prevalence of CD and ODD are not available within Alameda County, California, where the project was implemented. However, children with a serious emotional disturbance constitute 7.1% of the population within the San Francisco Bay Area (California Health Care Foundation, 2018). The National Alliance on Mental Illness (2021) state that in California, 17% of adolescents between 12-17 years old have a serious mental illness and 64% of adolescents did not receive needed mental health treatment. The U.S Department of Health and Human Services (2021a) state that mental, emotional, and behavioral disorders begin early in life and evidence illustrates that prevention through early childhood interventions produces the best outcomes. The specific Healthy People 2030 objectives that pertain to CD and ODD are to identify and increase the number of adolescents with a serious emotional disturbance to receive treatment (U.S Department of Health and Human Services, 2021b). Alameda County (2020) and the California Mental Health Planning Council (2016) have similar initiative indicators as Healthy People 2030, regarding increases in mental health services for children and adolescents.

There is a need for the described educational toolkits not only because of increasing national prevalence of these disorders, but also evidence suggests that healthcare providers, school counselors and teachers do not receive enough education and are not confident enough to identify, assess and manage these behavioral disorders (Balestra, 2019; Baum et al., 2019; Lempp et al., 2016). Gecker (2022) states that Northern Californian teachers are now having to

expand their mental health knowledge so that they can identify mental health issues with students. Onsite training has shown a positive relationship between intervention uptake and change in practice (Baum et al., 2019).

Setting

The project was completed in a high school within Alameda County, California. The high school has around 1600 students aged between 14 and 18 years of age. Within the high school the educational interventions were completed by the teachers and school counselors and then a different educational intervention for the health care providers. There is a primary care health center on site, which comprises of a family nurse practitioner (FNP) as well as school registered nurses (RN). There are also intern school counselors and intern psychiatric mental health nurse practitioners (PMHNP) as well as teachers, school counselors, a social emotional counselor, therapists, and a librarian.

Specific Aim

Based upon the literature review, the project aim statement was that by April 2023, there was development, implementation, and evaluation of educational toolkits about adolescent mental health disorders and management. Also, an assessment tool was implemented so that healthcare providers can identify mental health risk in adolescents. The desired outcome was that healthcare providers, school counselors and teachers' knowledge and confidence will be increased by 20% post educational intervention and there will be a significant increase in knowledge and confidence after the implementation of the educational interventions.

Available Knowledge

PICO(T) Question

A review of the evidence relating to CD and ODD and teachers, school counselors and healthcare providers confidence and knowledge was performed. The following PICOT (Population, Intervention, Comparison, Outcome and Time) question was used to help guide the literature search: Would the development, implementation, and educational toolkit about adolescent disruptive behavior and prevalent adolescent mental health disorders and the integration of a mental health assessment tool increase knowledge and confidence among healthcare providers, school counselors and teachers compared to status quo measures over a period of four months?

Search Methodology

A systematic search was conducted using the following databases from the University of San Francisco Library: PubMed, CINAHL, Cochrane Database of Systematic Reviews, APA Psych Info, AHRQ Evidence reports, Joanna Briggs Institute EBP database and National Institute for Healthcare and Clinical Excellence Database. The key words used within the searches were: Conduct disorder, oppositional defiant disorder, primary care, pediatricians, school counselors, teachers, nurse practitioner, pediatric mental health assessment tool, assessment tool and physician. Initially when searching the search terms this gave 258 results on CINAHL, 3000 on PubMed, 100 articles on APA Psych Info and 25 articles on Cochrane Database of Systematic Reviews. To narrow the scope on Pub Med and CINAHL a combination of search terms was used from the above mentioned to narrow down the specific focus of CD and ODD. The search was narrowed down further by using a publication date within the last ten years and English language and citation backward searching with most recent articles.

Integrated Review of the Literature

Throughout the literature review and synthesis, the John Hopkins Nursing Evidence-Based Practice (JHNEBP) appraisal tools were utilized. JHNEBP appraisal tools enable research and non-research evidence to be analyzed through questioning elements of that evidence. The user can then establish what level and quality of evidence is appropriate. Levels of evidence range from level one to level five and are dependent on the strength and type of study design. The quality of the evidence is categorized as, A is very good quality, B is good quality and C is poor quality (Dang et al. 2022). All appraised evidence is summarized in a table within Appendix A of the paper.

Disruptive Behavioral Disorder Mortality Risk and Outcomes

Border et al. (2018) found that mortality hazard for adolescents who have CD, and their siblings was 4.9 times higher than those children without CD (hazard ratio 1.18, $p < .001$). Border et al. (2018) also found that adolescents with CD had higher mortality risk than their siblings and sibling mortality risk was higher than children without CD. In Border et al. (2018) prospective, longitudinal, cohort study, children with CD and their siblings were recruited from court records, juvenile correctional systems, and substance abuse programs within the USA. It is important for healthcare providers and teachers to recognize that mortality risk is significant not only for children with CD, but also their siblings, and screening should be completed accordingly. The JHNEBP appraisal score is Level II, A.

The earliest age of the participants in Border et al. (2018) study were 16 years of age. These children were already either part of the juvenile correctional system or in substance abuse programs. When those participants were diagnosed with CD is unclear, but evidence from Bevilacqua et al. (2017) found that the younger children present with symptoms, the poorer the

outcome. So, these results could be potentially even more devastating with these children. Bevilacqua et al. (2017) also found in their meta-analysis of longitudinal studies that children who had adolescent onset and childhood limited CD also had poorer psychological outcomes than children with low levels of CD symptoms. However, early onset CD had the worst outcomes and identification, and early interventions is recommended to minimize antisocial behavior. The JHNEBP appraisal score is Level III, B, good quality. Generally, ODD and CD are viewed as a continuum or spectrum with ODD sometimes seen as a precursor before CD appears and then at the opposite end of the spectrum is antisocial personality disorder (Sagar et al. 2019). However, just because a child may exhibit ODD does not mean that CD will follow or antisocial personality disorder (Sagar et al. 2019).

Disruptive Behavioral Disorder Comorbidities and Trajectories.

The National Institute for Health and Care Excellence (NICE, 2017) established clinical guidelines for the management of CD within the United Kingdom (UK). Recommendations are based on a vast array of evidence-based research. It was found that there are co-morbidities that can exist with CD, mainly attention deficit hyperactivity disorder (ADHD), and providers need to be aware of this and screen accordingly. Within the USA there are not any evident clinical guidelines for CD; only a policy statement which incorporates all pediatric mental health disorders (Foy, 2019). The clinical guideline states that a general mental health assessment tool is appropriate for CD screening and gives recommendations for parental training, psychosocial interventions, and pharmacological therapies (NICE, 2017). Interestingly, these guidelines advise awareness of diagnostic bias and potential stigma due to diagnosis. The JHNEBP appraisal score is Level IV, A. These potential issues were discussed within the educational interventions.

Bakker et al. (2017) performed a meta-analysis, which included the clinical guideline evidence from NICE, (2017) regarding psychological treatments for CD. These findings concluded that use of psychological treatments, especially in children under ten years of age are essential and that the biggest co-morbidity of CD and ODD is ADHD. Bakker et al. (2017) found in the meta-analysis that there is a lack of evidence supporting what the best treatment is, mainly because of a lack of rigor in research due to poor study design and sample size. The JHNEBP appraisal score is Level I, B. Marsh and Cox (2022) found that children with disruptive disorders have not learnt how to emotionally regulate and then find emotions harder to tolerate and self soothe. Marsh and Cox (2022) discuss that this can result in severely limited coping and maladaptive strategies (avoidance strategies, emotional numbing) and survival-based characteristics (aggressive behavior, impulsivity, emotional disconnection from others).

Patel et al. (2018) found in their quantitative, retrospective analysis of demographic predictors and comorbidities of hospitalized children with CD in the USA, that there is the potential for diagnostic bias. Patel et al. (2018) identified that black males under the age of 11 have the highest risk of inpatient admission with CD. These patients also have the highest risk of co-morbid psychosis and depression. Low-income families have a 1.5 times higher risk of inpatient admission than high income families. The JHNEBP appraisal score is Level II, B.

Fadus et al. (2019) also identifies how health disparities can increase CD. Fadus et al. (2019) discusses how bias may misdiagnose Black and Hispanic youth, and these children are more likely to receive a diagnosis of CD than non-Hispanic white children, who are more likely to be diagnosed with ADHD. Also, having an unstable support network whether it be inconsistent, harsh parenting practices, family dysfunction, caregiver neglect and abuse, and or frequent changes in caregivers has shown to increase the risk of CD (Fadus et al., 2019). Carliner

et al. (2017) found that externalizing disorders, such as CD and substance abuse disorders that generally begin in adolescence, are more likely to emerge in adolescents with prior trauma. Oppositional defiant disorder onset, in contrast, is unrelated to trauma exposure but is associated with an elevated risk of experiencing trauma later in development. This is important for healthcare providers, school counselors and teachers to be aware of, as this indicates that behavioral disruptive disorders such as CD and even aggression in adolescents can be due to trauma. Children with ODD have a higher risk of trauma in adolescence. Furthermore, the more trauma youth have experienced, the more likely they are to be diagnosed with CD (Marsh & Cox, 2022). Therefore, assessment and interventions should be trauma focused.

Healthcare Providers, School Counselors and Teachers Knowledge and Confidence

Baum et al. (2019) study wanted to improve management of pediatric mental health conditions and did this through onsite training within 29 primary care practices in the USA. The study is a quantitative, quasi experimental, one group pretest-posttest design and clinical confidence was measured over time using a linear regression model. A Pearson correlation coefficient was used to assess the relationship between change in clinical confidence and program uptake. It was found that clinical confidence increased on average by 20% throughout the training and there was a positive relationship between intervention uptake and change in practice. The study concluded that healthcare providers did have a lack of knowledge and confidence about mental health conditions, including CD, and the onsite trainings did improve this. Therefore, an educational intervention about CD and ODD, with onsite trainings will be of value to healthcare providers. The JHNEBP appraisal score was Level II, B.

Foy et al. (2019) formulated a manuscript, published by the American Academy of Pediatrics to outline a revised policy statement about pediatric mental health competencies in

healthcare. One of the purposes of the policy statement is to improve the assessment and treatment of children who display disruptive and/or aggressive behavior. Evidence shows that there is a lack of training and confidence to treat and counsel these children. Evidence similarly was found by Baum et al. (2019). Foy (2019) gives evidence-based behavioral recommendations for children with disruptive and aggression problems as well as brief interventions that healthcare providers can use. Competencies are outlined in the policy statement that demonstrate that healthcare providers can analyze and interpret results from mental health screenings. The competencies in the policy statement provide guidance when considering the scope of practice of healthcare providers treating mental health conditions. These competencies can be incorporated into clinical decision making. The JHNEBP appraisal score is Level IV, A, high quality. Lempp et al. (2016) also found that physicians have a lack of knowledge and confidence when treating children with CD. The researchers surveyed physicians and pediatricians and found that both ranked four out of five for importance of knowledge about CD. Additionally, when asked to rank 17 psychiatric diagnoses at level of need for knowledge, CD ranked eighth with physicians and fifth with pediatricians. The JHNEBP appraisal score is Level II, B.

Hanisch et al. (2020) discussed how childhood behavioral disorders such as ADHD, ODD and CD can impact psychosocial development, including academic underachievement. Hanisch et al. (2020) developed a school-based coaching (SCEP) for elementary school teachers of children with these behavioral disorders. Based on a functional behavior assessment, SCEP addressed teachers of children with severe externalizing behavior problems in an individualized modular manner. The goals of SCEP were to reduce problem behavior, increase student-teacher relationship, increase knowledge, and reduce teachers stress levels. Hanisch et al. (2020) found

that with SCEP there was a significant reduction in problem behaviors and attention span was significantly increased. However, teachers also pointedly changed their teaching styles. However, teachers stress levels were not reduced. The SCEP program was very labor intensive, and the teachers, along with the clinical psychologists worked with one child at a time. Even though the study design could have been improved through manipulation of the independent variable with randomization controls, the study is relevant to the project as there are aspects of the SCEP manual and functional behavioral analysis that can be applied to both teacher and healthcare providers to reduce problem behavior. Teachers' knowledge and confidence did increase with regards to the childhood ADHD, CD and ODD and how to manage these disorders through the behavioral interventions. The JHNEBP appraisal score is Level III, B.

The American School Counselor Association (2019) specify that school counselors, unless given additional training cannot provide therapy or long-term counseling services to high school students, so they may have a limited scope of knowledge centered around therapeutic modalities. Even though dialectal behavioral therapy resources are used within the project's educational interventions, there was mindful consideration to the chosen resources being selected for both the teachers and school counselors, so they would be appropriate and easily interpreted by staff and the high school students. Also, the ratio of student to school counselor within high schools is often extremely high. The current high school has five school counselors and seven intern school counselors for 1632 students (Education Data Partnership, 2022). It was therefore also important that the educational toolkit was adaptable and easy to implement by all school staff.

Therefore, the previous studies are pertinent to the PICOT question: Healthcare providers, school counselors and teachers do have a lack of knowledge and confidence in

assessing and treating children with disruptive behavioral disorders. Also, educational interventions do help increase knowledge and confidence, which in turn will improve outcomes.

Importance of Child Mental Health Assessment Tool Within School and Healthcare Settings

Bloomfield (2022) states that it is important for healthcare providers looking after children to obtain primary mental health screening tools, which give an overall assessment of the children and secondary screening tools which focus on specific mental health disorders. Within the USA, between 13% to 20% of adolescents in one year experience a mental health disorder and primary and secondary tools can identify and reduce the chances of missing an opportunity to provide assessment and treatment (Bloomfield, 2022). The American Academy of Pediatrics recommends two primary screening tools, either the Strengths and Difficulties Questionnaire (SDQ) or the PSC (Bloomfield, 2022).

Donohue et al. (2015) implemented a quality improvement project within their school after recommendations from the Connecticut Office of the Child Advocate suggesting that there should be screening of youth's behavior and development. The recommendations came after 20 first-grade children and six educators were fatally shot at Sandy Hook Elementary School in Newtown, Connecticut in 2012. Donohue et al. (2015) believe that schools can be an integral part of the screening process, connecting school, home, and mental health professionals to identify students with elevated needs and provide integrated supports. Donohue et al. (2015) evaluated several tools and chose the Behavior Assessment Scale for Children Two: Behavior and Emotional Screening Scale (BASC-2 BESS). School counselors input data for 944 children and *t* scores were obtained, which determined if children were at no risk or at an increased risk of a mental health disorder. Those children who were at risk received individual and/or group

psychotherapy. Parents gave consent for the student self-assessment to be completed and were informed of the results and interventions.

Donohue et al. (2015) only used the self-report assessment tool and there were issues with some children not understanding the questions, or the format of the assessment. The study did not incorporate randomization and controls or measure child outcomes. However, the study did demonstrate that it is important to monitor children's mental health within a school setting. Given the shortcomings of the self-report tool, it seems crucial to utilize a validated, recognized tool and one that subjects can accurately understand and complete. Monitoring children's mental health through a validated assessment tool is also supported by Foy et al. (2019), Hanisch et al. (2020) and NICE (2017).

Synthesis of the Evidence

All the evidence presented is either of high or good quality and are research based. The main criticisms of the studies used for the review are from a methodological stance. In four of the studies (Baum et al. 2019; Border et al. 2018; Donohue et al. 2015; Hanisch et al. 2020) there is no random assignment, although within quasi-experimental design sometimes this can be challenging. Also, the meta-analysis conducted by Bevilacqua et al. (2017) used only two databases to conduct their study search but did implement other sound methodology such as using effect sizes to ascertain acceptable sample size. However, both the clinical guideline (NICE, 2017) and policy statement (Foy et al. 2019) were updated within the previous five years, as recommended by Dang et al. (2022). Also, they both are sponsored by a regulatory body, but did not utilize appraisal scoring for separate research studies used within the evidence provided. All studies did use adequate sample sizes apart from Hanisch et al. (2020) and all are generalizable to healthcare providers, school counselors and teachers in the USA. Even those

studies outside of the USA, where healthcare and school systems operate differently, are applicable to healthcare providers and teachers due to the context of those findings. When applicable, all studies that used assessment tools, used these tools appropriately to guide assessment, apart from Donohue et al. (2015).

The consensus found in the studies was that the SDQ assessment tool or the PSC were consistently used to assess risk for disruptive behavioral disorders such as CD and ODD. Gaps surrounding knowledge of the disorders were identified. The need for education of teachers, school counselors and healthcare professionals about CD, ODD and the mental health conditions that coexist with these is evident (Balestra, 2019; Baum et al., 2019; Hanisch et al, 2020). There is not a mental health assessment tool consistently used to assess for these disruptive, behavioral disorders within pediatric healthcare or school settings or that screens children's overall mental health. The PSC not only assesses for signs of CD and ODD, but also assesses for inattention, anxiety, and depression (Massachusetts General Hospital, 2018).

Rationale

The theoretical framework that was used for the project is Fawcett and Ellenbecker's (2015) Conceptual Model of Nursing and Population Health, displayed in Appendix B. The model was chosen because it is tailored to improve the health outcomes from a population, upstream approach within the USA. A central part of the model is the nurse and the influence that the nurse can have on populations; so, it is not just an individualized approach. The Centers for Disease Control and Prevention (CDC, 2020) state that population health is an interdisciplinary approach, which involves communities including teachers and school counselors.

The primary focus of the theory is the attainment of the highest level of quality of life and

the theory concentrates on those nursing activities that can promote well-being and prevent disease. The constructs within the Conceptual Model of Nursing and Population Health that were integrated throughout the project were using an upstream approach, population focused as well as integration of healthcare systems as well as nursing activities (Fawcett & Ellenbecker, 2015). The nursing activities included the actions necessary to improve population outcomes and mediated the relations of the other constructs so that this can lead to the desired population outcomes of wellness, disease prevention and improved quality of life. As school counselors and teachers will also be included in the intervention, they are also an integrative part of population health because there is a focus on children's levels of well-being, and this directly impacts educational achievement (CDC, 2020).

The educational intervention delivered an evidence-based program based on disease prevention and an upstream approach. The educational intervention also included the social determinants of health. By utilizing a mental health assessment tool and educational toolkit, the construct population factors, and behavioral factors of future students were addressed. Health care system factors was also be included in the project, especially regarding time resources and relevant competencies and policies.

Methods

Context

The adolescent mental health toolkit comprised of two different educational interventions that incorporated two PowerPoints that can be used as an ongoing reference. The project was designed and implemented within four months. The teachers, school counselors, intern school counselors, assistant principal and librarian stakeholders took one educational intervention. The healthcare providers including the FNP, intern PMHNPs, RNs, social emotional counselor and

the therapist's stakeholders took the other educational intervention. Two different PowerPoints were necessary as the groups had different learning needs. After the intervention, healthcare providers encouraged students to complete the mental health assessment tool. If those resulted in a high risk, then they would be forwarded to the Coordination of Services Team (COST). The teachers and school counselors were given education within the intervention about criteria of who they can refer to COST. The COST team receives referrals from all stakeholders, including parents and student self-referral. The COST team then coordinates with the psychologist, therapists, the social emotional counselor, intern PMHNPs, community outreach and special education to delegate who is the most appropriate provider to manage those student's needs (Hayward Unified School District, 2022).

The FNP, intern PMHNPs, RNs, school counselors, intern school counselors, social emotional counselor, librarian, and teachers are highly interested stakeholders that need to be managed closely as they are directly related to the assessment and collection of data. The principal of the school (site advisor) and assistant principal would have less interest levels but would still need to be managed closely due to the operational effects of the project. All stakeholders were very interested in taking part in the education and recognized that adolescent mental health education is important. The generalizability of the project can be compared to most public, urban high schools within California.

Interventions

The proposed project consisted of two groups and was a pre-post assessment and educational intervention. There was no comparison between groups. The intervention was live in person presentations with PowerPoint for the teachers and school counselors and then another for the healthcare providers. Information included background on disruptive behavior and general

adolescent mental health including anxiety, ADHD, and complex trauma. The educational interventions lasted around 30 minutes and provided high school staff with a toolkit of resources that provided interventions to help students learn emotional regulation skills. Also, there were resources provided that can be given to students to reinforce this information. Emotional regulation skills were taken from dialectical behavioral therapy (DBT, Rathus et al. 2014). Recognition was given to applicable health disparities and risk factors influencing incidence of the disorders. Also, the mental health assessment tool was discussed within the healthcare providers presentation, including how to implement the tool and interpret results After meeting and discussing the educational needs of stakeholders with the principle and assistant principal, the project lead received a supportive email from the principal of the high school giving consent to implement the project and this is presented in Appendix C.

The mental health assessment tool that was incorporated within the healthcare providers tool kit is the PSC and this was designed by Michael Jelinek, psychiatrist, and Michael Murphy, educational psychologist, at the Psychiatry department at Massachusetts General Hospital. Both the paper and online version of the tool is free to use and requires no prior copyright authorization. The online version of the PSC parent version and youth version are provided by Mental Health America (2022) and its use is endorsed by the PSC authors. The online tool automatically scores the assessment and provides a score report. Consequently, the administrator does not have to score the assessment and results are immediate after the youth has completed the assessment online, all that is required is an email sign up (Mental Health America, 2022).

The Pediatric Symptom Checklist is a brief behavioral screening questionnaire for children aged 3-18 years old. The 35 questions explore externalizing problems including attention and conduct problems and internalizing problems such as depression and anxiety. The

PSC can be completed by healthcare providers and parents. Also, adolescents can self-report but should be 11 years old and over. The tool is available in over 31 different languages including Spanish. Student self-report should be encouraged as the children are all over 11 years old in the high school (Massachusetts General Hospital, 2018).

The Pediatric Symptom Checklist was chosen for many reasons, the test/retest reliability ranges from .84 to .91. and kappa is .84, internal consistency Cronbach alpha .91 and the tool has been used within the USA extensively to assess for the childhood mental health risk of CD and ODD (Massachusetts General Hospital, 2018). Conduct disorder and ODD also has many comorbidities that coincide with this disorder such as depression, anxiety, and ADHD (Patel et al., 2018). ADHD is a high comorbidity that can be frequently present in children with CD and ODD (Vetter et al., 2019) and is the most common co-existing comorbidity (NICE, 2017). Previous childhood trauma can also be evident for adolescents with aggression and CD (Marsh & Cox, 2022). So, a brief screening tool that can identify risk for these conditions is important for healthcare providers to implement. The PSC is the only pediatric mental health assessment tool that has been endorsed by the National Quality Forum (National Quality Forum, 2013).

The Pediatric Symptom Checklist has been used successfully to identify children at risk of disruptive and conduct type disorders, ADHD and anxiety and depression (Holcomb, 2021; Trafalis et al., 2021). The PSC has also been used as a general mental health screening tool in a school setting and primary care (Burke et al., 2021; Murphy et al., 2021; Trafalis et al., 2021). Predominately the PSC has been implemented when healthcare providers and/or parents have been concerned about the child's behavior and academic progress. It is important to add that the PSC is not a diagnostic tool but provides an initial gateway into additional clinical inquiry

(Trafalis et al., 2021). The PSC self-report tool was used within the project. English (USA) versions of the PSC for youth self-report is presented in Appendix D.

Gap Analysis

There were knowledge gaps identified when searching the evidence. Firstly, all research about the lack of knowledge and confidence in assessing CD and ODD is formulated from medical doctors and not nurse practitioners. FNPs and PMHNPs have a fundamental role within primary care and a school setting. However, in both FNP, PMHNP and medical school curriculum there is limited education about CD and ODD and family practice doctors have also identified the need for this education (Balestra, 2019; Baum et al., 2019; Lempp et al., 2016). The American Academy of Pediatrics (Foy et al., 2019) published pediatric mental health competencies in primary care to improve the assessment and treatment of children who display disruptive and/or aggressive behavior. Best practice includes incorporating a childhood assessment tool into practice and integration of mental health care into primary care. Currently, apart from the PHQ-A, which is recommended to screen depression in over 12-year old's (United States Preventative Services Taskforce, 2016) there are no childhood screening tools used consistently within primary care or school-based healthcare settings for these disorders.

There were barriers to implementing the educational intervention, including participants having insufficient time to attend the educational intervention and resistance with school counselors wanting to implement the mental health risk assessment. A gap analysis is presented in Appendix E. Post pandemic due to rising childhood mental health disorders, including violence and conduct type disorders, teachers are now being expected to identify and manage these disorders in the classroom. There are some educational interventions recently implemented by the state of California, which focuses on school-based learning about suicidal risk and

depression. Conduct type disorders do not appear to be discussed (California Department of Education, 2020).

Gantt Chart

A Gantt chart is displayed in Appendix F. The Gantt chart outlined the steps for the project design, and the timeline for the various steps of the project's completion, including communication with various stakeholders, designing educational materials, providing staff educational training and feedback to staff as well as a timeline for completing and presenting the DNP project. The implementation process of the project was completed in four months.

Work Breakdown Structure

The Work Breakdown Structure (WBS) assisted in identifying how the goals and objectives were met in the project (Moran et al., 2020). Within the project an outline format of the WBS was chosen, as this was easier to view and not difficult to amend if changes were needed (Project Management Docs, n.d.). The WBS analysis is presented in Appendix G.

The WBS firstly outlined the project initiation, steps included, the DNP Project committee approval, establishing stakeholder buy in from the high school and other relevant stakeholders, email of support from the organization project site and creation and sharing a timeline with stakeholders involved with the project. The WBS next outlined the planning of the project which included a needs assessment with informational interviews with stakeholders, gap analysis, formulating an aim statement and a GANTT chart to lay out a timeline for the project. The project planning also included identifying theoretical frameworks that assist with the overall project and identification of measurable objectives and defining budget items.

Next within the WBS analysis was project development and execution which involved creating and designing a qualitative question to ask stakeholders to evaluate the educational

intervention and assessment tool. Then development of the measurement tool questions that assessed knowledge and confidence of the healthcare providers, school counselors and teachers. Finally, identification of the format of the PSC (Massachusetts General Hospital, 2018) which was then integrated into practice.

The project implementation stage of the WBS analysis addressed the delivery of the educational interventions, with pre and post knowledge and confidence surveys and communication steps with stakeholders throughout the implementation. The WBS data analysis outlined the data that was analyzed and the use of statistical software to analyze that data. Finally, the WBS focused on the project close out, which incorporated presenting findings to stakeholders and the DNP chair and committee, the recommendations for future applications and the submission of the final manuscript for the DNP Project.

Communication Plan

The communication matrix is presented in Appendix H and displays essential stakeholders, frequency and means of communication. The meetings included the initial stakeholders meeting to establish educational need and if any mental health assessment tools had been used before and thoughts about the educational intervention and practice change. After the educational intervention and integration of the mental health assessment tool, an on-site meeting took place within a week to facilitate integration of the tool and if any issues. Ongoing meetings, focused on proper documentation and accurate interpretation of results and implementation of appropriate care. Communication with stakeholders at the project site was through on-site meetings, email, and phone calls.

Strengths, Weaknesses, Opportunities and Threats Analysis

The strengths, weaknesses, opportunities, and threats (SWOT) analysis is an assessment of both “internal and external attributes and threats to a phenomenon of interest” (Moran et al., 2020, p. 130). Through this analysis, the evaluation provided an overview of the current situation. The SWOT analysis is presented in Appendix I. The strengths of the project included that there is evidence within the existing literature to suggest that healthcare providers, school counselors and teachers have a lack of knowledge and confidence identifying and assessing CD and ODD in children, so the project was needed. The existing literature suggested that early interventions and primary and secondary prevention improves lifelong outcomes of children with these disorders (Frick, 2016). The Pediatric Symptom Checklist has been endorsed by the National Quality Forum (2013) and lastly, the mental health assessment tool, the PSC (Massachusetts General Hospital, 2018) has good reliability and validity and has been used within schools to assess for CD and ODD and overall childhood mental health (Burke et al., 2021; Murphy et al., 2021; Trafalis et al., 2021).

The weaknesses included the potential for the non-compliance and non-acceptance of the PSC (Massachusetts General Hospital, 2018). Healthcare providers may have had a preference to a different pediatric mental health assessment tool. A meeting was scheduled during the planning stage of the project to investigate this potential issue and the assessment tool was accepted.

The opportunities of the project were to create a culture of primary and secondary prevention within the high school. Also, the project educated healthcare providers, school counselors and teachers about adolescent mental health and integrated adolescent mental health competencies within the school setting. It also encouraged a team approach and collaboration of teachers, school counselors, the COST team, and healthcare providers.

The threats to the project were that the workflow maybe too busy to implement the mental health assessment tool into practice or complete the educational intervention. Due to the healthcare providers, school counselors and teachers being unionized, the educational intervention could not be made mandatory, as mandatory education is decided by the California Board of Education. Stakeholder incentive and buy in was gained from some of the healthcare providers, school counselors and teaching staff.

Budget and Financial Analysis

The high school participating in the project most recent absenteeism rate is 17% (Education Data Partnership, 2022). The California Department of Education (2022) cost of funding per day per student is \$85.92. After completing an analysis, the annual loss of funding based on chronic absenteeism and percentage reasonably attributable to mental illness within that high school totals \$74,234.880 annually. The Cost Avoidance Analysis is presented within Appendix J.

For the purposes of increasing the sustainability of this project, the PSC (Massachusetts General Hospital, 2018) which is the selected mental health assessment tool was chosen specifically because it is free of charge when completing by paper and online and is easily accessible and reproducible. All costs involved in the development of the project and its materials have been solely incurred by the project lead. Included within the budget would be the cost of the educational intervention training, which would take around thirty minutes. The sustained costs for the program are modest and represented by expenses incurred for the reproduction of the mental health assessment forms and student resources which could realistically be incorporated into existing budgets. Total costs including project manager and training costs and supplies, and resources is \$12943.43 and is presented in Appendix I.

Study of the Interventions

It had already been ascertained from the evidence that behavioral disorders including conduct are not focused upon in educational curriculum for health providers, teachers, or school counselors. This results in providers having a lack of knowledge and confidence pertaining to this area of adolescent mental health. Within the high school it was important to establish what the education need was for the involved stakeholders. There was a large proportion of the student self-referrals to COST stating problems surrounding anxiety. So, the project lead felt it imperative to include anxiety in the toolkit. Also, the resources provided for students do assist in managing anxiety. According to the stakeholders, the state of California does give a lot of training about depression and suicidal risk assessment, so it was felt from stakeholders that this was not necessary. Whilst talking with stakeholders it became evident that a focus on complex trauma could be beneficial for all staff, so therefore this was incorporated within the educational intervention.

The educational intervention included resources that all stakeholders can give to the students. These focus on some of the concepts of DBT. Those resources focus on mindfulness skills, distress tolerance skills, interpersonal effectiveness, and emotional regulation (Rathus et al., 2014). These skills are not only appropriate to adolescents with anxiety but also disruptive/conduct disorders, complex trauma, suicidal ideation, and stress. The resources also are applicable to an adolescent who does not have mental health symptoms, as all need the skills to cope with life's stressors (MacPherson et al. 2013; Marsh and Cox, 2022). Chugani et al. (2021) state that adolescents who live in low-income areas often have a high need for mental health supports due to experiences of poverty and trauma, coupled with limited access and availability of such supports. Within this county, the high school is within a low-income area and

there is a deficit in mental health community resources. Often the adolescents can only receive support services within the school. Chugani et al. (2021) states that offering DBT within the high school is appropriate and teachers can provide this service to students.

There was liaison with one of the psychotherapists at the high school who had previously given education about classroom calmness. Due to there being many new staff, the psychotherapist recommended incorporating this as part of the education for the teachers and school counselors. Also, the coordinator of the COST team recommended incorporating into the education, criteria for referral to COST. There had been many teachers that had questions surrounding what students they should refer, so this was an educational need that was incorporated within the toolkit. The psychotherapist, COST coordinator, principle and assistant principle all examined the PowerPoint presentations that formed the adolescent toolkit and stated that they were in alignment with high school's mission and values. The educational PowerPoint for healthcare providers is displayed in Appendix K and the teachers and school counselors PowerPoint is presented in Appendix L. The DBT resources were incorporated into both PowerPoints and staff who completed the intervention were given pdf files of the student resources and color photocopies of the resources to give to the students.

Outcome Measures and Data Collection Instruments

Both quantitative and qualitative measures were used to assess and quantify outcomes and the efficacy of the intervention. Qualtrics was used to develop the survey tools. Quantitative measures included pre-post assessment scores of both knowledge and confidence. The outcome measures were compared immediately pre and post education implementation. The confidence level was measured with a Likert scale. The survey questions concerning confidence was taken

from research by Baum et al. (2019) in which they measured clinician confidence pre and post implementation of the integration of mental health services into pediatric primary care.

To measure knowledge, the Mental Health Literacy Scales was incorporated with the confidence survey. The Mental Health Literacy Scale is also a Likert scale in which mental health literacy knowledge is measured. The tool has been used to assess mental health literacy of healthcare professionals working within areas of individuals with mental health conditions and has been used to evaluate knowledge when developing new programs or interventions. The Mental Health Literacy Scale was adapted from O'Connor & Casey (2015) and demonstrates good internal and test-retest reliability. Both Likert scales that measured confidence and knowledge had a five-point scale ranging from scores one to five respectively, with strongly disagree, somewhat disagree, neither agree nor disagree, somewhat agree, and strongly agree. The education was evaluated by stakeholders with qualitative data that was ascertained from a Qualtrics evaluation open-ended question incorporated into the post educational assessment.

The questions within the Qualtrics survey for the healthcare providers and teachers and school counselors were the same except for one question within each survey. The Qualtrics survey for healthcare providers had a different question asking about confidence when using a mental health assessment tool. The teachers and school counselors did not have the mental health assessment tool included within their toolkit. The teachers and school counselors also had a different question from the healthcare providers asking about whether they were confident in referring students to COST services. The healthcare providers did not need this question as it was established that this was not an educational need. Both healthcare providers teachers and school counselors received the survey questions: I am aware of resources that I can use when adolescents appear overwhelmed or stressed. Are you confident in your overall knowledge of

adolescent mental health? Are you confident in being able to use resources to help adolescents if they are having psychological distress? The Qualtrics pre survey designed for the healthcare providers is displayed in Appendix M, and the post intervention survey in Appendix N. The Qualtrics pre survey for the teachers and school counselors is displayed in Appendix O, and the post intervention survey in Appendix P.

Analysis

Quantitative data was analyzed using SPSS and the Intellectus statistics program. As the interventions were different for both the healthcare providers and the teachers/school counselors, pre and post testing was separate for the two groups and each survey question was analyzed separately. Demographic nominal data included job title, age range, gender, race, and highest level of staff education. Nominal data was measured with frequency distributions.

The independent variable is the educational PowerPoint/adolescent tool kits. The dependent variable, the pre and post knowledge and confidence levels were analyzed with both parametric (two-tailed dependent, paired *t* test) and non-parametric testing (Wilcoxon signed rank test). An alpha level of less than 0.05 was used to determine statistical significance. The *t* test and Wilcoxon signed rank test was used to establish the difference in knowledge and confidence before and after the educational interventions. A Shapiro-Wilk test was conducted to determine if the data was a normal distribution. A Cohen's *d* was measured to determine effect size. A significant large effect size of around 0.8 was the ideal of the project to demonstrate that the educational intervention has a significant increase in providers knowledge and confidence. A priori power analysis was conducted prior to the intervention to determine what sample size was adequate. With a set effect size of 0.8, alpha level 0.05, power set at 0.8 the total sample size needed in each group is $N = 34$ participants (Universität Düsseldorf: Psychologie, 2023).

Qualitative analysis data was visualized using a word cloud with the most frequent occurring themes.

Ethical Considerations

The project was approved by the University of San Francisco (USF) School of Nursing and Health Professions, Doctor of Nursing Practice program. Within the intervention, the Jesuit core values of USF were adopted by promoting a common good that transcends to the interests of the stakeholders and respects their diversity of perspectives and experiences (USF, 2022). Furthermore, the program is in alignment with the mission of the high school in that they should provide a safe environment that is supportive of all its students (Hayward High School, 2023).

The American Nurses Association (2015) code of ethics was integrated throughout the project by advancing the profession through research and scholarly inquiry, professional standard development, reducing health disparities and demonstrating respect for human rights, including privacy and confidentiality. To maintain privacy and confidentiality all participant data was only coded by number and HIPAA compliance was met throughout the course of the project. Within the first survey that was given to healthcare providers, school counselors and teachers was a description of the quality improvement project and the reassurance that data obtained from the surveys and exam will be kept confidential and documented without personal identifiers. An informed consent was obtained through acceptance of the initial survey.

Results

Demographic data from the healthcare providers and the teachers and school counselors was analyzed with frequency distributions. Within the healthcare provider group there were a total of $N = 10$ participants, seven RN's, one social emotional counselor, one FNP and one therapist who completed the educational intervention and is portrayed in Appendix Q, Figure 1.

There were a total $N = 20$ participants in the other group, 12 teachers, two school counselors, four school counselor interns, one assistant principal and one librarian that completed the other educational intervention and is portrayed in Appendix R, Figure 1. The most frequent age range within the healthcare providers group was 45-54 years of age, as shown in Appendix Q, Figure 2. The teacher and school counselor group most frequent age range were 35-44 years of age, as shown in Appendix R, Figure 2. With health care providers nine out of ten were female, as demonstrated in Appendix Q, Figure 3. Also, with the teacher and school counselors 16 out of 20 participants were female, as demonstrated in Appendix R, Figure 3. Healthcare providers most commonly occurring race was white, as demonstrated in Appendix Q, Figure 4, and the same with the teachers and school counselors, as demonstrated in Appendix R, Figure 4. Finally, most healthcare providers had a graduate level of education, as demonstrated in Appendix Q, Figure 5, and teachers and school counselors most common educational level were also graduate, as demonstrated in Appendix R, Figure 5.

The projects aim was achieved in that both educational interventions for the healthcare providers and the teachers and school counselors resulted in over a 20% increase in knowledge and confidence after the educational intervention. Healthcare providers learning gain ranged between 67% to 100%, as portrayed in Appendix S. Teachers and school counselors learning gain ranged between 46% to 83%, as portrayed in Appendix T.

A two-tailed dependent paired t test with an alpha level of .05 was conducted on all the questions from both groups and all questions found that there was a significant difference in both means. However, the Shapiro-Wilk test showed for all questions in both groups (except for question eight in the healthcare providers group, which asked if participants were confident in their overall knowledge of adolescent mental health) that there was a violation of the normality

assumption. Therefore, a non-parametric two-tailed Wilcoxon signed rank test, which does not have a requirement of meeting a normal distribution, was completed for all the other questions at an alpha level of .05 and all resulted in significance, indicating that the differences in means are not likely due to random variation.

As two-tailed dependent paired testing was performed, there was data visualization to ensure that the pre intervention mean scores were always less than the post intervention mean scores. The biggest mean difference in pre and post intervention scores for the healthcare providers was 3.2, indicating they were more confident in using an adolescent mental health assessment tool. The smallest mean difference in pre and post means was 1.6 in which healthcare providers were asked about their confidence in overall knowledge of adolescent mental health. The biggest mean difference in pre and post intervention scores for the other group, teachers and school counselors was a mean of 1.4 indicating that they were more confident about which students to refer for COST services. The smallest mean difference in pre and post means was 1.1, in which teachers and school counselors were asked about their confidence in overall knowledge of adolescent mental health, this was also the smallest mean difference for healthcare providers.

The lowest Cohen's d which measured effect size with both groups was 1.14 and the highest was 2.82. SPSS standardized Cohens d , which also measured effect size but gave the lowest standardized Cohen's d as .67082 and the highest as 1.135. The statistical analysis of the healthcare provider group is presented in Appendix U in tables one through seven. The statistical analysis of the other group, the teachers and school counselors are presented within Appendix V in tables one through eight.

The evaluation of the educational intervention was completed, and participants were asked to state words that described the intervention. The qualitative data was manually

transcribed and evaluated for frequencies of words with a visual representation through a word cloud for each group. Within the healthcare provider responses, the words confidence, helpful, love, interesting and learning were identified twice and the other words once, this is portrayed within Appendix W. Within the teachers and school counselor's responses, the word confidence was mentioned three times and all the other words mentioned once, this is portrayed within Appendix X.

Discussion

Summary

Guided by the Conceptual Model of Nursing and Population Health (Fawcett and Ellenbecker, 2015) the findings of the educational intervention have demonstrated improvements with healthcare providers knowledge and confidence surrounding adolescent mental health, the use of a validated adolescent mental health tool and increased confidence to use DBT skills and resources with students at the high school. The other educational intervention for teachers and school counselors also increased knowledge and confidence surrounding adolescent mental health and increased confidence to use DBT skills and resources with students in the high school. Also, there was increased knowledge and confidence of techniques that can assist in creating calmness in the classroom.

There were multiple methods of data analysis used including frequency distributions for nominal demographic information and use of a priori power analysis prior to the educational intervention to establish needed sample size. Also, there was use of a Shapiro-Wilk test to determine if data was within a normal distribution and when some of the data violated this assumption for use with parametric t testing then the non-parametric Wilcoxon signed rank test was used to see if there was still significance in the data that had been previously shown in the t

test, which there was. A Cohen d test was used to assess effect size. However, after the data analysis there were some methodology concerns specifically related to sample size and parametric testing, which will be discussed within the next section.

Interpretation

The priori power analysis identified that 34 participants were needed for each group. Both the healthcare providers group ($N = 10$) and the teachers and school counselors' group ($N = 20$) sample number were not achieved. There were only ten available participants screened within the healthcare providers group because that is the total availability of the healthcare providers at the high school. The lack of sample size with the teachers and school counselors was due to time constraints of staff not being able to complete the educational intervention.

Not managing to reach the sample size indicated by the priori power analysis could cause data to not be of a normal distribution. The use of the Shapiro-Wilk test showed a violation in normal distribution for all but one of the scores, then addition non-parametric testing with the Wilcoxon signed rank was completed to test if mean differences in pre and post educational intervention scores were all still significant. A two-tailed t test and two-tailed Wilcoxon signed rank test was used instead of a one-tailed to reduce the incidence of a type II error.

All Cohen d effect sizes for the t test were over 0.8, which indicates a large effect size. However, the Cohens d test effect size could have been affected due to the lack of the assumption of a normal distribution, so those results should be met with caution. An alpha level of probability was set at 0.05, this does increase power but in turn increases the risk of a type I error. A lower probability level could have been used, however the biggest concern with the data analysis was the inadequate sample size. There is also a debate as to whether Likert scales are

ever normally distributed, with no clear consensus, so the use of using both parametric, nonparametric and percentage learning gain testing seems appropriate.

Limitations

The barriers that the project leader faced when implementing the innovation were time restriction and resistance to change and new learning. When assessing the educational needs for the adolescent mental health toolkit the project lead did receive some resistance to change. The introduction of the school counselors being able to use the PSC mental health assessment tool was met with a lot of resistance. The PSC is not diagnostic, however was viewed as such. After giving information about the PSC, it was still deemed not to be appropriate for the school counselors to implement. Goodcase et al. (2022) study, also based within an urban city school, found that school counselor to student ratios is very high and this impacts time resources and was also a contributing factor. The PSC is already endorsed by Medicaid in California for use by mental health providers with any Medicaid patients. So, the school counselors had only seen its use by mental health providers, so this reinforced that only specific health care providers can implement the assessment and that it is diagnostic.

Another limitation was that the education could not be made mandatory as this was not endorsed by the California State Board of Education, plus all education must be agreed upon by the staff unions. Therefore, leaders at the school advised to ask staff if they would want to participate in the intervention, which consequently reduced the possible sample size that could have been achieved. Consequently, this would reduce sample size which led to data analysis conclusions being met with caution and resulted in a decreased amount of DBT resources that would reach the students.

Conclusions

Adolescent mental health disorders can impact children for the rest of their lives and has a high societal and economic burden (Fairchild et al., 2019). Healthcare providers, school counselors and teachers are often the professionals that see the child and have interactions with the family at a consistent level while the child attends high school. Therefore, staff can form a trusting relationship with both child and family and are key to not only following the child's academic and physical development, but also that child's mental health. Through the literature review it became evident that a lack of education and confidence about most adolescent mental health conditions is lacking within these settings (Balestra, 2019; Baum et al., 2019; Lempp et al., 2016). It is evident from the literature review that early identification and assessment of children with these disorders is imperative to improve outcomes and prevent future lifelong sequela.

An educational intervention in the school setting for healthcare providers, school counselors and teachers and the integration of the PSC (Massachusetts General Hospital, 2018) into practice for health providers does assist in identifying adolescents at risk of mental health conditions. Early identification and intervention have been shown to improve outcomes and will reduce overall societal economic burden (Frick, 2016). The results of this project show that staff education within the high school that centers around adolescent mental health conditions, and the implementation of skills and resources, increases staff knowledge and confidence. Therefore, resulting in better outcomes for adolescents within a high school setting. The project emphasizes that mental health education within schools should be based upon the education need of the various professional disciplines and is this project is generalizable to the urban, inner-city schools within California.

Funding

The project and project lead did not obtain any funding from grants in public, commercial or non-profit divisions. The project costs for materials were fulfilled by the project lead. Future material costs in the form of photocopies of the resources for the students will be fulfilled by the staff and the high school.

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Appendix A

Evidence Evaluation Table

Citation	Design Method	Sample & Variables Studied	Measurements & Data Analysis	Findings	Appraisal Worth to Practice
<p>Bakker, M., Greven, C., Buitelaar, J., & Glennon, J. (2017). Practitioner review: Psychological treatments for children and adolescents with conduct disorder problems - a systematic review and meta-analysis. <i>Journal of Child Psychology and Psychiatry</i>, 58(1) 4–18.</p>	<p>Meta-analysis. No evident conceptual framework. Control group (placebo, waiting list, no treatment).</p>	<p>17 RCT studies fit inclusion/exclusion criteria. N = 1999. Sample was throughout different settings in the world. Independent Variable: Younger than age 18 years with CD diagnosis. One quantitative CD problem outcome reported. RCT of non-pharmaceutical intervention. Dependent Variable: Psychological treatments.</p>	<p>Controlled trial quality measured by standard definition for randomization & Treatment efficacy measured by effect size. PRISMA used for article selection. Treatment efficacy measured by effect size.</p>	<p>Findings support use of psychological treatments for CD. Lack of evidence about what the best treatment is. Treatment more effective in children under 10 years of age. ADHD was the biggest co-morbidity. Lack of effect size with most studies.</p>	<p>Level I B Good Quality. Is feasible and generalizable as studies are taken from across the world. Strengths: Inclusion, exclusion criteria outlined. Flow diagram outlining studies is present. Results and conclusions are clearly outlined. Weaknesses: Independent and dependent variable not mentioned. Conclusions and recommendations: Future studies need to address CD onset, callous-unemotional traits and subtype and severity of aggression. More research is needed comparing specific interventions.</p>

Citation	Design Method	Sample & Variables Studied	Measurements & Data Analysis	Findings	Appraisal Worth to Practice
<p>Baum, R. A., King, M. A., & Wissow, L. S. (2019). Outcomes of a statewide learning collaborative to implement mental health services in pediatric primary care. <i>Psychiatric Services, 70</i> (2), p 123–129.</p>	<p>Quantitative, quasi-experimental, one group pretest-posttest design. No conceptual framework evident.</p>	<p>Quality improvement program of onsite training within 29 primary care practices over 18 months in Ohio, USA. Independent Variables: Educational intervention and on-site trainings. Dependent Variables: Clinical Confidence.</p>	<p>Clinical confidence was measured throughout the intervention on a Likert scale survey given to providers. A total confidence score was measured over time using a linear regression model. A Pearson correlation coefficient was used to assess the relationship between change in clinical confidence</p>	<p>Clinical confidence increased over the course of the on-site trainings by an average of 20 percent. There is a positive correlation between intervention uptake and change in practice-mean clinical confidence from baseline to post-intervention.</p>	<p>Level II, B Good Quality. Study showed that clinicians have a lack of knowledge and confidence when treating pediatric mental health conditions in primary care. Strengths: Clinical confidence scale was designed and validated by within the clinics there. Feasible to replicate. Weaknesses: The researchers recognize their limitations. Study design was quasi-experimental as they were unable to use random assignment. Also, they were unable to validate the accuracy of diagnoses and the quality of prescribing practices.</p>

Citation	Design Method	Sample	Variables Studied	Measurements & Data Analysis	Findings	Appraisal Worth to Practice
Bevilacqua, L., Hale, D., Barker, E. D., & Viner, R. (2017). Conduct problems trajectories and psychosocial outcomes: A systematic review and meta-analysis. <i>European Child & Adolescent Psychiatry</i> , 27(10), 1239–1260.	Quantitative, systematic review and meta-analysis of longitudinal studies. No conceptual framework evident.	13 studies, containing total N = 10,663 in USA, UK, Australia, New Zealand, and Belgium.	Independent Variables: Early onset persistent CD. Adolescent onset CD. Childhood limited CD. Low CD problems. Dependent Variables: Mental health (depression), cannabis use, alcohol use, self-reported aggression, official records of antisocial behavior, poor general health, poor education, and poor employment	Teacher Report Form. Child Behavior Checklist (self-report). Young Adult Health Survey. Clinical Interview Scale (depression). Diagnostic Interview Schedule. WHO Sexually Informed Rutter Child Scale (antisocial behavior). Strengths and Difficulties Questionnaire (mother reported). PRISMA used for article selection. STATA 13 used to compute pooled effect size and Confidence Intervals. Random effects model.	Early onset participants showed significantly higher risk of poor outcomes followed by adolescent onset, childhood-limited onset and then participants in low group. Early onset participants also show highest risk of poor psychological outcomes.	Level III, B Good Quality. Identifying children at higher risk of poor psychological outcomes, will guide prevention and intervention programs more effectively. Replicable study, so feasible. Strengths: Effect sizes were calculated, and inclusion/exclusion criteria outlined with flow diagram. Dependent variables were clearly outlined. Results, conclusions, and limitations were discussed thoroughly. Weaknesses: Only focused on depression as dependent variable, not other co-morbidities. Only used two databases in search. Independent variables were not clearly identified. Level and quality of evidence of each study was not examined. concentrate on longitudinal data

Citation	Design Method	Sample	Variables Studied	Measurements & Data Analysis	Findings	Appraisal Worth to Practice
<p>Border, R., Corley, R. P., Brown, S. A., Hewitt, J. K., Hopfer, C. J., McWilliams, S. K., Rhea, S. A., Shriver, C. L., Stallings, M. C., Wall, T. L., Woodward, K. E., & Rhee, S. H. (2018). Independent predictors of mortality in adolescents ascertained for conduct disorder and substance use problems, their siblings and community controls. <i>Addiction</i>, 113(11), 2107–2115</p>	<p>Prospective, longitudinal, cohort design. Mortality Analysis. No conceptual framework evident.</p>	<p>N = 3766 Adolescents had conduct disorder 1463, their siblings 1399 and 904 controls from community. Adolescents with conduct disorder were ascertained through court records, juvenile correctional system, and substance abuse treatment programs. In San Diego, California and Denver, Colorado. USA.</p>	<p>Composite International Diagnostic Interview-Substance Abuse Module. Diagnostic Interview Schedule for Children (CD symptoms). National Death Index</p>	<p>Univariate frailty models and multivariate frailty models. $P < .005$ used to determine significance</p>	<p>Mortality hazard for adolescents who had conduct disorder and their siblings was 4.9 times higher than controls (hazard ratio 1.18, $p < .001$). Adolescents and their siblings with conduct disorder have a greater risk of premature death than community controls. Adolescents with CD had higher mortality risk than siblings, but siblings much higher than controls.</p>	<p>Level II, A High Quality. The child with CD & their siblings has increased premature mortality. All children in the family should be monitored for CD and early identification. The study is feasible. Strengths: Longitudinal design. The research purpose and sample size appropriate. Data collection methods were discussed, results thorough with appropriate tables used, and limitations identified and conclusions rational. Weaknesses: No manipulation of independent variables and no random assignment. Some demographic data was missing from National Death Index. Recommendations: Children with CD at risk for premature death, there is a critical need for more resources.</p>

Citation	Design Method	Sample	Variables Studied	Measurements & Data Analysis	Findings	Appraisal Worth to Practice
<p>Donohue, P., Goodman-Scott, E., & Jennifer, B. (2015). Using universal screening for early identification of students at risk: A case example from the field. <i>Professional School Counseling</i>.</p>	<p>Two-year pilot study. Quality improvement project. School psychologists evaluated mental health assessment tools then choose the paper and pencil version of the BASC-2 BESS administered students. Then at-risk students received individualized and group psychotherapy.</p>	<p>N = 944 students in years 4th to 10th grade in New England, USA.</p>	<p>Basc-2 BESS scores were used.</p>	<p>The BASC-2 BESS scores were analyzed with <i>t</i> scores. Scores below 60 indicated students exceeded the expectations for school functioning, scores between 61 and 70 indicated student elevated risk, and scores of 71 or higher indicated elevated risk.</p>	<p>Found issues with the assessment tool and students' comprehension of this. The identification of students in need of support lead to early intervention and a greater likelihood of positive student outcomes. Data input was time consuming.</p>	<p>Level III, B Good Quality. Strengths: Aim, method, outcome measures and results clearly outlined. Weaknesses: Cost/benefit analysis not discussed. Worth to practice shows importance of collaboration and use of a mental health assessment tool within a school setting.</p>

Citation	Design Method	Sample	Variables Studied	Measurements & Data Analysis	Findings	Appraisal Worth to Practice
<p>Foy, J. M., Green, C. M., & Earls, M. F. (2019). Mental health competencies for pediatric practice. <i>Pediatrics</i>, 144(5), e20192757. American Academy of Pediatrics</p>	<p>Systematic review and synthesis of evidence-based research. Expert opinion. No conceptual framework evident.</p>	<p>Not directly applicable as a policy statement but focuses on expert opinion and evidence-based research on pediatric mental health conditions seen in pediatric primary care.</p>	<p>Not applicable as a policy statement.</p>	<p>Expert opinion and even though a synthesis of the evidence, no data analysis mentioned.</p>	<p>Increases in childhood mental health morbidity and mortality increases urgency for the need to improve training and competence of PCP. Pediatric mental health is a national priority of the American Board of Pediatrics. Gives evidence-based behavioral recommendations for children with disruptive and aggression problems and examples of brief interventions to use in primary care. Outline's competencies that PCP can analyze and interpret results from mental health screening and if higher level of care is needed criteria outlined in an algorithm and competencies to collaborate with specialized mental health providers.</p>	<p>Level IV, A High Quality. Policy statement provides an algorithm for integrating pediatric mental health into primary care and has competencies which are applicable for providers to guide clinical decision making in children with CD. Competencies also establish scope of practice for all primary care providers. Also, has resources and links to tool kits which can be utilized for children with CD. Strengths: Is evidence based and the policy statement and competencies are generalizable within the USA. Material is sponsored by a professional regulatory body and evidence-based research details are given in the report. Revised in the past five years. Stakeholders are listed with roles and responsibilities throughout guideline. Limitations: Individual studies presented does not have a stated level or strength of evidence.</p>

Citation	Design Method	Sample	Variables Studied	Measurements & Data Analysis	Findings	Appraisal Worth to Practice
Hanisch, C., Eichelberger, I., Richard, S., & Doepfner, M. (2020). Effects of a Modular Teacher Coaching Program on Child Attention Problems and Disruptive Behavior and on Teachers' Self-Efficacy and Stress. <i>School Psychology International</i> , 41(6), 543–568.	Pilot study: A within subject control group design. Within 15 elementary schools in Germany. One day training for teachers which includes knowledge on a school-based program externalizing behavior problems (SCEP). Then the teacher will pick a target child and use functional behavioral analysis using "SMART" goals with coaches who were child psychotherapists. Plan, adapt, and design interventions together. There were three tiers of interventions based on the severity of disruption of the child.	N = 60 target children, who had received a diagnosis of ADHD, CD or ODD.	Independent Variable: SCEP training. Dependent Variables: Primary outcome measures are attention issues and rule breaking behavior measured by the SKAMP-ge. Secondary outcome variables are the problem checklist for ADHD & ODD. Teacher behavior: The teacher strategies questionnaire. Problem behaviors rated on scale of 1-6 (low to high intensity). Teacher, stress: The depression subscale of depression anxiety stress scales. Teacher self-efficacy: Assesses teachers' personal convictions regarding ability to manage professional challenge	Descriptive statistics. Data analyzed using multilevel modeling and effect sizes. Data analyzed using multilevel modeling and effect sizes. Completed a power analysis.	SCEP reduced problem behavior in lessons significantly and attention was significantly increased. Teachers significantly changed their teaching styles.	Level III, B Good Quality. Strengths: There is a manual of SCEP that can be applied in practice. Weaknesses: The program is very labor intensive and at the beginning the teacher is only working with one student at a time. Need for more controls within the study to limit teacher bias and increase randomized selection. Teachers worked with clinical psychologists intensively and would these effects last when the teachers did not have one on one guidance. Sample too small to evaluate effect sizes as outcomes.

Citation	Design Method	Sample	Variables Studied	Measurements & Data Analysis	Findings	Appraisal Worth to Practice
Lempp, T., Heinzl-Gutenbrunner, M., & Bachmann, C. (2016). Child and adolescent psychiatry: Which knowledge and skills do primary care physicians need to have. A survey in general practitioners and paediatricians. <i>European Child & Adolescent Psychiatry</i> , 25(4) 443–451.	Delphi approach self-report questionnaire and interviews. PCP and pediatricians had to rate 17 CAP related knowledge and 13 CAP related skills by importance in daily practice.	PCP N = 241 and pediatricians N = 194. Total N = 435 In Germany.	Independent variables: CAP related knowledge and skills. Dependent variables: Survey responses	CAP related knowledge and skills were taken from standard CAP textbooks and research literature. Mann-Whitney test, Kruskal-Wallis test, Wilcoxon test and Spearman Correlation to evaluate the association between CAP exposure and perceived importance of skills and knowledge.	Both pediatricians and PCP ranked CD out of 5 (very important) as rank 4 for knowledge need. Out of the 17 CAP related knowledge, physicians ranked CD 8 th rank of importance and pediatricians ranked CD as of 5 th importance	Level II B Good Quality. Method is feasible, and potentially generalizable. Strengths: Ascertained what PCP and pediatricians need to know within current practice. High return rate of surveys. Weaknesses: Lack of randomization and random assignment of surveys. Lack of validated knowledge base competencies used. Potential biased need of providers and not objective daily practice requirements. Worth to Practice: Give's guidance on needed education for medical school curriculum.

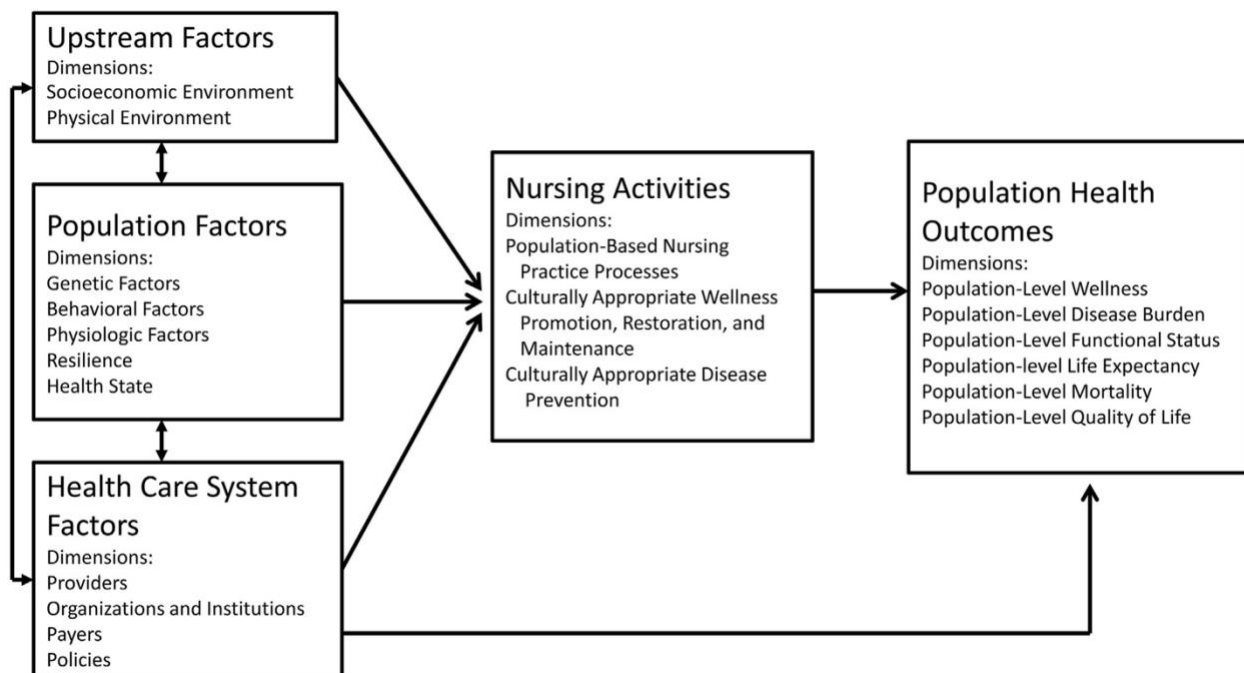
Citation	Design Method	Sample	Variables Studied	Measurements & Data Analysis	Findings	Appraisal Worth to Practice
<p>National Institute for Health and Care Excellence. (2017, April). <i>Antisocial behaviour and conduct disorders in children and young people: Recognition and management</i> (No. CG158).</p>	<p>Systematic review and synthesis of evidence-based research. Expert opinion. No conceptual framework evident.</p>	<p>Not a research study but audience is children with CD and those in contact with the Criminal Justice System within the UK.</p>	<p>Not applicable as a Clinical Guideline.</p>	<p>Expert opinion and synthesis of studies so no direct data analysis used.</p>	<p>Assess for other potential co-morbidities that occur with CD: ADHD, substance misuse, depression & PTSD. Initial assessment: SDQ. Complete comprehensive assessment and care plan. Parent training programs. Offer group social and cognitive problem-solving and multimodal programs to children. Offer Methylphenidate or Atomoxetine for management of ADHD in children with CD. Providers to be aware of diagnostic bias and potential stigma due to diagnosis.</p>	<p>Level IV, A High Quality. Gives providers from all disciplines a consistent, evidence-based approach. Feasibility appropriate and could be applied to other countries. Strengths: Evidence is vast, up to date and included in separate documents. Revised within the past five years. Stakeholders are listed with roles and responsibilities throughout guideline. Researcher's mention that the SDQ assessment tool internal reliability. Weaknesses: Individual studies presented does not have a stated level or strength of evidence.</p>

Citation	Design Method	Sample	Variables Studied	Measurements & Data Analysis	Findings	Appraisal Worth to Practice
Patel, R., Amaravadi, N., Bhullar, H., Lekireddy, J., & Win, H. (2018). Understanding the demographic predictors and associated comorbidities in children hospitalized with conduct disorder. <i>Behavioral Sciences</i> , 8(9) 80	The quantitative study is a retrospective analysis. No conceptual framework mentioned.	Nationwide inpatient sample, total N = 442,824 children under 18 years old with CD (n = 32,345) and a comparison group of children with another psychiatric diagnosis (n = 410,479) who had been hospitalizedn the USA.	Independent Variables: Primary diagnosis of CD. Primary diagnosis of other psychiatric conditions. Dependent Variables: Demographic Predictors: Age, gender, race, median household income. Co-morbidities: Alcohol abuse, drug abuse, psychosis, and depression.	Nationwide Inpatient Sample. International Classification of Diseases Diagnosis Codes (ninth revision). Logistic Regression Model used to generate odds ratios between both groups.	African Americans under 11 years of age are at highest risk for inpatient admission. Higher risk of psychosis and depression. It is also found that children with CD in low-income families have a 1.5 times higher risk of inpatient admission than high income families. Discusses diagnostic bias.	Level II B Good Quality. Alert's providers of the existence of health disparities and co-morbidities. Research can be replicated so feasible. Strengths: Knowledge and knowledge gaps are identified and there was a control group which was in the same setting. Variables outlined clearly. Sample size is adequate although no power analysis is mentioned. Results and conclusions are discussed and presented clearly. Weaknesses: Instrument reliability and validity not mentioned. In the literature review, many studies over ten years old. Readmission numbers not included in the sample. Diagnostic bias potential as results based on clinical diagnostic coding.

Definition of abbreviations for tables: Adolescent Limited (AL). Attention Deficit Hyperactivity Disorder (ADHD). Composite International Diagnostic Interview (CIDI). Conduct Disorder (CD). Continuous Medical Education (CAP). Life Course Persistent (LCP). Oppositional Defiant Disorder (ODD). Post-traumatic stress disorder (PTSD). SDQ (Strengths and Difficulties Questionnaire). Randomized Clinical Trial (RCT). United Kingdom (UK). United States of America (USA).


Appendix B

Fawcett and Ellenbecker's Conceptual Model of Nursing and Population Health (2015)



Appendix C


Support from Agency



Miller, Waylon
to me ▾

I fully support Chantel Kilford working with HHS staff to complete her Doctor of nursing project here at HHS.

Waylon Miller
Principal
Hayward High School
510-723-3170 x61102
Haywardhigh.net



"To touch the hearts of students is the greatest miracle you can perform"- St. Jean Baptiste de La salle"

Appendix D

Pediatric Symptom Checklist (PSC-Y Youth Self Report)

Please mark under the heading that best fits you:

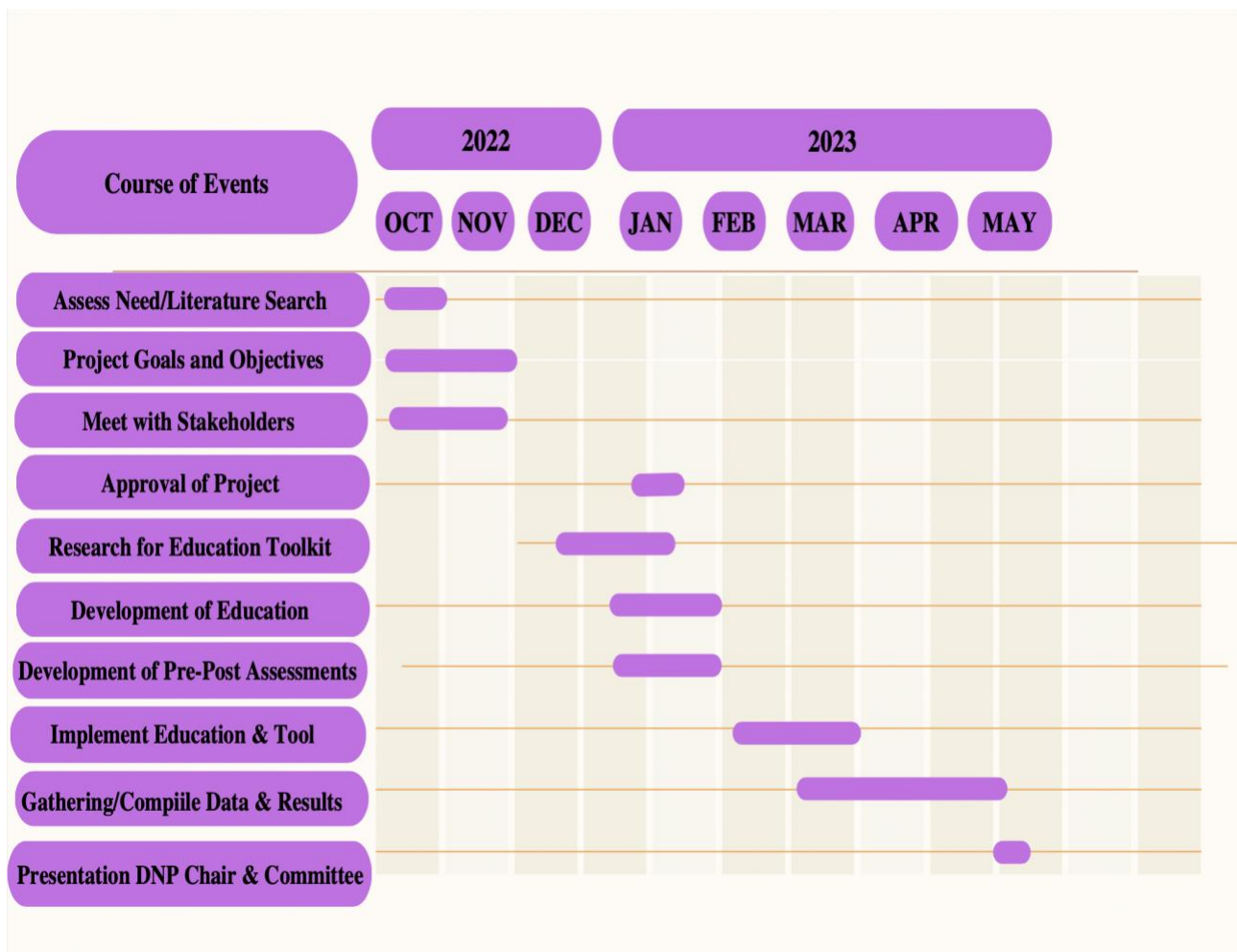
	Never	Sometimes	Often
1. Complain of aches or pains.....	—	—	—
2. Spend more time alone.....	—	—	—
3. Tire easily, little energy.....	—	—	—
4. Fidgety, unable to sit still.....	—	—	—
5. Have trouble with teacher.....	—	—	—
6. Less interested in school.....	—	—	—
7. Act as if driven by motor.....	—	—	—
8. Daydream too much.....	—	—	—
9. Distract easily.....	—	—	—
10. Are afraid of new situations.....	—	—	—
11. Feel sad, unhappy.....	—	—	—
12. Are irritable, angry.....	—	—	—
13. Feel hopeless.....	—	—	—
14. Have trouble concentrating.....	—	—	—
15. Less interested in friends.....	—	—	—
16. Fight with other children.....	—	—	—
17. Absent from school.....	—	—	—
18. School grades dropping.....	—	—	—
19. Down on yourself.....	—	—	—
20. Visit doctor with doctor finding nothing wrong.....	—	—	—
21. Have trouble sleeping.....	—	—	—
22. Worry a lot.....	—	—	—
23. Want to be with parent more than before.....	—	—	—
24. Feel that you are bad.....	—	—	—
25. Take unnecessary risks.....	—	—	—
26. Get hurt frequently.....	—	—	—
27. Seem to be having less fun.....	—	—	—
28. Act younger than children your age.....	—	—	—
29. Do not listen to rules.....	—	—	—
30. Do not show feelings.....	—	—	—
31. Do not understand other people's feelings.....	—	—	—
32. Tease others.....	—	—	—
33. Blame others for your troubles.....	—	—	—
34. Take things that do not belong to you.....	—	—	—
35. Refuse to share.....	—	—	—

Appendix E

Gap Analysis

Best Practice	Best Practice Strategies	How Site Practices Differ from Best Practices	Barriers to Best Practice Implementation
<p>Childhood mental health assessment tool</p> <p>Integration of mental health care into healthcare and classroom workflow</p>	<p>Collaboration between healthcare staff, school counselors, teachers & mental health providers</p> <p>Standardized mental health assessment tool</p>	<p>Absence of assessment tool used by stakeholders.</p> <p>Siloed stakeholder activities</p>	<p>Perceived lack of time resources.</p> <p>Lack of knowledge and confidence</p> <p>Historical lack of teachers focused upon childhood mental health & collaboration and is a new way to practice within school system</p>

Appendix F Gantt Chart



Appendix G

Work Breakdown Structure

1. Healthcare Staff, School Counselors and Teachers Based Educational Intervention and Integration of Mental Health Assessment Tool: Improving Outcomes Through Increasing Knowledge and Confidence of Behavioral Disorders in Children.

1.1 Project Initiation

- 1.1.1 DNP committee approval of project.
- 1.1.2 Establish stakeholder buy-in from healthcare staff and Teachers.
- 1.1.3 Organizational support letter from identified project site.
- 1.1.4 Create and share project timeline with stakeholders.

1.2. Project Planning

- 1.2.1 Perform needs assessment.
 - 1.2.1.1 Conduct informational interviews.
 - 1.2.1.2 Create Gap, SWOT analyses.
 - 1.2.1.3 Formulate Aim Statement.
 - 1.2.1.4 Formulate GANTT chart.

- 1.2.2 Identify theoretical frameworks.
- 1.2.3 Identify measurable objectives.
- 1.2.4 Define budget items.

1.3. Project Development/Execution

- 1.3.1 Create educational intervention toolkits.
 - 1.3.1.1 Select mental health screening tool determined by best practice.
 - 1.3.1.2 Design educational interventions about adolescent mental health.
 - 1.3.1.3 Design qualitative questions on thoughts of use of mental health assessment tool and educational interventions.
- 1.3.2. Create measurement tools: pre-and post-education, knowledge, and confidence level Likert scale.
- 1.3.3 Identify if mental health assessment tool will be used on hand-held device or pen and paper.

1.4. Project Implementation

1.4.1 Deliver pre-intervention knowledge and confidence Likert scales directly before educational PowerPoint presentation.

1.4.2 Administer educational PowerPoint and introduce mental health assessment tool.

1.4.3 Conduct post-intervention knowledge and confidence Likert scales directly after educational PowerPoint presentation. With qualitative question about educational intervention.

1.4.4 Meet healthcare staff and teachers within one week following intervention to establish if any questions about implementing mental health assessment tool and resources.

1.5. Data Analysis

1.5.1 Using SPSS analyze confidence level Likert scales pre-post intervention.

1.5.2 Using manual transcription and evaluation, determine key themes in post-intervention qualitative responses.

1.6. Project Close Out

1.6.1 Present findings to site-specific and district stakeholders.

1.6.2 Make recommendations for future applications.

1.6.3 Present to DNP Chair and Committee.

Appendix H
Communication Matrix

Contact Person	Frequency	Communication Method
DNP Chair Dr. Trinetta Radasa	As needed	Phone, email, Zoom meetings
DNP Committee Members	As needed	Phone, email
Site Advisors	Once a week	Phone, email, text, face to face meetings
Participants	As needed	Phone, email, face to face meetings

Appendix I

Strengths, Weaknesses, Opportunities and Threats Analysis of Educational Intervention

Strengths (+)	Weaknesses (-)
<p>Strong evidence to suggest that healthcare staff, school counselors and teachers have a lack of knowledge and confidence identifying and managing disruptive disorders in children.</p> <p>Primary and secondary prevention increases lifelong outcomes of children with these disruptive disorders and associated comorbidities.</p> <p>The mental health assessment tool is free, has good reliability and validity and is endorsed by the National Quality Forum.</p>	<p>Potential for the non-compliance and non-acceptance of mental health assessment tool.</p> <p>Due to constraints with unions, staff cannot be mandated to complete this training.</p>
Opportunities (+)	Threats (-)
<p>Create a culture of primary and secondary prevention on a district wide scale.</p> <p>Address pediatric mental health competencies within school setting.</p> <p>Encourage a team approach and collaboration with mental health services.</p>	<p>Healthcare staff, school counselors and teacher workflow too busy to implement mental health assessment tool into practice.</p>

Appendix J

Budget and Financial Analysis

Budget Item	Description	Estimated Cost
Project Manager, Staff & Training Expenses		
RN Salary in project planning	\$84.00 x 135 hours	\$11340.00
Travel time	Mileage at \$0.625/mile (16 trips at 50 miles round trip)	\$500.00
Educational Intervention for FNP	\$100.00 x 30 minutes Total Providers 1	\$50.00
Educational Intervention for Assistant Principal, Teachers, School Counselors & Librarian	\$50.00 x 30 minutes Total providers 19	\$475.00
Educational Intervention for other Health Care Providers	\$84.00 x 30 minutes Total Providers 9	\$378.00
Supplies and Resources		
Pediatric Symptom Checklist	Free unlimited use on paper and electronically.	\$0
Office Supplies	Paper, binder, printer ink and sheet protectors	\$200
		Total = \$12943.43

Cost Avoidance Analysis

Calculated Funding per Student Day

Annual expenditure cost per average daily attendance (ANA)	\$15,465.33
Divided by Number of School Days	180
Cost per Student/Day	\$85.92

Calculated Daily Loss of Funding Amount Due to Chronic Absenteeism (California)

Project School Site Total Enrollment	1632 students
2020/2021 Chronic Absenteeism Rate (14.7%)	240 students
Percentage Reasonably Attributable to Mental Health (MH) 17%	48 students
Multiplied by Cost per Student/Day	\$85.92
Daily Loss of Funding d/t MH	\$4124,16
Annual Loss of Funding d/t MH (based on school year 180 days)	\$74,234,880

Data from the California Department of Education (2022) and Education Data Partnership (2022).

Appendix K

Educational PowerPoint for Health Care Providers



Adolescent Mental Health Educational Toolkit

By Chantel Kilford, MSN, APRN, FNP-C, BSc, RN



Please complete the Pre-Survey
This will take around 2 minutes
Thank-you



https://usfca.qualtrics.com/jfe/form/SV_d4k4aSuP1QdpRWe

Childhood Mental Health Issues

In the USA:

- Behavioral & conduct problems of children aged three to 17 years of age is 6.9% & is the 6th highest childhood prevalent health condition
- These includes attention deficit hyperactivity disorder, oppositional defiant disorder and conduct disorder



Anxiety is the most prevalent childhood mental health disorder

In California 17% of adolescents between 12-17 years old have a serious mental illness

In San Francisco Bay area 7.1% of children have a serious emotional disturbance

General Mental Health Assessment Pediatric Symptom Checklist

The self report questionnaire is for adolescents aged 11-18. Parents can also complete for children aged 3-18

Not diagnostic, but gives a risk of conditions such as anxiety, depression, lack of attention & disruptive/conduct disorders

Thirty-five questions & available in over 31 different languages

Used in the USA within school system & primary care offices

Massachusetts General Hospital. (2018)

Pediatric Symptom Checklist - Youth Report (Y-PSC)

Please mark under the heading that best fits you:

	Never	Sometimes	Often
1. Complain of aches or pains.....	___	___	___
2. Spend more time alone.....	___	___	___
3. Tires easily, little energy.....	___	___	___
4. Fidgety, unable to sit still.....	___	___	___
5. Have trouble with teacher.....	___	___	___
6. Less interested in school.....	___	___	___
7. Act as if driven by motor.....	___	___	___
8. Daydream too much.....	___	___	___
9. Distract easily.....	___	___	___
10. Are afraid of new situations.....	___	___	___
11. Feel sad, unhappy.....	___	___	___
12. Are irritable, angry.....	___	___	___
13. Feel hopeless.....	___	___	___
14. Have trouble concentrating.....	___	___	___
15. Less interested in friends.....	___	___	___
16. Fight with other children.....	___	___	___
17. Absent from school.....	___	___	___
18. School grades dropping.....	___	___	___
19. Down on yourself.....	___	___	___
20. Visit doctor with doctor finding nothing wrong.....	___	___	___
21. Have trouble sleeping.....	___	___	___
22. Worry a lot.....	___	___	___
23. Want to be with parent more than before.....	___	___	___
24. Feel that you are bad.....	___	___	___
25. Take unnecessary risks.....	___	___	___
26. Get hurt frequently.....	___	___	___
27. Seem to be having less fun.....	___	___	___
28. Act younger than children your age.....	___	___	___
29. Do not listen to rules.....	___	___	___
30. Do not show feelings.....	___	___	___
31. Do not understand other people's feelings.....	___	___	___
32. Tease others.....	___	___	___
33. Blame others for your troubles.....	___	___	___
34. Take things that do not belong to you.....	___	___	___
35. Refuse to share.....	___	___	___

General Mental Health Assessment Pediatric Symptom Checklist

Test/retest reliability ranges from .84 to .91 & over case/not case classification ranges from 83% to 87% & kappa = .84, internal consistency Cronbach alpha = .91

Link to access more info about the tool and obtain in different languages

<https://www.massgeneral.org/psychiatry/treatments-and-services/pediatric-symptom-checklist>

Mental Health America Website to complete the assessment tool

For self survey child over 11
<https://screening.mhanational.org/screening-tools/youth/>

For parents
<https://screening.mhanational.org/screening-tools/parent/>

Child's Name _____ Record Number _____
Today's Date _____ Filled out by _____
Date of Birth _____

Pediatric Symptom Checklist

Emotional and physical health go together in children. Because parents are often the first to notice a problem with their child's behavior, emotions or learning, you may help your child get the best care possible by answering these questions. Please mark under the heading that best fits your child.

	Never (0)	Sometimes (1)	Often (2)
1. Complain of aches/pains.....	___	___	___
2. Spend more time alone.....	___	___	___
3. Tires easily, has little energy.....	___	___	___
4. Fidgety, unable to sit still.....	___	___	___
5. Has trouble with a teacher.....	___	___	___
6. Less interested in school.....	___	___	___
7. Act as if driven by a motor.....	___	___	___
8. Daydreams too much.....	___	___	___
9. Distracted easily.....	___	___	___
10. Is afraid of new situations.....	___	___	___
11. Feels sad, unhappy.....	___	___	___
12. Is irritable, angry.....	___	___	___
13. Feels hopeless.....	___	___	___
14. Has trouble concentrating.....	___	___	___
15. Less interest in friends.....	___	___	___
16. Fights with others.....	___	___	___
17. Absent from school.....	___	___	___
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19. Is down on him or herself.....	___	___	___
20. Visits doctor with doctor finding nothing wrong.....	___	___	___
21. Have trouble sleeping.....	___	___	___
22. Worries a lot.....	___	___	___
23. Wants to be with you more than before.....	___	___	___
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28. Acts younger than children his or her age.....	___	___	___
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31. Does not understand other people's feelings.....	___	___	___
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33. Blames others for his or her troubles.....	___	___	___
34. Takes things that do not belong to him or her.....	___	___	___
35. Refuses to share.....	___	___	___

Total score _____

Does your child have any emotional or behavioral problems for which s/he needs help? () N () Y
Are there any services that you would like your child to receive for these problems? () N () Y
If yes, what services? _____

©1988, M.S. Jellinek and J.M. Murphy, Massachusetts General Hospital

Disruptive Behavior & Complex Trauma

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Disruptive behavior is often the reaction to complex trauma and all forms of abuse and neglect. Often the behavior is dealt with but not the cause of the behavior. If behavior is interpreted from a trauma focused lens its possible to see the adolescent's strengths and creates space for empathy.

All forms of abuse and neglect can result in severely limited coping and maladaptive strategies (avoidance strategies, emotional numbing) and survival-based characteristics (aggressive behavior, impulsivity, emotional disconnection from others).



Marsh & Cox (2022)

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Overtime experiencing trauma is linked to a decrease in cortisol response to stress which leads to more externalizing behaviors, reduced attention span & resisting distraction, difficulty in processing mistakes, regulating emotions & inhibiting behavioral responses. This becomes even more pronounced when strong emotions, trauma reminders or perceived threats occur.

Adolescents who have experienced complex trauma do not get as much enjoyment from rewards and are more likely to seek out high dopamine activities such as risk taking.



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Importance of Emotional Regulation

Substantial research to support the role of early attachment relationships as forming the physiological templates for emotion regulation strategies throughout the lifespan—both the development of self-regulation strategies, as well as our ability to coregulate with others

Difficulties with emotional regulation are the most noticeable characteristics of many of the externalizing and internalizing disorders

Children with high levels of negative emotional reactivity tend to display poor frustration tolerance, impulsive outbursts in response to stressors or provocation, reduced empathy, & poor understanding of emotions, all of which play a large role in antisocial/disruptive behaviors



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Resources centered around Dialectical Behavioral Therapy

- Effective treatment for teens who have difficulty controlling their emotions and behaviors
- Replace problem behaviors with skillful behaviors
- Help teens experience a range of emotions without necessarily acting on those emotions
- Help teens navigate relationships with family, school & peers
- Anyone can implement these skills not just a therapist



These evidence-based skills help teens with and without mental health issues:

- Mindfulness Skills
- Distress Tolerance Skills
- Emotion Regulation Skills
- Interpersonal Effectiveness

Rathus et al. (2014).

Deep Breathing & Progressive Muscle Relaxation

- Progressive muscle relaxation reduces physical & mental tension by tensing & relaxing specific muscle groups
- Both can be done anywhere
- Both can be done before an exam or performance to reduce anxiety
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Pontz (2018); Hillsborough County (2021)

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BAND-OF-LIGHT MEDITATION

Sit quietly and relax using mindful breathing. Now imagine a narrow band of white light moving down your entire body. As it moves, notice sensations on those parts of your body that pass below the band. Do your best to observe those sensations without judging. Relax further with each breath.

MUSCLE RELAXATION

To do this you will be purposely tensing each muscle and releasing the tension. This will help you relax every muscle in your body. Start by tensing the muscles in your toes by curling them into your foot. Hold the tension for 5 seconds and then release. Notice how your muscles relax. Repeat this process in your legs, pelvic/hips, shoulders/arms, hands, neck and jaw.

WALKING MEDITATION

Stand up STRAIGHT with your back upright but not stiff. Feel your feet touching the ground and let your weight distribute evenly. Step out with your left FOOT, feel it swing, feel the heel hit the ground, now the ball, now the toes. FEEL the same as the right foot comes forward. Walk at a STEADY pace, slightly slower than in daily life but not hurried. When your attention wanders, bring it back to the sensations of your feet touching the ground.

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Avoid looking at anything with a screen. Show away your tablet, phone, computer, and TV for the night - the light can keep you awake and alert. Ten minutes before bedtime, begin a focused mindfulness exercise. Sit in a comfortable chair in the same dimly lit room. Imagine the outline of your body and slowly trace it in your head. Keep in mind the amount of pressure you're feeling against the chair or the ground and be mindful of where there's more pressure and where there's less. Spend around five minutes breathing mindfully. If your mind begins to wander, notice that it wandered and get back on track. Try to avoid judging yourself. Get in bed and focus on your breath. If you are unable to fall asleep, get up, sit in the comfortable chair again and repeat the exercise. Don't get back into bed until you're sleepy - and don't sleep in the chair!

SELF-SOOTHE WITH THE 5 SENSES



VISION

- Look at pictures online that you find soothing
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- Go to a museum or gallery and enjoy the art



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- Take a long hot bath or shower
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When emotions are out of control, you can use TIPP skills to bring down the intensity. There are four TIPP skills described in dialectical behavior therapy (DBT). Using them in a crisis can calm things to the point that we can then use other coping skills. These skills are meant to be used when you are in extreme distress - when at your max.

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Tip the Temperature - by changing our body temperature, we can quickly decrease the intensity of an emotion. Dip your face in cold water (not less than 50 degrees) and hold your breath. Try to hold it there for 30 to 60 seconds. You can also try an ice pack on your face around your eyes and cheeks.

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Intense Exercise - by engaging in intense cardiovascular exercise, you engage your body in a way that de-escalates intense emotions. Ideally, try to exercise for 20 minutes or more, but if that's not possible, do what you can.

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paced Breathing - try to slow your breathing down to 5 or 6 breaths per minute. Try to aim for a full breath lasting 10 to 12 seconds. You can also use 4-7-8 breathing: breath in while slowing counting to 4, hold your breath while quickly counting to 7 and breath out while very slowly counting to 8.

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Paced Muscle Relaxation - practice tensing your muscles as you breathe in for 5-6 seconds. Notice that feeling. Then relax them as you breathe out, paying attention to how that feels as you do it. Notice the difference between the feeling of tension and the feeling of relaxation. Do this for every muscle in your body, scanning from the top of your head to your toes.

Maintaining a balanced sleep pattern will decrease your emotional vulnerability.

1. **Stick to a schedule** and don't sleep late on weekends. If you sleep late on Saturday and Sunday morning, you will disrupt your sleep pattern. Instead, go to bed and get up at about the same time every day.
2. **Establish a bedtime routine.** This might include shutting off screens (TV, computer, cell phone), changing into comfy PJs, sipping herbal tea, lowering bright lights and reducing noise, and reading.
3. **Don't eat or drink a lot before bed.** Eat a light dinner at least 2 hours before sleeping. If you drink too many liquids before bed, you'll wake up repeatedly for trips to the bathroom. Watch out for spicy foods, which may cause heartburn and interfere with sleep.
4. **Avoid caffeine and nicotine.** Both are stimulants and can keep you awake. Caffeine should be avoided for 8 hours before your desired bedtime.
5. **Exercise.** If you're trying to sleep better, the best time to exercise is in the morning or afternoon. A program of regular physical activity enhances the quality of your sleep.
6. **Keep your room cool.** Turn the temperature in the room down, as this mimics the natural drop in your body's temperature during sleep. Use an air conditioner or a fan to keep the room cool. If you get cold, add more layers. If you are hot, remove some layers.
7. **Sleep primarily at night.** Daytime naps steal hours from your nighttime sleep. Limit daytime sleep to less than 1 hour, no later than 3:00 p.m.
8. **Keep it dark, quiet, and NO SCREENS.** Use shades, blinds, and turn off lights. Silence helps you sleep better. Turn off the radio and TV. Use earplugs. Use a fan, a white noise machine, or some other source of constant, soothing, background noise to mask sounds you can't control. No laptops, iPads, phones, or screens for at least 1 hour before bedtime.

Importance of Sleep Hygiene

9. **Use your bed only for sleep.** Make your bed comfortable and appealing. Use only for sleep—not for studying or watching TV. Go to bed when you feel tired and turn out the lights. If you don't fall asleep in 30 minutes, get up and do something else relaxing like reading books or magazines—NO SCREENS! Go back to bed when you are tired. Don't stress out! This will make it harder to fall asleep.
10. **Soak and sack out.** Taking a hot shower or bath before bed helps relax tense muscles.
11. **Don't rely on sleeping pills.** If they are prescribed to you, use them only under a doctor's close supervision. Make sure the pills won't interact with other medications!
12. **Don't catastrophize.** Tell yourself "It's OK, I'll fall asleep eventually."

Please complete the Post-Survey
This will take around 2 minutes
Thank-you so much



https://usfca.qualtrics.com/jfe/form/SV_1WSuNnxoeGw7y2G



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<https://www.youtube.com/watch?v=lyZr2D1Zky0>

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Appendix L

Educational PowerPoint for Teachers and School Counselors



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What Students Can I Refer to the COST Team?

- Have lost interest in things that they used to enjoy
- Disruptive behavior/Frequent absences
- Sleep too much or too little or seem sleepy throughout the day
- Are spending more and more time alone and avoid social activities with friends or family
- Diet or exercise excessively, or fear gaining weight
- Engage in self-harm behaviors (such as cutting or burning their skin)
- Smoke, drink, or use drugs
- Engage in risky or destructive behavior alone or with friends
- Have thoughts of suicide
- Have periods of highly elevated energy and activity and require much less sleep than usual
- Say that they think someone is trying to control their mind or that they hear things that other people cannot hear
- Are bullying others or have been bullied
- Sexually inappropriate behavior
- **You know your students, trust your gut instincts**



<https://www.nimh.nih.gov/sites/default/files/documents/health/publications/children-and-mental-health/children-and-mental-health-is-this-just-a-stage.pdf>
National Institute of Mental Health. (2021).

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Creating Calmness in the Classroom or School Counselors Office

Self-regulating emotions is an important skill for all high schoolers

Could start the class or session with either breathing exercises or progressive muscle relaxation

Check in/Check out:

Change up your entry routine to create ways for students to self-reflect on how they are feeling

Calming Corners:

Create a safe space in the classroom to chill out if students are feeling overwhelmed

Self-Care Station:

This station can be placed by the door. Have tissues, aromatherapy lotions, hand sanitizer, peppermints and other tangible items that students can access during class



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3. **Don't eat or drink a lot before bed.** Eat a light dinner at least 2 hours before sleeping. If you drink too many liquids before bed, you'll wake up repeatedly for trips to the bathroom. Watch out for spicy foods, which may cause heartburn and interfere with sleep.
4. **Avoid caffeine and nicotine.** Both are stimulants and can keep you awake. Caffeine should be avoided for 8 hours before your desired bedtime.
5. **Exercise.** If you're trying to sleep better, the best time to exercise is in the morning or afternoon. A program of regular physical activity enhances the quality of your sleep.
6. **Keep your room cool.** Turn the temperature in the room down, as this mimics the natural drop in your body's temperature during sleep. Use an air conditioner or a fan to keep the room cool. If you get cold, add more layers. If you are hot, remove some layers.
7. **Sleep primarily at night.** Daytime naps steal hours from your nighttime sleep. Limit daytime sleep to less than 1 hour, no later than 3:00 P.M.
8. **Keep it dark, quiet, and NO SCREENS.** Use shades, blinds, and turn off lights. Silence helps you sleep better. Turn off the radio and TV. Use earplugs. Use a fan, a white noise machine, or some other source of constant, soothing, background noise to mask sounds you can't control. No laptops, iPads, phones, or screens for at least 1 hour before bedtime.

Importance of Sleep Hygiene

9. **Use your bed only for sleep.** Make your bed comfortable and appealing. Use only for sleep—not for studying or watching TV. Go to bed when you feel tired and turn out the lights. If you don't fall asleep in 30 minutes, get up and do something else relaxing like reading books or magazines—NO SCREENS! Go back to bed when you are tired. Don't stress out! This will make it harder to fall asleep.
10. **Soak and sack out.** Taking a hot shower or bath before bed helps relax tense muscles.
11. **Don't rely on sleeping pills.** If they are prescribed to you, use them only under a doctor's close supervision. Make sure the pills won't interact with other medications!
12. **Don't catastrophize.** Tell yourself "It's OK, I'll fall asleep eventually."

Please complete the Post-Survey
This will take around 2 minutes
Thank-you for much



https://usfca.qualtrics.com/jfe/form/SV_3qIf7m7nAd4SzGe



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Appendix M

Pre-Intervention Qualtrics Survey for Healthcare Providers



CHANGE THE WORLD FROM HERE

Please take a couple of minutes to answer the questions. All answers will be kept confidential, anonymous and will not be published.

What is your current Job Title?

- Principle
- Assistant principal
- Therapist
- School counselor
- Teacher Family nurse practitioner
- Registered nurse
- Librarian
- School counselor intern
- PMHNP intern
- Social emotional counselor

How old are you?

- Under 18
- 18=24 years old
- 25-34 years old
- 35 to 44 years old
- 45-54 years old
- 55-64 years old
- 65+ years old

How would you describe yourself?

- Male
- Female
- Non-binary/third gender
- Prefer to self-describe:
- Prefer not to say

What race/ethnicity do you identify with?

- White
- Black, or African American
- American Indian or Alaskan Native
- Native Hawaiian, or Pacific Islander
- Hispanic
- Asian:
- Other

What is the highest level of education you have completed?

- Some high school or less
- High school diploma or GED
- Some college but no degree
- Associate or technical degree
- Bachelor's degree
- Graduate, or professional degree
- Prefer not to say

I am aware of resources that I can use when adolescents appear overwhelmed or stressed.

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Are you confident in your overall knowledge of adolescent mental health?

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Are you confident in being able to use resources to help adolescents if they are having psychological distress?

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Are you confident in using a general adolescent mental health assessment tool?

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Appendix N

Post-Intervention Qualtrics Survey for Healthcare Providers



CHANGE THE WORLD FROM HERE

I am aware of resources that I can use when adolescents appear overwhelmed or stressed.

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Are you confident in your overall knowledge of adolescent mental health?

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Are you confident in being able to use resources to help adolescents if they are having psychological distress?

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Are you confident in using a general adolescent mental health assessment tool?

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Can you describe two to three words of how you feel after the educational session?

Thank-you so very much for completing the surveys and completing the education.

Appendix O

Pre-Intervention Qualtrics Survey for Teachers and School Counselors



CHANGE THE WORLD FROM HERE

Please take a couple of minutes to answer the questions. All answers will be kept confidential, anonymous and will not be published.

What is your current Job Title?

- Principle
- Assistant principal
- Therapist
- School counselor
- Teacher
- Family nurse practitioner
- Registered nurse
- Librarian
- School counselor intern
- PMHNP intern
- Social emotional counselor

How old are you?

- Under 18
- 18=24 years old
- 25-34 years old
- 35 to 44 years old
- 45-54 years old
- 55-64 years old
- 65+ years old

How would you describe yourself?

- Male
- Female
- Non-binary/third gender
- Prefer to self-describe:
- Prefer not to say

What race/ethnicity do you identify with?

- White
- Black, or African American
- American Indian or Alaskan Native
- Native Hawaiian, or Pacific Islander
- Hispanic
- Asian:
- Other

What is the highest level of education you have completed?

- Some high school or less
- High school diploma or GED
- Some college but no degree
- Associate or technical degree
- Bachelor's degree
- Graduate, or professional degree
- Prefer not to say

Are you confident about which students to refer to the COST team?

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

I am aware of resources that I can use when adolescents appear overwhelmed or stressed.

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Are you confident in your overall knowledge of adolescent mental health?

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Are you confident in being able to use resources to help adolescents if they are having psychological distress?

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Appendix P

Post-Intervention Qualtrics Survey for Teachers and School Counselors



Are you confident about which students to refer to the COST team?

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

I am aware of resources that I can use when adolescents appear overwhelmed or stressed.

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Are you confident in your overall knowledge of adolescent mental health?

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Are you confident in being able to use resources to help adolescents if they are having psychological distress?

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Can you describe two to three words of how you feel after the educational session?

Thank-you so very much for completing the surveys and completing the education.

Appendix Q

Healthcare Providers Demographic Data

Figure 1

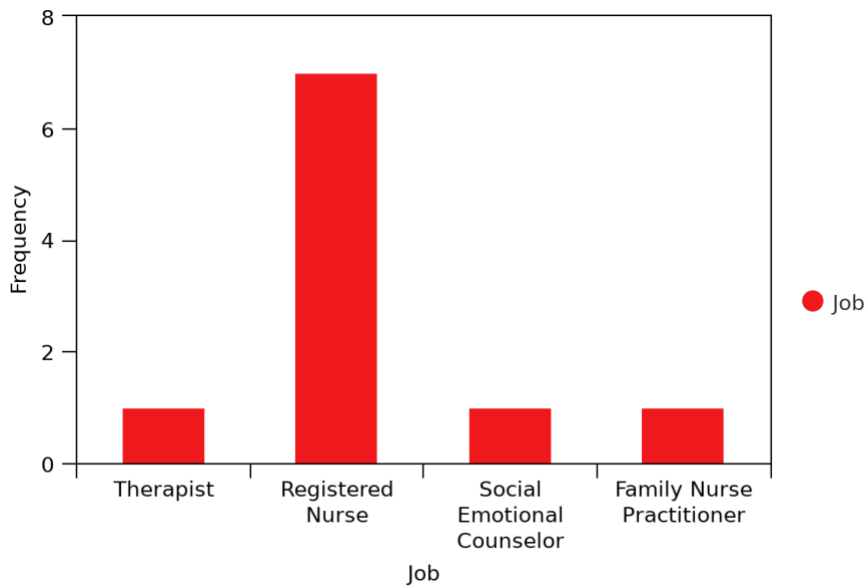
Frequency Distribution of Job Title

Figure 2

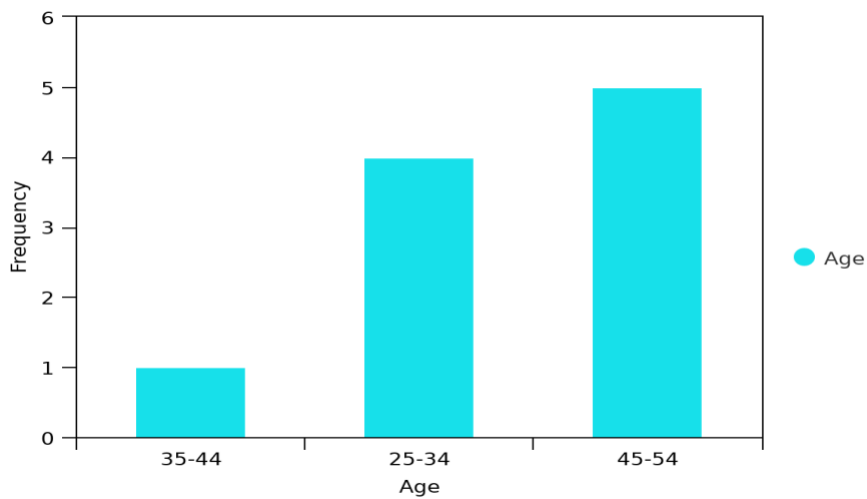
Frequency Distribution of Age Range

Figure 3

Frequency Distribution of Gender

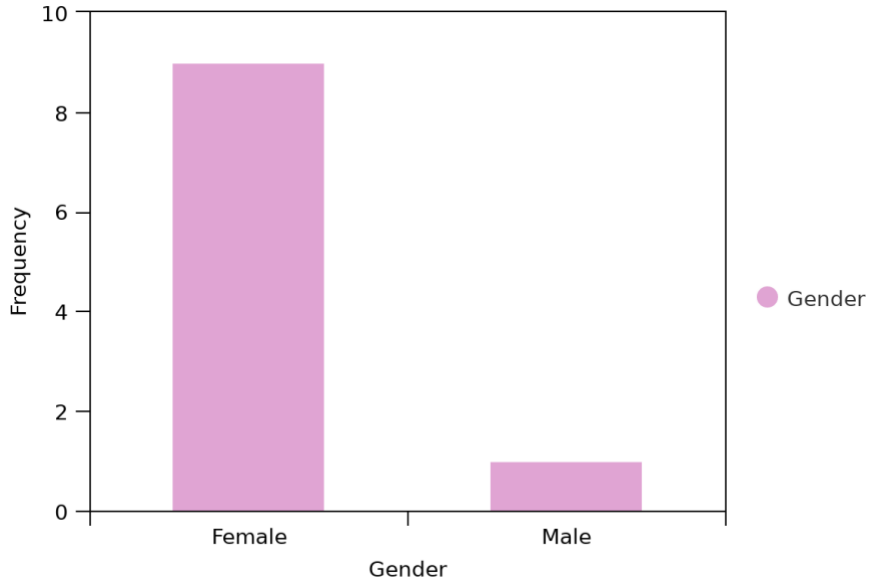


Figure 4

Frequency Distribution of Race

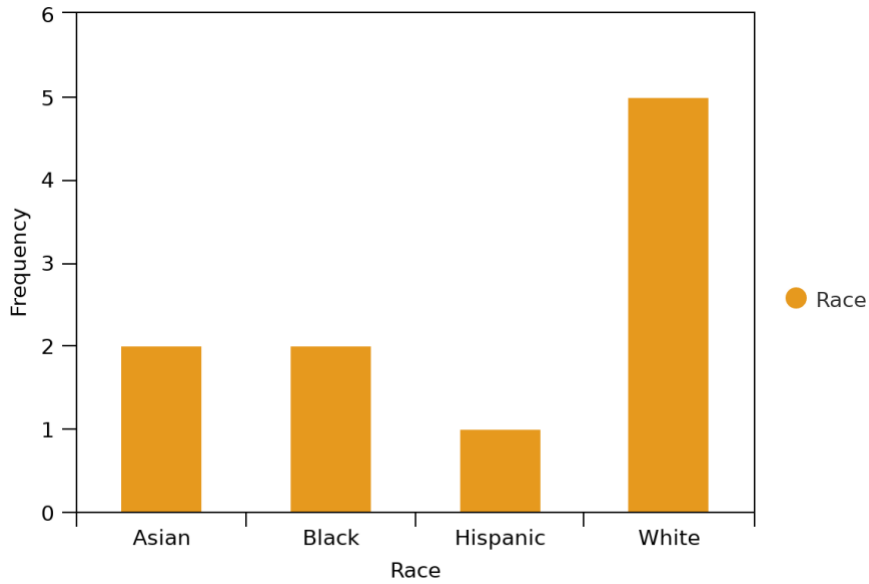
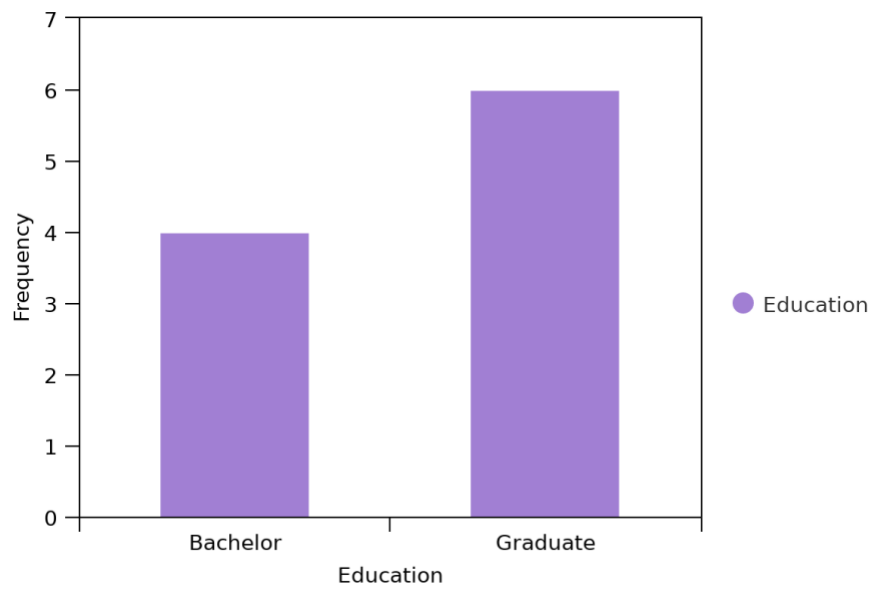


Figure 5

Frequency Distribution of Education Level



Appendix R

Teachers and School Counselors Demographic Data

Figure 1

Frequency Distribution for Job Title

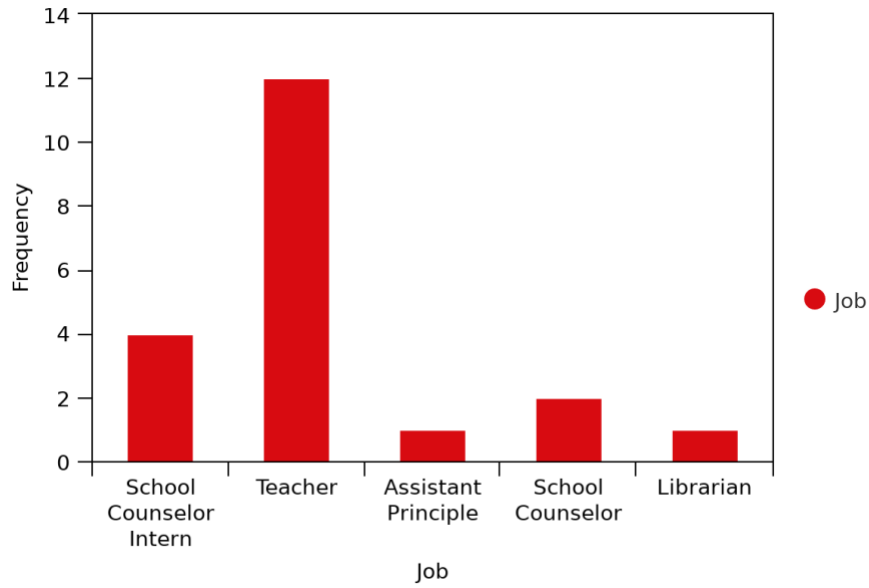


Figure 2

Frequency Distributions for Age Range

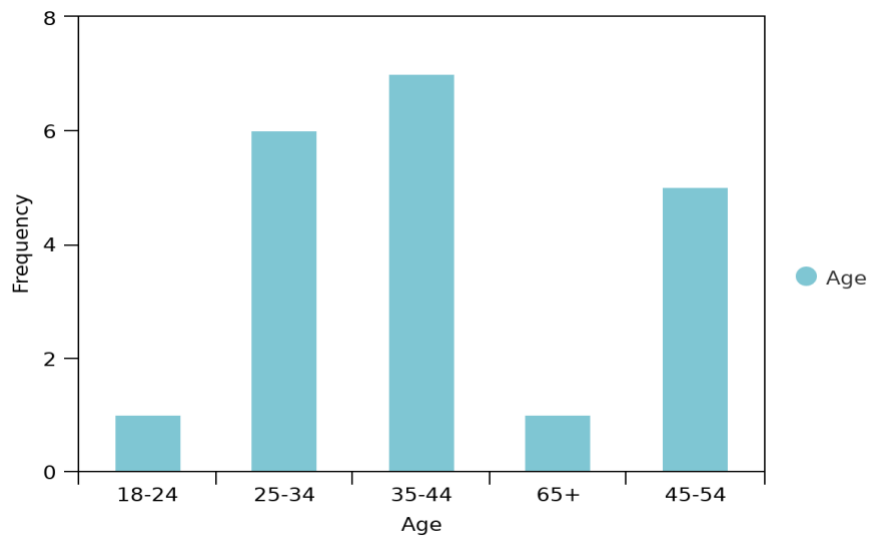


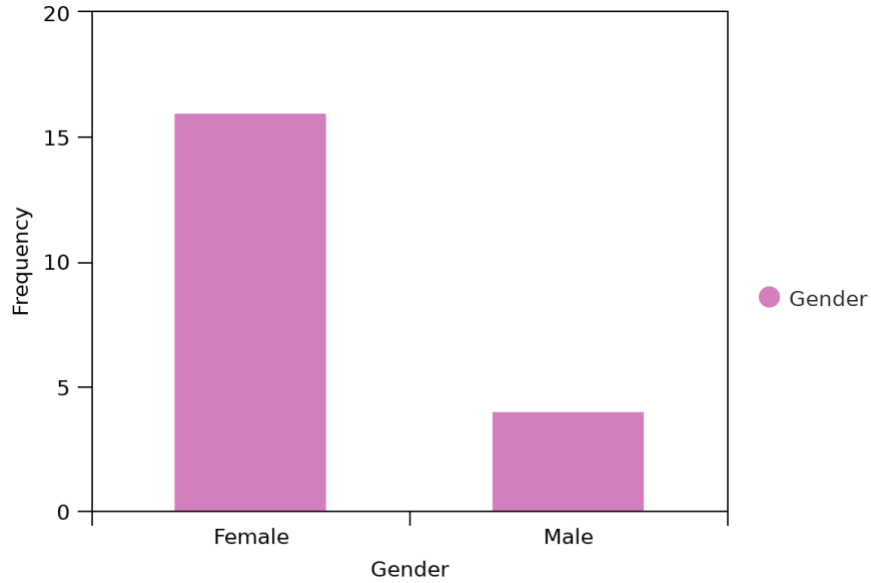
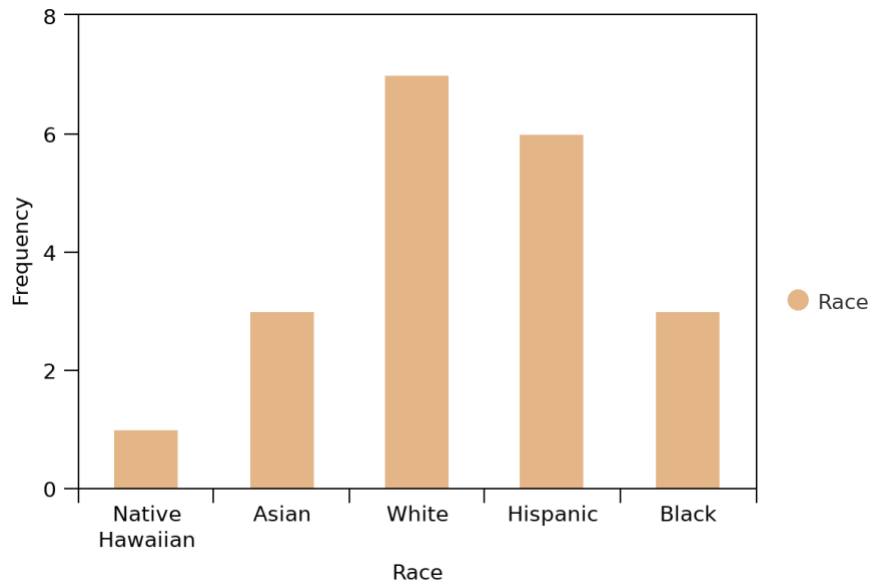
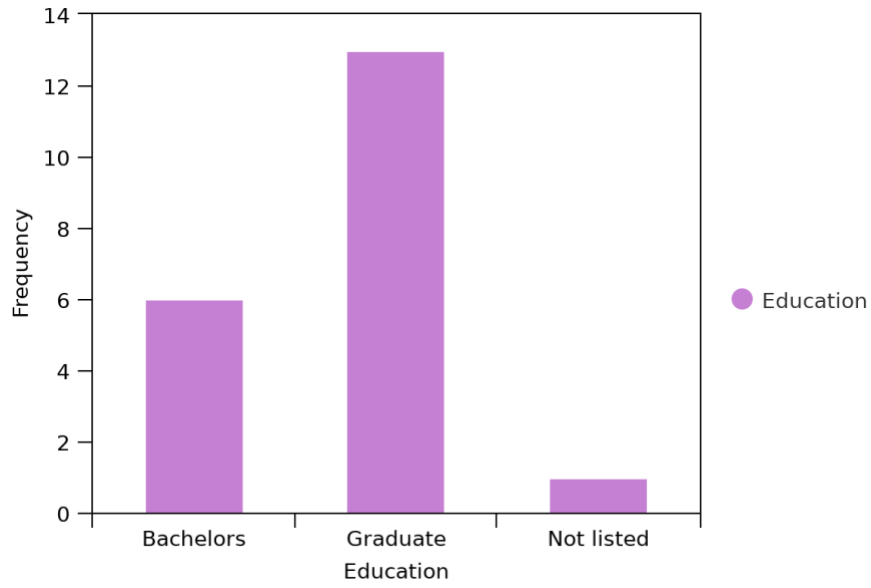
Figure 3*Frequency Distribution for Gender***Figure 4***Frequency Distribution for Race*

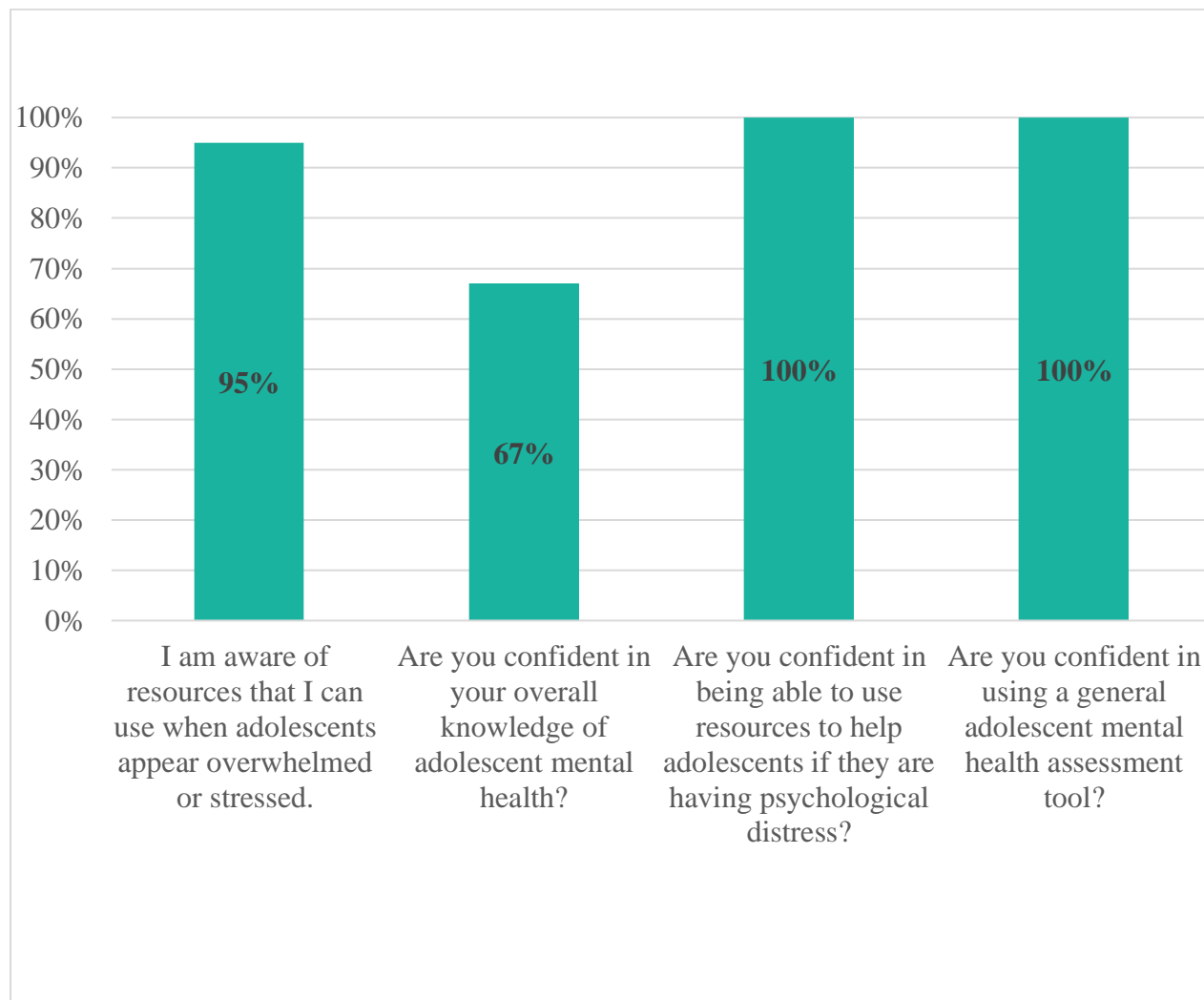
Figure 5

Frequency Distribution for Education Level



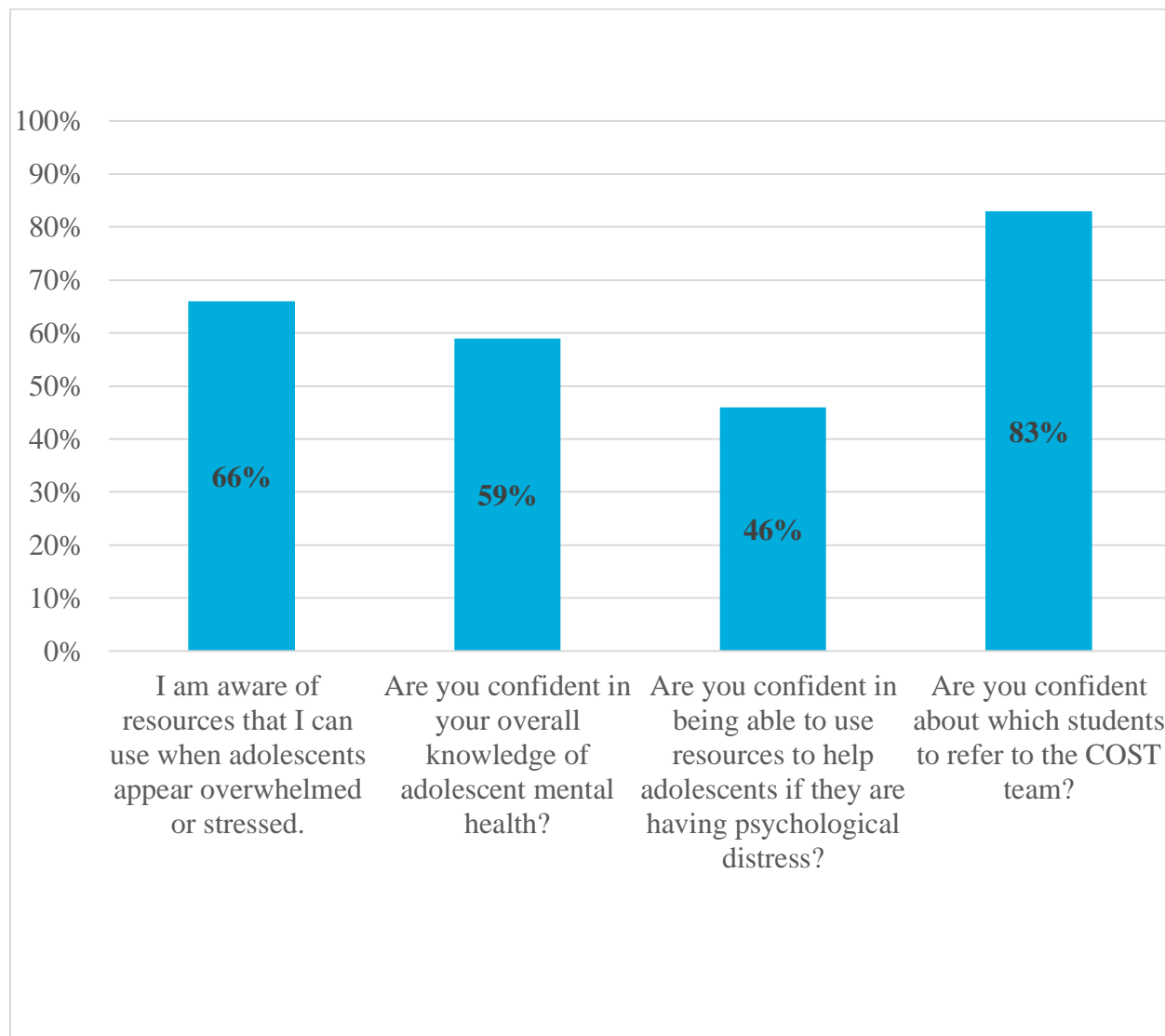
Appendix S

Healthcare Providers Percentage Learning Gain from Educational Intervention



Appendix T

Teachers and School Counselors Percentage Learning Gain from Educational Intervention



Appendix U

Statistical Analysis of Healthcare Providers

Question Seven: I am Aware of Resources that I can use When Adolescents Appear Overwhelmed or Stressed.

Table 1

Two-Tailed Paired Samples t Test for the Difference Between Q7 Pre and Q7 Post Education

Q7 Pre		Q7 Post		<i>t</i>	<i>p</i>	<i>d</i>	Standardizer*
<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>				
2.90	0.88	4.90	0.32	-7.75	< .001	2.48	.816

Note. N = 10. Degrees of Freedom for the *t*-statistic = 9. *d* represents Cohen's *d*. *The standardizer denominator used in estimating the effect sizes. Cohen's *d* uses the sample standard deviation of the mean difference.

Table 2

Two-Tailed Wilcoxon Signed Rank Test for the Difference Between Q7 Pre and Q7 Post Education

Q7 Pre		Q7 Post	
<i>α</i>	<i>V</i>	<i>z</i>	<i>p</i>
.05	0.00	-2.84	.005

Note. N = 10.

Question Eight: Are you Confident in Your Overall Knowledge of Adolescent Mental Health?

Table 3

Two-Tailed Paired Samples t Test for the Difference Between Q8 Pre and Q8 Post Education

Q8 Pre		Q8 Post		<i>t</i>	<i>p</i>	<i>d</i>	Standardizer*
<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>				
2.60	0.97	4.20	0.92	-6.00	< .001	1.90	.70711

Note. N = 10. Degrees of Freedom for the *t*-statistic = 9. *d* represents Cohen's *d*.

*The standardizer denominator used in estimating the effect sizes. Cohen's *d* uses the sample standard deviation of the mean difference.

Question Nine: Are you Confident in Being Able to use Resources to Help Adolescents if They are Having Psychological Distress?

Table 4

Two-Tailed Paired Samples t Test for the Difference Between Q9 Pre and Q9 Post Education

Q9 Pre		Q9 Post		<i>t</i>	<i>p</i>	<i>d</i>	Standardizer*
<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>				
2.90	0.88	5.00	0.00	-7.58	< .001	2.40	.87560

Note. N = 10. Degrees of Freedom for the *t*-statistic = 9. *d* represents Cohen's *d*.

*The standardizer denominator used in estimating the effect sizes. Cohen's *d* uses the sample standard deviation of the mean difference.

Table 5

Two-Tailed Wilcoxon Signed Rank Test for the Difference Between Q9 Pre and Q9 Post Education

Q9 Pre		Q9 Post	
<i>A</i>	<i>V</i>	<i>z</i>	<i>p</i>
.05	0.00	-2.84	.005

Note. N = 10.

Question Ten: Are you Confident in Using a General Adolescent Mental Health Assessment Tool?

Table 6

Two-Tailed Paired Samples t Test for the Difference Between Q10 Pre and Q10 Post Education

Q10 Pre		Q10 Post		<i>t</i>	<i>p</i>	<i>d</i>	Standardizer*
<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>				
1.80	1.14	5.00	0.00	-8.91	< .001	2.82	1.135

Note. N = 10. Degrees of Freedom for the *t*-statistic = 9. *d* represents Cohen's *d*.

*The standardizer denominator used in estimating the effect sizes. Cohen's *d* uses the sample standard deviation of the mean difference.

Table 7

Two-Tailed Wilcoxon Signed Rank Test for the Difference Between Q9 Pre and Q10 Post Education

	Q10 Pre		Q10 Post	
α	V	z	p	
.05	0.00	-2.87	.004	

Note. N =10.

Appendix V

Statistical Analysis of Teachers and School Counselors

Question Six: Are you Confident About Which Students to Refer to the COST Team?

Table 1

Two-Tailed Paired Samples t Test for the Difference Between Q6 Pre and Q6 Post Education

Q6 Pre		Q6 Post		<i>t</i>	<i>p</i>	<i>d</i>	Standardizer*
<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>				
3.30	1.17	4.70	0.47	-5.09	< .001	1.14	1.231

Note. N = 20. Degrees of Freedom for the *t*-statistic = 19. *d* represents Cohen's *d*.

*The standardizer denominator used in estimating the effect sizes. Cohen's *d* uses the sample standard deviation of the mean difference.

Table 2

Two-Tailed Wilcoxon Signed Rank Test for the Difference Between Q6 Pre and Q6 Post Education

Q6 Pre		Q6 Post	
<i>α</i>	<i>V</i>	<i>z</i>	<i>p</i>
.05	0.00	-3.35	< .001

Note. N = 20.

Question Seven: I am Aware of Resources That I can use When Adolescents Appear Overwhelmed or Stressed.

Table 3

Two-Tailed Paired Samples t Test for the Difference Between Q7 Pre and Q7 Post Education

Q7 Pre		Q7 Post		<i>t</i>	<i>p</i>	<i>d</i>	Standardizer*
<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>				
3.25	0.97	4.40	0.50	-7.67	< .001	1.71	.67082

Note. N = 20. Degrees of Freedom for the *t*-statistic = 19. *d* represents Cohen's *d*.

*The standardizer denominator used in estimating the effect sizes. Cohen's *d* uses the sample standard deviation of the mean difference.

Table 4

Two-Tailed Wilcoxon Signed Rank Test for the Difference Between Q7 Pre and Q7 Post Education

Q7 Pre		Q7 Post	
α	V	z	p
.05	0.00	-3.76	< .001

Note. N =20.

Question Eight: Are you Confident in Your Overall Knowledge of Adolescent Mental Health?

Table 5

Two-Tailed Paired Samples t Test for the Difference Between Q8 Pre and Q8 Post Education

Q8 Pre		Q8 Post		t	p	d	Standardizer*
M	SD	M	SD				
3.15	0.88	4.25	0.44	-6.85	< .001	1.53	.718

Note. N = 20. Degrees of Freedom for the t -statistic = 19. d represents Cohen's d .

*The standardizer denominator used in estimating the effect sizes. Cohen's d uses the sample standard deviation of the mean difference.

Table 6

Two-Tailed Wilcoxon Signed Rank Test for the Difference Between Q8 Pre and Q8 Post Education

Q8 Pre		Q8 Post	
α	V	z	p
.05	0.00	-3.64	< .001

Note. N =20.

Question Nine: Are you Confident in Being Able to use Resources to Help Adolescents if They are Having Psychological Distress?

Table 7

Two-Tailed Paired Samples t Test for the Difference Between Q9 Pre and Q9 Post Education

Q9 Pre		Q9 Post		<i>t</i>	<i>p</i>	<i>d</i>	Standardizer*
<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>				
3.15	1.09	4.30	0.47	-5.88	< .001	1.31	0.875

Note. N = 20. Degrees of Freedom for the *t*-statistic = 19. *d* represents Cohen's *d*.

*The standardizer denominator used in estimating the effect sizes. Cohen's *d* uses the sample standard deviation of the mean difference.

Table 8

Two-Tailed Wilcoxon Signed Rank Test for the Difference Between Q9 Pre and Q9 Post Education

Q9 Pre		Q9 Post	
<i>α</i>	<i>V</i>	<i>z</i>	<i>p</i>
.05	0.00	-3.42	< .001

Note. N = 20.

Appendix W

Word Cloud of Healthcare Providers Evaluation of Education

Interesting
Interesting Love
Helpful Learning
Love Confidence
Helpful Accurate
Confidence
Learning
Thorough

Appendix X

Word Cloud of Teacher and School Counselors Evaluation of Education



Appendix Y

Statement of Non-Research Determination



UNIVERSITY OF
SAN FRANCISCO

School of Nursing and
Health Professions

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

General Information

Last Name:	Kilford	First Name:	Chantel
CWID Number:	20625529	Semester/Year:	Spring 2023
Course Name & Number:	DNP Project. NURS-789		
Chairperson Name:	Dr. Trinette Radasa	Advisor Name:	Dr. Trinette Radasa
Second Reader Name:	Dr. Susan Mortell		

Project Description

Title of Project: School-Based Development and Implementation of Adolescent Mental health Educational Toolkits

Brief Description of Project

The idea for the Doctorate in Nursing project is an evidence based educational toolkit for healthcare staff and then school counselors and teachers within a high school about disruptive behavior in adolescents and the importance of emotional regulation. There will also be integration of a relevant mental health assessment tool in which healthcare providers will be given education and then follow up support on its use. It is important for identification of disruptive behavioral disorders such as conduct disorder (CD) and oppositional defiant disorder (ODD) and associated co-morbidities because these increase mortality risk, further mental health issues and substance misuse later in life. These issues

also impact a child's academic progress and potential for criminality and is associated with a high societal and economic burden (Fairchild et al., 2019).

There is also evidence to suggest that healthcare workers, school counselors and teachers are not educated enough or confident about identification and/or management of these disorders. Healthcare staff, school counselors and teachers do not receive adequate training about these disruptive disorders within the schooling curriculum (Balestra, 2019; Baum et al., 2019; Hanisch et al. 2020).

School based providers are key to identify, assess, give brief intervention, and refer (if necessary) to mental health providers. School based providers are often the first to see the child and on a regular basis, so a trusting relationship with child and caregivers can form. Early preventive interventions have been consistently shown to reduce the risk of disruptive behaviors escalating and does improve lifelong outcomes (Frick, 2016).

AIM Statement: What are you trying to accomplish?

By April 2023, develop, implement, and evaluate educational toolkits surrounding childhood behavioral disorders and use of a mental health assessment tool in children for high school-based providers. Healthcare providers will include a family nurse practitioner, psychiatric nurse practitioner interns, registered nurse, therapists, and social emotional counselor and then another educational toolkit will be given to school counselors, school counselor interns, teachers, librarian, and assistant principal. The desired outcome is that school based providers knowledge of childhood disruptive behavioral disorders and confidence when encountering and providing interventions for these disorders, will be increased by at least 20% post educational intervention and will show a significant increase in knowledge and confidence with an alpha level of less than 0.05.

Brief Description of Intervention:

There were discussions with all stakeholders prior to designing the educational toolkit to ascertain what educational needs they require, and it was ascertained that there is a general interest in completing the educational intervention. There will be two educational toolkits. One for healthcare providers and one for teachers and school counselors as they have different educational needs. A survey immediately before the educational intervention will establish known knowledge and confidence about assessment and management of children disruptive disorders. The educational intervention will be both an online learning module PowerPoint presentation and in made available in person for those interested. The educational toolkit will focus on assessment, strategies, and resources to assist in management of children with disruptive disorders and emotional regulation skills that are applicable to all children, not just those with disruptive behavioral and mental health issues. For the healthcare providers in their educational intervention there was education about a reliable, valid assessment tool that can be used to assess risk of having mental illness. Immediately after the intervention, a survey with the same questions will be given to staff to assess if knowledge and confidence improved. On-site visits will be integrated throughout the process to assist with the utilization of the

assessment tool and general support. A qualitative question will be implemented with the post survey to evaluate staff thoughts about the educational toolkits.

How will this intervention be implemented?

The project will be implemented within a high school in Alameda County, California. The stakeholders will be informed about the educational toolkit through on-site visits and email. The educational toolkits will be both online and in person. On-site visits will be offered afterwards to provide support.

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

Measurement will be ascertained through pre and post scores about confidence and knowledge, which was measured by validated mental health literacy tool and validated confidence tool. There will be measurement of both knowledge and clinician confidence pre and immediately post administration of the educational toolkit. Both knowledge and confidence levels will be increased by 20% and there will be a statistically significant alpha level below .05. To protect privacy and confidentiality, stakeholder's participation in surveys and exams will not have any personal identifiers. Consent for the surveys and exam will be obtained before completion.



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

Title of Project: School-Based Development and Implementation of an Educational Toolkit

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.	X	
The specific aim is to improve performance on a specific service or program and is a part of usual care . <u>All</u> participants will receive standard of care.	X	
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.	X	
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.	X	
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.	X	
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.	X	
The project has no funding from federal agencies or research-focused organizations and is not receiving funding for implementation research.	X	
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.	X	
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: <i>"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."</i>	X	

Answer Key:

- If the answer to all 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>

References

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

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:	Kilford	Student First Name:	Chantel
Student Signature:	<u>Chantel Kilford</u>	Date:	<u>03/03/2023</u>
Chairperson Name:	<u>Dr Trinetta Radasa</u>		
Chairperson Signature:	_____	Date:	_____
Second Reader Name:	<u>Dr. Susan Mortell</u>	Date:	_____
Second Reader Signature:	_____		
DNP SOD Review Committee Member Name:	_____		
DNP SOD Review Committee Member Signature:	_____	Date:	_____

