

IMPROVING ADOLESCENT PSYCHOSOCIAL ASSESSMENT THROUGH  
STANDARDIZED PATIENT SIMULATION: AN INTERDISCIPLINARY QUALITY  
INITIATIVE

A Doctor of Nursing Practice Project Report

by

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Submitted in Partial Fulfillment of the Requirements for the Degree of

DOCTOR OF NURSING PRACTICE

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This Doctor of Nursing Practice Project Report meets the standards for scope and quality of Texas A&M University-Corpus Christi College of Nursing and Health Sciences and is hereby approved.

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August 2022

## DEDICATION

I would like to dedicate this work to my devoted husband, Joshua, two exceptional children, James and Dalilah, my greatest friend Karolyn, and the rest of my amazing family. Without their love and encouragement this accomplishment would not have been possible. They have each sacrificed to support me through this transformational journey, and for that I am eternally grateful.

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## ABSTRACT

Prevention of adolescent suicide is possible with early recognition of risk factors; however, many healthcare professionals lack necessary skills to interact effectively with adolescents due to insufficient training in residency. Supplementing traditional clinical experiences with communication focused education utilizing standardized adolescent patients (SP) has proven promising. This interdisciplinary quality initiative (QI) piloted an SP program informed by the Home, Education, Eating, Activities, Drugs, Sexuality, Suicidality, and Safety (HEEADSSS) interviewing process within the physician and nursing residencies of a South Texas pediatric tertiary care center to improve early identification of modifiable risk factors of suicidality among adolescent patients. Thirty-six residents participated in a program comprised of a 45-minute self-study module and a two-hour SP simulation session incorporating adolescent psychosocial interviews with individualized feedback and guided group reflection. Results of the one-group, pretest-posttest QI were favorable. A 13% increase in self-efficacy ( $M = 8.64$ ,  $SD = 0.65$ ),  $p = <.001$ ,  $d = -1.79$ , 11% increase in competence ( $M = 55.83$ ,  $SD = 7.58$ ),  $p = <.001$ ,  $d = -0.56$ , 17% increase in HEEADSSS use in practice ( $M = 2.55$ ,  $SD = 0.69$ ),  $p = 0.02$ ,  $rrb = -1$ , and 89% increase in social work referrals for adolescents presenting with chief complaints not related to mental health were observed. While these improvements satisfied only one of the project's aims fully, the clinically significant findings are encouraging and warrant the formal incorporation of the adolescent SP program into residency curriculums along with the exploration of utilizing SP methodology within other QI throughout the organization.

*Keywords:* adolescent, HEEADSSS, interdisciplinary, standardized patient, simulation

# Improving Adolescent Psychosocial Assessment through Standardized Patient Simulation:

## An Interdisciplinary Quality Initiative

### INTRODUCTION

Despite increased societal awareness, suicide continues to plague our nations' youth and has led to a public health crisis. Intentional self-harm persists as the second leading cause of death among adolescents aged 11-21 with a rate of 8.9 per 100,000 (Centers for Disease Control and Prevention [CDC], 2021), and approximately one in five (18.8%) high school youths report seriously considering attempting suicide (Ivey-Stephenson et al., 2020). In 2020, mental-health related emergency department (ED) admissions among adolescents increased by 31%, with suspected suicide attempts rising by 50.6% among females and 3.7% among males (Yard et al., 2021).

Not only does adolescent suicide pose a profound emotional toll on families and communities, but it also constitutes a heavy economic burden on society. The estimated annual medical costs associated with non-fatal suicide attempts for all ages in the United States is \$1.5 billion (Shepard et al., 2016). For each completed adolescent suicide, the average total economic cost ranges from \$1.2 to \$1.4 million (Shepard et al., 2016), with a present estimated overall value of total lost earning potential of \$4.26 billion (Doran & Kinchin, 2020). Fortunately, adolescent suicide may be prevented through the early identification of modifiable risk factors (Fallucco et al., 2010; Horowitz et al., 2020). However, many pediatric healthcare providers report feeling ill equipped to interact effectively with children in this developmental stage related to a lack of training (Borzutzky, 2021.)

## **Background**

Although considered a multifaceted phenomenon, mental illness, substance use disorders, previous suicide attempts, impulsive or aggressive personalities, interpersonal loss, feelings of isolation or hopelessness, family factors, childhood trauma, suicide contagion, and availability of means have all been identified as risk factors contributing to adolescent suicidality (Bilsen, 2018; Horowitz et al., 2020). Because primary and secondary prevention relies on early recognition of modifiable risk factors with appropriate intervention (Fallucco et al., 2010; Horowitz et al., 2020), the American Academy of Pediatrics recommends that pediatricians screen adolescents in routine history taking (Fallucco et al., 2010).

While written instruments can be useful for screening, Horowitz et al. (2020) suggest that up to 28% of at-risk adolescents may be overlooked when clinicians rely solely on tools such as the Patient Health Questionnaire. To address this screening gap, another recommended approach is conducting a psychosocial interview through the application of the Home, Education/Employment, Eating, Activities/Screens, Drugs/Alcohol, Sexuality, Suicidal ideation, and Safety (HEEADSSS) framework (Tanski et al., 2010). Guided by the HEEADSSS framework, clinicians enhance adolescent communication by building rapport and moving from relatively benign conversations to more sensitive topics (Goldenring & Cohen, 1988).

## **Review of Literature**

In 2009 the National Research Council and Institute of Medicine's Committee on Adolescent Health Care Services and Models of Care for Treatment, Prevention, and Healthy Development reported that many providers of healthcare lacked the necessary skills to interact effectively with adolescents. Subsequent studies suggest little progress despite increased awareness of the deficiency. For instance, on a 5-point Likert scale, 32 pediatric trainees

surveyed by Sawyer et al. (2013) reported decreased confidence in working with adolescents in clinical practice as compared to other age groups ( $M = 2.80$ ,  $SD = 0.83$ ). Additionally, a survey of 53 pediatric rheumatology fellows revealed that although 61% agreed that a full comprehensive HEADSS assessment should be completed on all adolescent patients seen in the clinic, only 38% reported conducting a full HEADSS assessment *often* (Spitznagle et al., 2020). According to Spitznagle et al. (2020), lack of training and provider discomfort were cited as significant contributing factors to this disparity.

Many primary healthcare professionals attribute a lack of skill and confidence in obtaining adolescent histories, managing confidential care, and identifying mental health problems to limited training in residency (Borzutzky, 2021; Horwitz et al., 2015). A physician medical residency program director acquiesced, stating, “Soliciting information and counseling for high-risk behaviors all while establishing trust, maintaining privacy, and preserving autonomy is a learned ability that requires practice” (M. Huckabee, personal communication, June 15, 2021). Residency is an essential element in the professional growth of healthcare professionals as they transition between school and autonomous clinical practice (Accreditation Council for Graduate Medical Education [ACGME], 2021). The premise of both physician and nursing residencies is that responsibility for patient care is assumed under varying degrees of supervision with conditional independence over time, thereby allowing the resident an opportunity to gain the knowledge, skills, attitudes, and empathy required for autonomous practice (ACGME, 2021). “Practice patterns established during [residency] persist many years later” (ACGME, 2021, p. 3).

One promising approach to augment traditional education and increase opportunities for practice while in residency is the implementation of a program of standardized adolescent patient

(SP) communication simulation. An SP is a person who has been carefully coached to simulate an actual patient, not just the history but the body language, the physical findings, and the emotional and personality characteristics (Lioce et al., 2020). As noted within the literature, participation in simulated SP encounters has proven beneficial to physician and nursing residents' immediate and sustained ability and confidence in performing comprehensive adolescent psychosocial assessments. For example, a robust two group prospective randomized, double-blind study by Blake et al. (2000) demonstrated significantly higher mean scores for adolescent psychosocial inquiry on the pediatric Objective Structured Clinical Examination (OSCE) for 57 medical students who participated in a 90-minute SP adolescent interview with feedback ( $M = 68.06$ ,  $SD = 24.07$ ) as compared to those completing traditional clinical rotations alone ( $M = 55.71$ ,  $SD = 23.16$ ;  $p = .023$ ). Additionally, a quasi-experimental study by Fallucco et al. (2010) found that 52 physician medical residents who participated in a suicide risk assessment program which included lecture and SP simulation reported improved confidence and demonstrated greater knowledge in screening adolescents for suicide risk factors ( $M = 4.2$ ,  $SD = 0.4$ ;  $p < .025$ ) as compared to those who did not ( $M = 3.1$ ,  $SD = 0.7$ ;  $p < .025$ ). Furthermore, in a more recent publication, Joukhadar et al. (2016) determined in their two-group comparison study that 23 residents who had previously participated in structured SP adolescent training received a higher mean total-item score on the structured communication adolescent guide (SCAG) ( $M = 40.78$ ,  $SD = 7.04$ ) as compared to 29 residents who had not ( $M = 32.41$ ,  $SD = 10.12$ ;  $p = .001$ ). And finally, in an experimental, two-group post-test design, Luebbert and Popkess (2015) found that 18 nursing students who participated in a 100-minute SP simulation portraying a suicidal patient demonstrated greater scores in self-confidence in learning,  $t(17) = 2.74$ ,  $p = <.01$ , and

student satisfaction,  $t(17) = -6.20$ ,  $p = <.01$ , as compared to the 16 students who watched a recorded lecture alone.

Adolescent SP simulation has been successful in producing positive outcomes for both SPs and clinicians, and there is ample evidence to support the value of incorporating an adolescent SP simulation into residency programming to supplement the experiential learning currently achieved through clinical preceptorships (Gamble et al., 2016).

### **Problem Description in the Setting**

The pediatric tertiary care center where this quality initiative (QI) took place, serves 33,000 square miles of South Texas. Suicidal ideation and depressive disorder are among the top ten primary diagnoses in this geographical region for those aged 14 through 17 (Araiza & Stoker-Garcia, 2019). In 2019 the adolescent suicide rate in this region rose from 5.4 to 7.2 per 100,000, equating to 32 local lives lost (CDC, 2020). A community assessment noted mental health issues were among the most frequent primary and secondary diagnoses in the target population throughout all types of visits, and assessors recommended mental and behavioral health screenings at all points of contact with the organization (Araiza & Stoker-Garcia, 2019).

An appraisal of the organization's current screening processes revealed multiple areas for psychosocial documentation within the electronic health record (EHR), relying on nursing as the first point of contact. Nurses are to utilize either the Columbia-Suicide Severity Rating Scale for ED visits or the PHQ-9 for ambulatory visits. A cursory review of four EHR for patients between the ages of 11 and 18 admitted to a medical-surgical floor for one night revealed inconsistent psychosocial documentation within admission assessments and progress notes. Additionally, when queried, 53% of the organization's current physician and nursing residents were unsure or had not received prior education regarding the HEEADSSS framework. As a local leader in

pediatric health, the organization plays a pivotal role in the primary and secondary prevention of adolescent suicidality. Conversations with the directors of both the physician and nursing residency programs suggested that enrichment opportunities for adolescent psychosocial interviewing via SP simulation was warranted and welcomed.

### **Project Purpose and Aims**

The overall purpose of this interdisciplinary QI was to pilot an SP program, informed by the HEEADSSS interviewing process, within the physician and nursing residencies of a South Texas pediatric tertiary care center to improve the early identification of modifiable risk factors of suicidality among adolescent patients. In relation to the Essentials of Doctoral Education for Advanced Nursing Practice, the implementation of this QI satisfied DNP Essential VI: Interprofessional Collaboration for Improving Patient and Population Health Outcomes and AONL Nurse Executive Competencies for Population Health: Communication and Relationship Building. This was accomplished through the establishment of a multispecialty team to research, develop, and execute an interdisciplinary training program which promoted effective and candid communication with adolescent patients.

### ***Specific Aims***

Four specific aim statements were founded to determine the success of the interdisciplinary QI. The first aim was to immediately improve participants' confidence in clinical communication skills by 20%, as measured by their mean self-efficacy scores on the self-efficacy twelve questionnaire (SE-12) (Appendix A) and to sustain a minimum 10% increase four weeks following the conclusion of the pilot. The second aim was to improve participants' clinical competence in performing comprehensive psychosocial interviews by 25% as measured by their mean total-item scores on the Structured Communication Adolescent Guide (SCAG)

from the initial to the subsequent SP patient encounter. The third aim for this QI was to improve physician and nursing residents' self-reported performance of a full HEEADSSS assessment with adolescent patients either *frequently* or *almost always* by 25% at four weeks following the conclusion of the pilot as measured on a 5-point Likert scale. And the fourth and final aim for this QI was to increase the mean number of mental health referrals to the social work department for patients 11-21 years of age presenting with a non-mental health related chief complaint by 5% by the fourth week following the last simulation session. The assumption is that an increase in social work referrals would indicate an increase in the identification of modifiable risk factors.

### ***Guiding Clinical Questions***

The four clinical questions this QI sought to answer were: Following participation in a two-hour adolescent interviewing simulation program with standardized patient feedback and guided reflection, will physician and nursing pediatric residents:

- 1) report an immediate and sustained increase in self-confidence in communicating with adolescents;
- 2) demonstrate greater proficiency in conducting a comprehensive adolescent psychosocial interview;
- 3) utilize the HEEADSSS screening framework more routinely in clinical practice; and
- 4) identify modifiable risk factors in adolescents presenting to the organization for diagnosis other than those related to mental or behavioral health more frequently?

### **Guiding Frameworks**

#### ***Conceptual Framework***

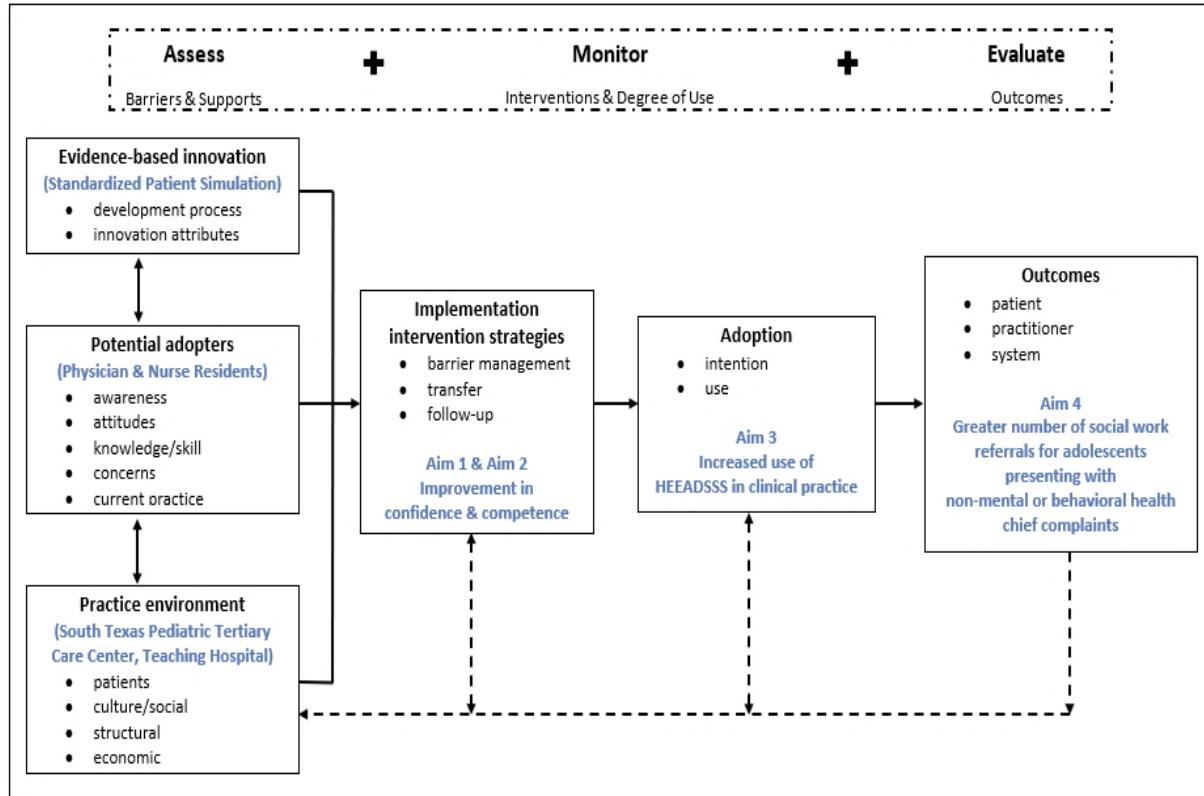
The revised Ottawa Model of Research Use (OMRU), developed by Logan and Graham (1998) and illustrated in Figure 1, informed the planning, implementation, and evaluation

strategies of this QI project. The OMRU is a planned action theory which views the adoption of innovation as a deliberately planned process to guide the translation of knowledge into practice while considering the impact of external societal and healthcare environments (Graham & Logan, 2004; Shojania et al., 2004). The framework's six key constructs, evidence-based innovation, potential adopters, practice environment, implementation strategies, adoption, and outcomes, are interconnected through processes of assessment of barriers and supports, monitoring of implementation, and evaluation of outcomes (Graham & Logan, 2004).

Graham and Logan further divided these concepts into six steps to serve as a practical template for the application of the OMRU in their 2004 revision. These steps included 1.) Getting started, 2.) Clarifying the innovation, 3.) Assessing the innovation, potential adopters, and the practice environment for barriers and supports, 4.) Selecting and monitoring the implementation interventions, 5.) Monitoring the adoption, and 6.) Evaluating the outcomes (Graham & Logan, 2004). While all the proposed steps were utilized in the execution of this QI, the assessment of barriers and supports within the practice environment via strengths, weaknesses, opportunities, and threats (SWOT) and force-field analysis played an integral role in ensuring the successful implementation of the pilot program through the development of mitigating strategies. These included seeking out professional development and mentoring opportunities for simulation staff, integrating the project into current simulation schedules, and leveraging volunteer services.

**Figure 1**

*Adaptation of the Revised Ottawa Model of Research Use*



Note: Adapted from “Innovations in Knowledge Transfer and Continuity of Care” by I. D.

Graham and J. Logan, 2004, *Canadian Journal of Nursing Research*, 36(2), p. 94.

### **Theoretical Framework**

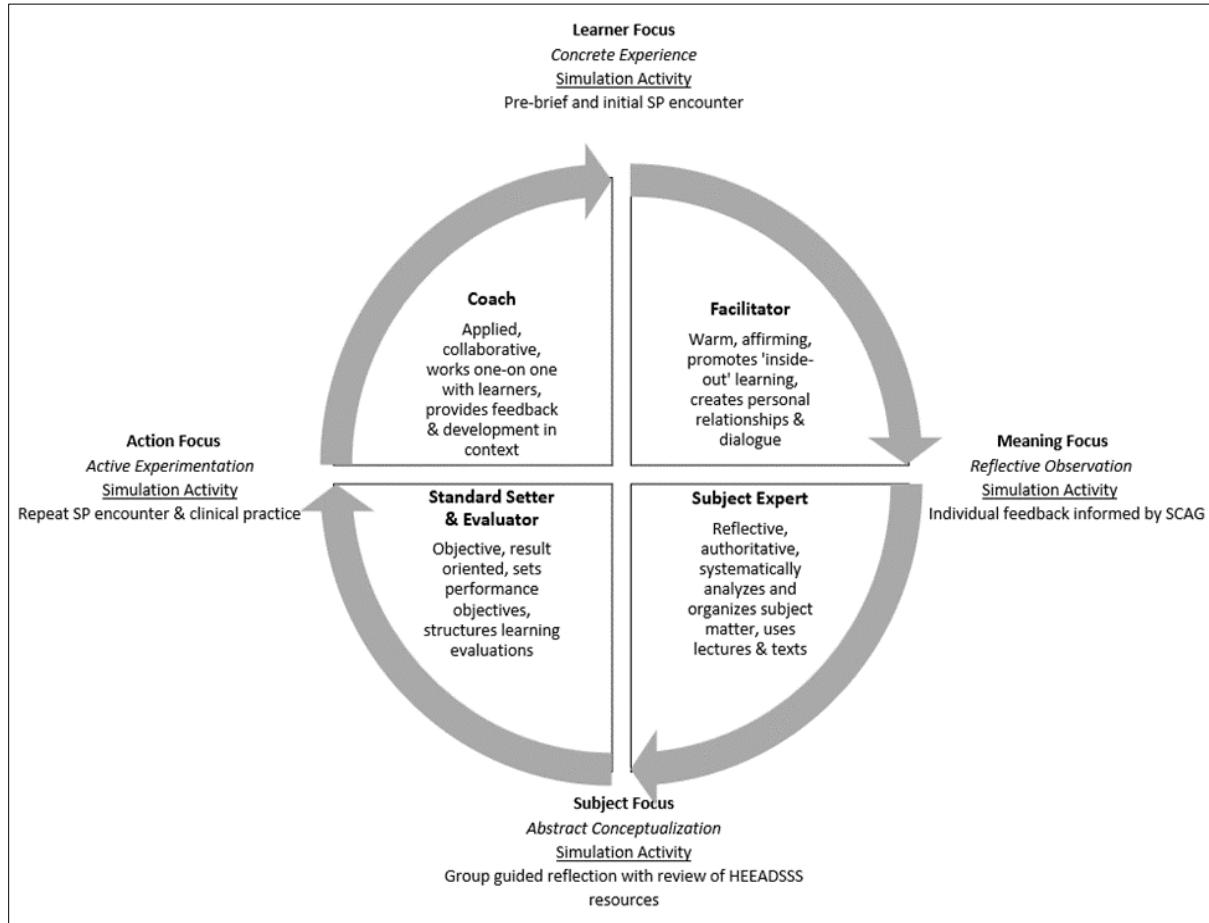
A secondary framework, Kolb's Experiential Learning Theory (ELT), specifically Kolb and Kolb's (2017) application of dynamic educator roles to the learning cycle, was employed to support the educational methodology within this pilot program. The ELT depicts a cyclical learning process initiated by a concrete experience. Learning occurs by reflecting and considering differing perspectives of the concrete experience, followed by an abstract conceptualization of the meaning of the experience, leading to active experimentation (Institute for Experiential Learning, 2021). In Kolb and Kolb's application of teaching around the learning cycle, as the learner progressed through each of the phases, the role of the educator also

progressed from facilitator to subject expert, then standard setter and evaluator, and finally coach (Kolb & Kolb, 2017).

Poore et al. (2014) noted that Kolb's ELT is a useful framework for guiding simulation-based interprofessional programs as experiential learning activities, such as SP encounters, offered students a method for developing and adapting new knowledge, skills, and attitudes (KSA) to individual practice in a safe environment. As illustrated in Figure 2, the adolescent SP simulation lesson plan, with corresponding educator activities, was developed to reflect the phases of the experiential learning cycle to assist in the acquisition of KSAs related to adolescent psychosocial assessment.

**Figure 2**

*Simulation Activities/Roles Applied to Kolb's Experiential Learning Cycle*



Note: Adapted from "Experiential learning theory as a guide for experiential educators in higher education" by A.Y. Kolb and D.A. Kolb, 2017, *Experiential Learning & Teaching in Higher Education*, 1(1), pg. 18. Copyright 2017 by Southern Utah University Press & Design.

## METHODS

### Ethical Considerations

Prior to initiating the QI, the project was reviewed and determined to not meet the definition of research involving human subjects by the Texas A&M University IRB- Corpus Christi Institutional Review Board (Appendix B). Additional measures were instituted to protect the rights and confidentiality of both resident participants and SPs, which included a

confidentiality and video consent agreement and an opt-out clause, without explanation, for any simulated scenario which made the SP or resident uncomfortable. And finally, a letter of support was provided by the chief nursing officer of the organization, agreeing to fully support the project and approve access to protected health information (Appendix C).

### **Project Design**

A one-group, pretest-posttest design was utilized to pilot the effectiveness of an adolescent SP simulation program informed by the HEEADSSS interviewing process to improve physician and nursing residents' performance of comprehensive psychosocial assessments and early identification of modifiable risk factors of suicidality among adolescent patients within a South Texas pediatric healthcare organization. The freestanding tertiary care center included a full-service, 191-bed teaching hospital affiliated with 34 colleges & universities across the United States and featured diverse physician and nursing residency programs dedicated to academics and evidence-based practice. Historically, the simulation center had been utilized independently by each residency program for pediatric emergency response and psychomotor task training, with a limited number of interprofessional mock code simulations occurring in situ. Communication-based activities employing SPs entailed a new and unfamiliar methodology for the simulation center. However, organizational leaders and residency program coordinators were enthusiastic and supportive of the initiative, granting valuable human resources to the project to promote its success. While the explicit purpose of the initiative was to improve the early identification of modifiable risk factors of suicidality among adolescent patients through enhanced communication techniques, the interdisciplinary component of the SP pilot also served to achieve organizational goals and accreditation requirements to bolster interprofessional learning opportunities.

All 47 physician and 26 nursing residents were free to take part in the adolescent SP psychosocial interviewing pilot simulation program regardless of their tenure or specialty concentration. The physician residents were either in the first, second, or third year of their professional residency, also referred to as post-graduate year (PGY). The nursing residents were hired into the June 2021, September 2021, or January 2022 cohort. While most nursing residents were newly licensed registered nurses, a few had not taken their licensing exams and were still considered graduate nurses.

A convenience sampling method was employed for resident participation in the adolescent SP simulation program. The physician medical residency coordinator assigned participants to simulation sessions based on their scheduled availability. This resulted in some individuals having multiple opportunities to attend the simulation while others had none. However, attendees only participated in the simulation program once. Additionally, the nursing residency coordinator randomly assigned a proportional number of nursing residents to each of the sessions and groups, irrespective of their corresponding cohort. Forty-five total physician and nursing residents participated in the SP simulation program for a 62% participation rate.

## **Intervention**

### ***Project Team***

The core multidisciplinary clinical project team consisted of 1.) myself, a DNP candidate and nursing professional development specialist, as project lead, 2.) a licensed clinical social worker (LCSW) specializing in pediatric behavioral health serving as a clinical expert, 3.) a medical doctor in her second year of pediatric physician residency with a concentration in adolescent health, acting in the capacity of clinical consultant, and 4.) a local baccalaureate nursing student with interest in pediatric mental health aiding in administrative and logistical

support. Together the team reviewed resources, developed learning materials, established realistic scenarios, trained standardized patients, conducted simulation sessions, recorded, and analyzed data, monitored project implementation, and evaluated participant feedback.

### ***Standardized Patients***

A pool of adolescent and guardian SP was established through collaboration with a local university, the organization's volunteer services department, and simulation center faculty. All SPs were over the age of 18 and were volunteers; therefore, no additional consents or contracts aside from confidentiality and video consent were required. To prepare, SPs portraying adolescents attended a four-hour training workshop prior to the initiation of the psychosocial interviewing simulation activity. The workshop was formatted utilizing the Association of Standardized Patient Educators (ASPE) Standards of Best Practice (Lewis et al., 2017). During the workshop, SP volunteers learned and practiced four adolescent roles adapted from scenarios publicly available through MedEdPORTAL (Appendix D) and were taught how to assess performance and provide constructive feedback to participants utilizing the SCAG (Woods et al., 2012).

### ***Scheduling***

To support the possibility of all 73 residents attending the pilot simulation program with the allotted resources, six adolescent simulation activities were scheduled every other week over the course of three months, February through April 2022. Due to scheduling conflicts two activities had to be scheduled in consecutive weeks, as illustrated in Figure 3. Each session was three hours in length and provided accommodation for twelve seats per session. Each session was divided into two groups of six and assigned staggered start times approximately 40 minutes apart, as shown in Figure 4.

**Figure 3**

#### *Data Collection, Implementation, and Evaluation Timeline*

**Figure 4**

*Simulation Session Schedule*

Group 1		Group 2
1400	Pre-brief	
1405	Initial Encounter: Taylor Rm1A Rm2A Rm3A	
1410	Initial Private Debrief and SCAG	
1415		
1420		
1425	Initial Encounter: Jaime Rm1B Rm2B Rm3B	
1430		
1435	Initial Private Debrief and SCAG	Pre-brief
1440		Initial Encounter: Taylor Rm1A Rm2A Rm3A
1445		Initial Private Debrief and SCAG
1450		Initial Encounter: Jaime Rm1B Rm2B Rm3B
1455	Facilitated Group Debrief with Initial SCAG and Review of Self-Study	Initial Private Debrief and SCAG
1500		
1505		
1510		
1515		
1520		
1525	SP BREAK	SP BREAK
1530		
1535	Sub. Encounter: Chris Rm1A Rm2A Rm3A	
1540		
1545	Initial Private Debrief and SCAG	Facilitated Group Debrief with Initial SCAG and Review of Self-Study
1550		
1555	Sub. Encounter: Kelley Rm1B Rm2B Rm3B	
1600	Follow-up Private Debrief	
1605		
1610		
1615	Post SE Survey	Sub. Encounter: Chris Rm1A Rm2A Rm3A
1620		Initial Private Debrief and SCAG
1625		
1630		
1635		Sub. Encounter: Kelley Rm1B Rm2B Rm3B
1640		Follow-up Private Debrief
1645		
1650		
1655		Post SE Survey

## **Teaching/Learning Plan**

**Prerequisite Assignment and Pre-brief.** To prepare physician and nursing residents for their scheduled adolescent interviewing simulation, a pre-brief which included prerequisite education, was emailed seven, three, and one day(s) preceding the event with instructions to review prior to arrival. The forty-five-minute self-study module included links to a one-page HEEADSSS job aid with examples of open-ended questions, a power point detailing laws and guidelines for adolescent confidentiality in Texas, a model adolescent psychosocial interview video demonstration published by the Western Australian Clinical Training Network (2016), and Doukrou and Segal's article, "Fifteen-minute consultation: Communicating with young people—How to use HEEADSSS, a psychosocial interview for adolescents" (2018).

Upon arrival at the simulation center, the scheduled participants were briefed again, utilizing a script to establish psychological safety and expectations for the encounter. The resident group was then divided into nurse-physician pairs, or if no nurse was available, a PGY1 was paired with a PGY2 or PGY3. Each member of the resident pair was provided with two fictitious patient vignettes to review prior to entering the exam room, either *Taylor Smith* and *Chris Donaldson* or *Jaime Amari* and *Kelley Parker*. The vignettes introduced a brief history of present illness for the fictitious patients the SPs would be portraying in the exam room.

**Initial SP Encounter.** Each participant pair was randomly assigned to one of three exam rooms where an adolescent-guardian SP pair awaited them. The fictitious patient *Taylor*, portrayed simultaneously by all three SP adolescent-guardian pairs, was the first on the schedule. The physician or nursing resident assigned to that patient was allotted ten minutes to conduct a full psychosocial interview using any resources necessary. The second resident in the pair, assigned the fictitious patient *Jaime*, was directed to have a seat in the back of the exam room

and observe the encounter. In the event a guardian SP was asked to exit the exam room for confidentiality, they were directed to join the resident observer in the rear of the exam room. A cue was provided at the eight-minute mark to allow the physician or nursing resident conducting the interview an opportunity to conclude the conversation.

Following the ten-minute interview, adolescent-guardian SP pairs were allotted three minutes to individually evaluate the encounter and seven minutes to engage in constructive verbal feedback with the resident utilizing the SCAG as a guide. Guardian SPs were directed to allow the adolescent SPs to guide the debrief and supplement where appropriate. Following the individual debrief, the process was repeated for the second resident in the pair with the next fictitious patient on the schedule, *Jaime*.

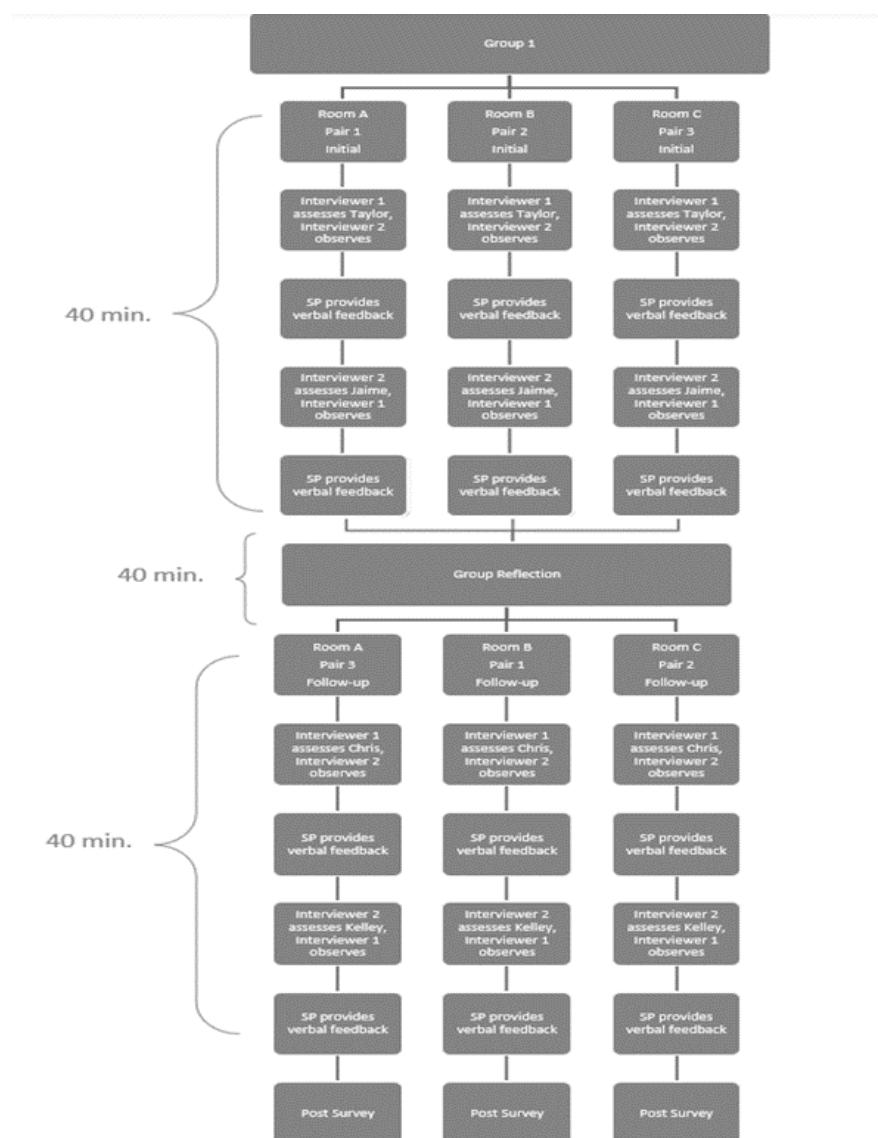
**Guided Group Reflection.** Following the initial encounter, all three physician-nurse or physician-physician resident pairs were provided a carbon copy of their individual SCAG results and reconvened as a large group in the simulation classroom for a forty-minute group reflection guided by the project team's content expert or clinical consultant. Decker's Facilitator's Tool for Guided Reflection (2007) was provided to the clinical experts to use as a template for the discussion. To maximize resources and provide ample opportunity for participation, while the first group shared in guided reflection, the second group of six physician and nursing residents were briefed and proceeded to interview fictitious patients *Taylor* and *Jaime*, in a repeated process.

**Subsequent SP Encounter.** Following group guided reflection, the physician-nursing or physician-physician resident pairs were escorted to new exam rooms where a different set of adolescent-guardian SPs awaited them. The interview and debrief process was repeated with the next two fictitious patients on the schedule, *Chris* and *Kelley*. This follow-up strategy was

utilized to preserve the sense of unfamiliarity one might feel meeting an adolescent patient for the first time. At the completion of their two-hour simulation activity, each physician or nursing resident had directly performed two and observed two adolescent psychosocial interviews with SP feedback for a total of four encounters. Figure 5 provides an illustration regarding the flow of participants through the simulation.

**Figure 5**

*Participant Flow through Simulation Session*



## **Data Collection**

The data collection, implementation, and analysis timeline commenced with the distribution of a baseline survey to gather demographic data, history of HEEADSSS education and use, and preliminary SE-12 scores. Response options regarding the current utilization of the HEEADSSS framework in practice were based on a five-point Likert scale (1=*Never*, 2=*Rarely*, 3=*Occasionally*, 4=*Frequently*, and 5=*Almost Always*). The survey was delivered to all physician and nursing residents via a Qualtrics link utilizing organizational email. The link was active for four weeks, and the project team sent numerous completion reminders to participants.

A second SE-12 was administered to participants through Qualtrics via a QR code immediately following the completion of the SP simulation activity, along with a general simulation satisfaction survey. A final Qualtrics survey consisting of the SE-12 and self-reported use of the HEEADSSS assessment in clinical practice was distributed via organizational email to all residents on week 19 of project implementation which corresponded approximately to the fourth week following completion of the adolescent psychosocial interviewing pilot. It was intended to measure sustainment of confidence and increased use of the HEEADSSS framework in practice. This link was active for two weeks, and the project team sent two completion reminders to participants.

To collect data regarding each physician or nursing resident's performance in the adolescent psychosocial interview utilizing the HEEADSSS framework, adolescent and guardian SPs were directed to independently evaluate the initial and subsequent encounters on a carbon copy of the SCAG. Raw data from each of the 33 items, global scores, and free text sections were transcribed to a password-protected Excel spreadsheet by the project leader and assistant.

Finally, the organization's information technology decision support team provided a report of all social work referrals from August 1, 2021, through May 22, 2022. The report was filtered by status, provider, age, chief complaint, and referral reason (Appendix E) to quantify the number of weekly mental or behavioral health-related referrals to the social work department for adolescent patients (11-21 years) presenting with a non-mental health-related chief complaint.

## **Measurement Tools**

### ***Self-Efficacy 12***

The project team utilized an adaptation of the Self-Efficacy 12 (SE-12) (Appendix A), a questionnaire measuring the self-efficacy of healthcare professionals' communication skills, to evaluate physician and nursing resident self-confidence (Axboe et al., 2016). Wolderslund et al. (2021) note that self-efficacy is a commonly used outcome measure for training in communication. As cited by Wolderslund et al. (2021), Bandura defined self-efficacy as "an individual's confidence in own ability to succeed in specific situations or accomplish a specific task." The SE-12 questionnaire consists of 12 items assessing general clinical communication based on the Calgary-Cambridge Guide (Axboe et al., 2016), which is a widely utilized framework to teach patient-centered communication skills in medical schools (Wolderslund, 2021). Responses were recorded on a 10-point response scale ranging from 1 (*very uncertain*) to 10 (*very certain*). With the author's permission (Appendix F), the instrument was adapted to refer specifically to the adolescent patient.

**Reliability and Validity.** Axboe et al. (2016) reported uni-dimensionality with high correlations as well as a Cronbach's  $\alpha$  of 0.95 and Loevinger's H coefficient of 0.71. Test-retest reliability was reported as 0.71 (Axboe et al., 2016). Wolderson et al. (2021) further

substantiated the validity of the SE-12 by documenting strong agreement between participant self-efficacy, observer ratings, and standardized patient ratings.

### ***Structured Communication Adolescent Guide***

A second tool, the Structured Communication Adolescent Guide (SCAG), was utilized by SPs to evaluate participants' ability to perform a comprehensive psychosocial interview (SCAG, 2017). The 33-item checklist derived from the Calgary Cambridge Observation Guide is available on the author's website and is free to use in practice (Blake, 2020). The SCAG has been successfully adopted by several schools for undergraduate teaching and is presented in Nelson's Essentials of Pediatrics (Blake, 2008). It consists of four sections, including introduction, gathering information, teen alone, and wrap up. Each section has a global score based on an alphabetic scale with A = *Excellent* (10), B = *Good* (7.5), C = *Average* (5), D = *Poor* (2.5), and F = *Fail* (0), with a maximum total global score of 40. Additionally, each of the 33 items on the checklist may be given a score of 0 (*did not ask*), 1 (*asked*), or 2 (*asked well*) for a maximum total-item score of 66. An example of one the items was "Encouraged me to speak by asking questions other than ones with a yes/no answer."

**Reliability and Validity.** Neither Cronbach's  $\alpha$  nor Loevinger's H coefficient were available for the SCAG. However, based on evaluations of 42 video-taped interviews by four female adolescents, Dogbey (2014) reported an inter-rater reliability of SCAG total scores of 0.94 when global ratings were excluded, 0.85 with global ratings alone, and a criterion validity, intraclass correlation coefficient of 0.78. Similar reliability, around 0.85, was noted in a later study where 183 junior-high adolescents were asked to score a video-taped SP encounter with a physician (Dogbey, 2014). Additionally, investigators reported 80% or higher agreement

between professional psychologist scores and those of the participating adolescents (Dogbey, 2014).

## Data Analysis

An *a priori* power analysis using the G\*Power 3.1 statistical power analysis program (Faul et al., 2007) determined a minimum sample size of 27 participants was necessary to generate a statistically significant result with moderate effect ( $f^2 = .15$ ) for the QI design at the .80 level given  $\alpha = .05$ . Individual scores and responses for the SE-12, SCAG, and self-reported use of the HEEADSSS mnemonic were collected over time, matched via participants' unique identification number, and analyzed utilizing JASP statistical software.

Measures of central tendency and frequency were calculated for descriptive data and reported by discipline. Initial and follow-up total item SCAG scores were aggregated, and a one-tailed paired *t*-test was performed to establish the existence of a positive change in performance. Individual mean SE-12 scores were calculated at baseline, immediately following the activity, and at week 19. Two one-tailed paired *t*-tests were utilized with individual SE-12 scores and included baseline compared to immediate post and baseline compared to week 19. A Cohen's *d* value as a measure of effect size was calculated in the analyses of the SCAG and SE-12 results. Results for HEEADSSS use in practice were codified where 1= *never or rarely*, 2= *occasionally*, and 3= *frequently or almost always*. The Wilcoxon Signed-Rank Test was used to analyze data to determine statistical and clinical significance, a Rank-Biserial Correlation was calculated to determine effect size, and frequencies for each of the three categories were calculated and compared at baseline and week 19 to determine any change in reported use. The difference in mean initial and follow-up SCAG, SE-12, and HEEADSSS use scores were divided by initial scores to determine a percent change.

The mean number of weekly referrals to the social work department for adolescent patients presenting with a non-mental health-related chief complaints was analyzed utilizing an I-control chart. The upper and lower control limits were set at three standard deviations from the center line and fixed starting at implementation week 5. The remaining weekly data following simulation implementation was plotted on the control chart and analyzed for any special cause patterns or shifts in the center line.

## RESULTS

### **Implementation**

This QI project was conducted over the course of five months in early 2022 within the newly renovated 2,000-square-foot simulation center of a 191-bed freestanding South Texas pediatric tertiary care center. Rising numbers of mental and behavioral health concerns within the adolescent community affirmed the need for the simulation center to offer communication-based programming despite unfamiliarity with SP methodology and resource exigencies. As the first months of the year are historically less active for the simulation lab, this was an opportune time to implement a project of this scale.

The schedule of six simulation activities began on February 11 and were conducted every two weeks to align with the existing medical residency simulation schedule, although one date had to be rescheduled due to a room conflict. While participation in the program was highly encouraged by residency coordinators, attendance in a session was not compulsory and attendance rates ranged from 75% to 33%. For those who missed their scheduled session, opportunities to attend the remaining simulations were offered to support participation.

One guardian and four adolescent SPs recruited from the theatre department of a local university participated in SP training during the last week of January. The second group of two

hospital volunteers attended SP training in early February. Unfortunately, one SP hospital volunteer could not attend any of the formal training sessions and instead reviewed the training materials electronically and observed the first simulation activity portrayed by the theatre students. The remaining guardian SPs, comprised of simulation center faculty, did not undergo any formal training due to their previous experience and limited role in the activity. Instead, these individuals received just-in-time training on the day of the simulation. Although not part of the original project plan, they were asked to complete a SCAG along with adolescent SPs to aid in evaluation and feedback delivery.

Participants were divided into either nurse-physician or physician-physician pairs and randomly assigned one of three exam rooms to conduct their psychosocial interview. The intention was to pair a nursing or physician resident with minimal clinical experience with a second- or third-year physician resident who had more. Each resident was provided two fictitious charts and SCAG tools, either Taylor and Chris or Jaime and Kelley, upon which they entered their identification number to be used for data matching after the activity. Upon entering the exam room, the resident handed the appropriate SCAG tool to the SP pair but retained the second patient's SCAG for the follow-up encounter.

Following initial interviews and individual positive and constructive feedback, all three groups of nurse-physician or physician-physician resident pairs gathered in the classroom with their carbon-copied SCAGs to participate in a 40-minute guided reflection facilitated by one of the team's clinical experts. If resident attendance was low for the second session, meaning SP pairs would not be engaged in any interviewing, they were invited to join in the group reflection. The expert facilitators followed Decker's Facilitator's Tool for Guided Reflection (2007) loosely, opting for a more organic dialogue to encourage participants to clarify specific questions

that arose during the encounter and to allow those with more experience to share clinical practice pearls in relation to communicating with adolescents.

After group reflection, the nurse-physician or physician-physician pairs rotated to different exam rooms and repeated the process with the second set of fictitious patients. All encounters were recorded and saved on the simulation center's audio-visual server, with the option for participants to request their own recording for personal review; however, no requests were received. Following the second round of interviews with SP facilitated feedback, residents were free to leave after completing a follow-up SE-12 and satisfaction survey.

The project team gained insight from the SPs through informal post-activity debriefs, which allowed the group to improve the course of the next scheduled activity. For instance, it was determined that a formal three-minute period of silence was necessary to allow the adolescent an opportunity to thoughtfully complete the SCAG tool. Additionally, the SPs felt that it was intimidating to the nurses and first-year residents to follow an experienced clinician and that their communication was less genuine, so it was decided that the resident with the least experience would be asked to conduct the first initial and follow-up interviews. And lastly, it was noted that when the first participant interviewers were provided their carbon-copied SCAGs immediately following their encounter, they were less attentive to their peer's adolescent interaction. To remedy this and assist participants in taking full advantage of the learning opportunity afforded them through observation, carbon copies were held until the guided group discussion.

### **Participant Characteristics**

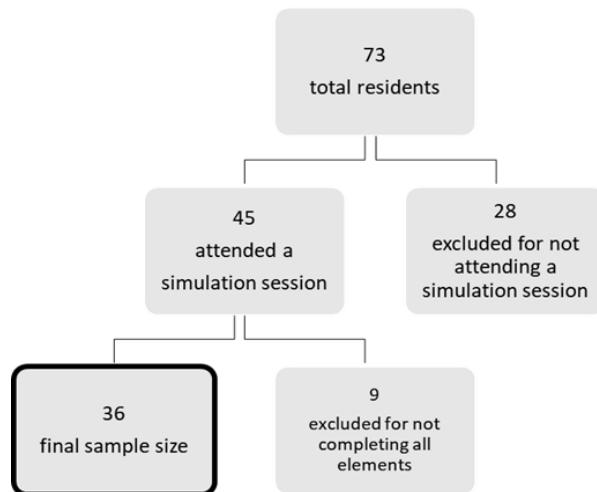
Of the 45 physician and nursing residents who attended a simulation, one participant had to defer the follow-up encounter due to illness, one participant signed in late and observed only,

four did not complete the baseline survey, and three others did not complete the immediate post-survey, resulting in a final sample size of 36 as noted in Figure 6. Based on the previously described power analysis, this sample size was appropriate for examining differences between mean scores.

Participants' ages ranged from 22 to 52 years ( $M = 31.9$ ,  $SD = 7.0$ ) and they identified as female ( $n = 23$ , 64%) or male ( $n = 13$ , 36%). Additionally, participants described their ethnicity as Hispanic, Latino, or Spanish Origin ( $n = 12$ , 33%), Black or African American ( $n = 8$ , 22%), Asian ( $n = 6$ , 17%), or White ( $n = 5$ , 14%), with five participants identifying with two or more ethnicities or Other ( $n = 5$ , 14%). Nurses reported their educational preparation as Associates Degree of Nursing ( $n = 9$ , 64%) or Bachelor of Science in Nursing ( $n = 5$ , 36%), and physicians reported educational preparation as Doctor of Medicine ( $n = 21$ , 95%), or Doctor of Osteopathic Medicine ( $n = 1$ , 5%). When queried about previous education regarding the HEEADSS interview, 47% ( $n = 17$ ) had received prior education, 39% ( $n = 14$ ) had not, and 14% ( $n = 5$ ) were not sure. Further delineation of demographics per discipline are noted in Table 1.

**Figure 6**

*Participant Exclusion Criteria*



**Table 1***Participant Demographics*

	<b>Physician</b>	<b>Nursing</b>	<b>Total</b>
<b>Number of Residents</b>	22	14	<b>36</b>
<b>Age</b>			
Mean (SD)	34.9 (6.7)	27.3 (4.4)	<b>31.9 (7.0)</b>
<b>Gender</b>			
Female	12 (55%)	11 (79%)	<b>23 (64%)</b>
Male	10 (45%)	3 (21%)	<b>13 (36%)</b>
<b>Ethnicity</b>			
Asian	5 (23%)	1 (7%)	<b>6 (17%)</b>
Black or African American	8 (36%)	0 (0%)	<b>8 (22%)</b>
Hispanic, Latino or Spanish origin	5 (23%)	7 (50%)	<b>12 (33%)</b>
White	3 (14%)	2 (14%)	<b>5 (14%)</b>
Two or more ethnicities or Other	1 (4%)	4 (29%)	<b>5 (14%)</b>
<b>Education</b>			
Doctor of Medicine (MD)	21 (95%)		
Doctor of Osteopathic Medicine (DO)	1 (5%)		
Associate Degree in Nursing (ADN)		9 (64%)	
Bachelor of Science in Nursing (BSN)		5 (36%)	
<b>Previous Yrs. Healthcare Experience</b>			
None	7 (32%)	7 (50%)	<b>14 (39%)</b>
0-3 Years	4 (18%)	3 (21%)	<b>7 (19%)</b>
4-9 Years	7 (32%)	2 (14%)	<b>9 (25%)</b>
10+ Years	4 (18%)	2 (14%)	<b>6 (17%)</b>
<b>History of HEEADSSS Education</b>			
No	6 (27%)	8 (57%)	<b>14 (39%)</b>
Unsure	1 (5%)	4 (29%)	<b>5 (14%)</b>
Yes	15 (68%)	2 (14%)	<b>17 (47%)</b>
<b>Physician Post Graduate Year</b>			
PGY-1	11(50%)		
PGY-2	7 (32%)		
PGY-3	4 (18%)		
<b>Time in Nurse Residency</b>			
0-2 months		8 (57%)	
3-5 months		3 (21%)	
6-8 months		3 (21%)	

## **Outcomes**

Results reported on the SE-12, as shown in Table 2, and illustrated in Figure 7, indicated a significant increase in participants' self-confidence in adolescent communication immediately following the SP simulation ( $M = 8.45, SD = 0.85$ ) compared to their baseline ( $M = 7.68, SD = 1.23$ ),  $t(35) = -4.29, p = <.001$ . A medium effect size ( $d = -0.72$ ), suggests that participants completing the adolescent psychosocial interviewing simulation tended to report 72% of a standard deviation increase in self-efficacy resulting in an immediate 10% increase in self-efficacy overall. The follow-up survey on week 19 revealed not only sustainment, but an additional increase in self-efficacy ( $M = 8.64, SD = 0.65$ ),  $t(10) = -5.94, p = <.001$  with a large effect size ( $d = -1.79$ ). This resulted in an overall 13% increase in self-efficacy communicating with adolescents from baseline.

Also as noted in Table 2 and Figure 8, differences in total-item scores for the pre- and post- SCAGs completed by adolescent SPs revealed significant improvement in participants' performance of the HEEADSSS interview from the initial ( $M = 50.42, SD = 7.60$ ) to the follow-up interview ( $M = 55.83, SD = 7.58$ ),  $t(35) = -3.37, p = <.001$ . A medium effect size was noted for this change also ( $d = -0.56$ ) suggesting a 56% of a standard deviation increase in performance resulting in an 11% increase overall. Because there was up to a ten-point variation between adolescent and guardian SCAG scores and given the fact that many of the guardian SPs had not received formal training on its use, guardian SCAG scores were not included in the data analysis. Additionally, SPs were inconsistent in assigning a global rating score on the SCAG, so those were dropped from the analysis as well. Because prior studies reported an inter-rater reliability of 0.94 when global ratings were excluded, it was determined this approach would not compromise SCAG results.

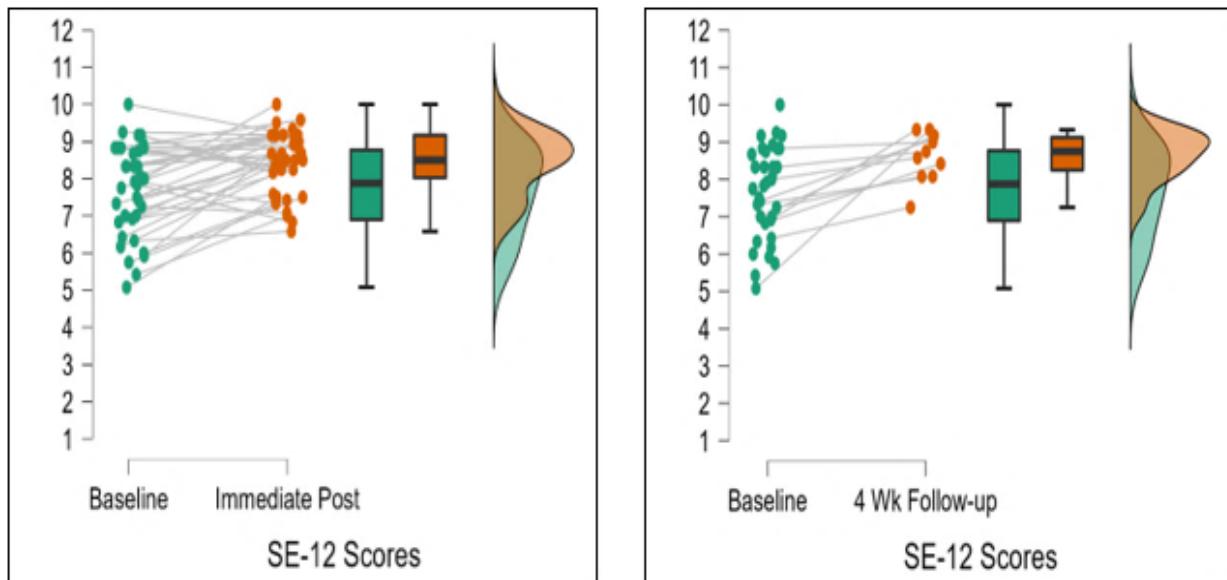
The incidence of residents self-reporting the use of HEEADSSS in clinical practice either *frequently* or *almost always* increased 17% from 47% at baseline to 64% at week 19. A Wilcoxon Signed-Rank test indicated that the mean rank change from baseline ( $M = 2.16$ ) to week 19 ( $M = 2.55$ ) was significant,  $Z = -2.023$ ,  $p = 0.02$ , with a large effect size ( $rrb = -1$ ) as noted in Figure 9 and Table 3. It is important to note that week 19 survey results were limited related low participant response.

And finally, a report was generated for all social work (SW) referrals beginning August 1, 2021, through May 22, 2022. Exclusion criteria filtered out irrelevant referrals, focusing only on psychosocial concerns generated by residents for adolescents presenting to the organization with a non-mental or behavioral health related chief complaint. The number of baseline SW referrals, August 1 to February 5, were plotted on a run chart with establishment of center line ( $M = 1.22$ ) and upper ( $3\sigma = 3.62$ ) and lower ( $3\sigma = -1.18$ ) limits. After fixing these baseline indicators, weekly referrals from February 6 through May 22, were plotted and analyzed for any special cause variation. Notably, five data points fell outside of the upper control limit and the center line shifted ( $M = 2.31$ ), indicative of an increase in the identification of adolescents who may benefit from speaking with a social worker related to potential modifiable risk factors as illustrated in Figure 10.

**Table 2***Paired Samples t-Test*

<b>Measure</b>	<b>Mean (SD)</b>	<b>t</b>	<b>df</b>	<b>p</b>	<b>Cohen's d</b>	<b>% Change</b>
Baseline SE-12	7.68(1.23)	-4.29	35	< .001	-0.715	10%
Immediate Post SE-12	8.45(0.85)					
Baseline SE-12	7.68(1.23)	-5.94	10	< .001	-1.791	13%
4 Wk Follow-up SE-12	8.64(0.65)					
SCAG Initial	50.42(7.60)	-3.37	35	< .001	-0.562	11%
SCAG Follow-up	55.83(7.58)					

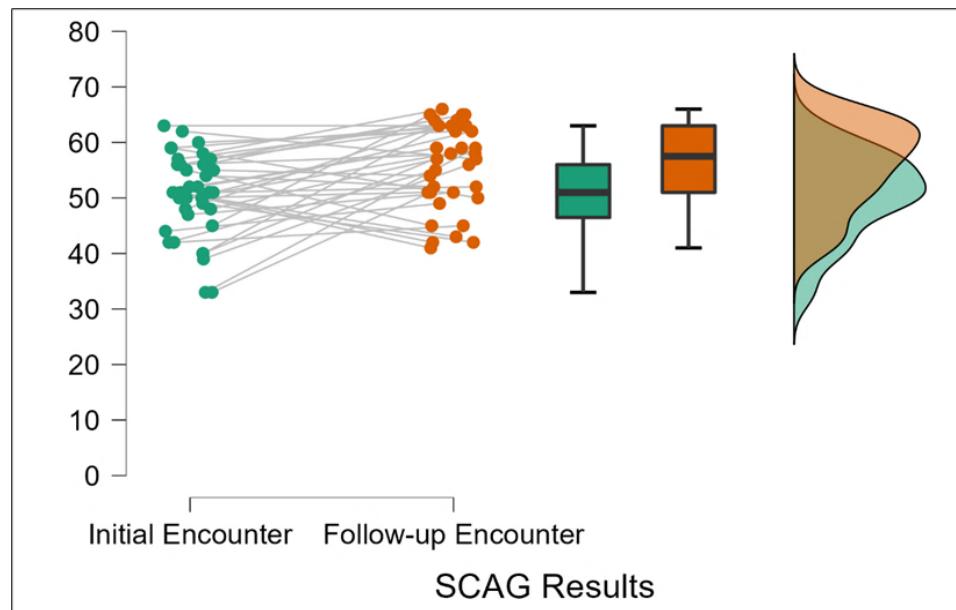
*Note.* Student's t-test. For all tests, the alternative hypothesis specifies that Measure 1 is less than Measure 2. For example, Baseline SE-12 is less than Immediate Post SE-12.

**Figure 7***Immediate and Sustained Mean Self-Efficacy-12 Scores*

*Note.* JASP Team (2022). JASP (Version 0.16.1) [Computer software].

**Figure 8**

*Total Item Scores on Structured Communication Adolescent Guide*



*Note.* JASP Team (2022). JASP (Version 0.16.1) [Computer software].

**Table 3**

*Wilcoxon Signed-Rank Test*

Measure	Mean (SD)	z	p	Rank-Biserial Correlation	% Change
Baseline HEEADSSS USE	2.16 (0.88)	-2.023	0.024	-1.0	17%
4 Wk Follow-up HEEADSSS USE	2.55 (0.69)				

*Note.* For all tests, the alternative hypothesis specifies that Baseline HEEADSSS USE is less than 4 Wk Follow-up HEEADSSS USE.

**Figure 9**

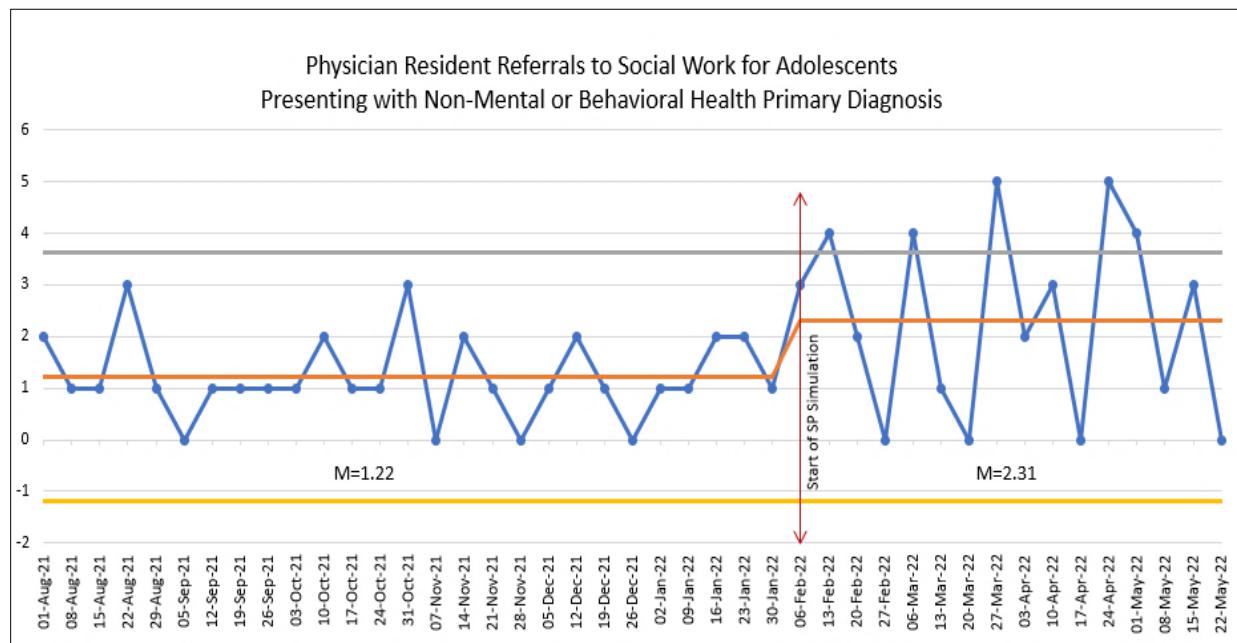
*Self-Reported HEEADSSS Use in Practice*



*Note.* JASP Team (2022). JASP (Version 0.16.1) [Computer software].

**Figure 10**

*Social Work Referrals Plotted on Control Chart*



## DISCUSSION

The overall purpose of this interdisciplinary QI was to pilot an SP program informed by the HEEADSSS interviewing process within the physician and nursing residencies of a South Texas pediatric tertiary care center to improve early identification of modifiable risk factors of suicidality among adolescent patients. The implementation of standardized patient methodology is resource intensive (Hayes et al., 2022; Wilbur et al., 2018), so the intent of the pilot was to evaluate the clinical value of this type of activity in our local setting prior to introducing the program formally into the physician and nursing residency curriculums. Four specific aims guided the QI initiative.

The first aim was to immediately improve participants' confidence in clinical communication skills by 20% and sustain at minimum a 10% increase at four weeks following the last simulation. Lugo et al. (2021) reported a positive correlation between an increase in self-efficacy and improved skill performance related to simulation training. In this QI, while there was a clinically and statistically significant increase in participants' self-reported confidence in communicating with patients immediately following the SP simulation, the improvement was noted to be about 10% rather than 20%. In a similar study, Vance et al., (2021) found that the implementation of an adolescent transgender standardized patient activity into their curriculum improved participants' self-efficacy in communication by 13%. In retrospect, a goal to improve immediate self-confidence scores by 20% may have been unrealistic as participants regarded their communication ability rather advanced at baseline ( $M=7.68$ ,  $SD= 1.23$ ). However, the fact that participants not only sustained immediate self-confidence scores but increased by an additional 3% at week 19 is promising. These findings suggest that the simulation activity contributed synergistically to the self-confidence gained through traditional clinical experiences.

The second aim was to improve participants' clinical competence in performing comprehensive psychosocial interviews by 25% from the initial to the subsequent SP patient encounter. Effective communication promotes a patient's trust in a healthcare provider and increases the likelihood that they will communicate private and personal information more freely, generating more positive outcomes (Slade & Sergent, 2021). Once again, while a clinically and statistically significant improvement of 11% was noted in-between encounters, a 25% improvement in performance was not achieved. In their study regarding the efficacy of SP feedback on resident performance, Bourget et al., (2018) noted a 32% increase in pre- and post-SCAG scores. In Bourget et al.'s (2018) study, the mean score for initial interviews was 34.19 (10.19), resulting in an 11-point increase to 45.15 (6.22). In contrast, the initial interview mean for this QI was 50.24 (7.45). The most likely reason for our participants' much higher pre-SCAG scores is related to the fact that they were allowed to use any resources available to them to conduct the psychosocial interviews. Because participants were given two blank copies of their SCAGs to enter their identification numbers on, one for each encounter, many of them used the second sheet as a template to ensure they addressed each segment of the HEEADSSS exam. Therefore, even if residents had little experience with the HEEADSSS assessment, they scored relatively well on their initial encounter with the use of resources.

The third aim for this QI was to improve physician and nursing residents' self-reported performance of a full HEEADSSS assessment with adolescent patients either *Frequently* or *Almost Always* by 25%. A clinically significant increase of 17% was reported in frequency of HEEADSSS use on week 19. Similarly, Martin et al. (2021) noted in their adolescent emergency medicine SP simulation quality improvement project that at a three-month follow-up, participants indicated increased use of new skills in practice, especially the use of the

HEEADSSS assessment tool. While a 25% increase was not achieved, Zortea et al. (2021) found that individuals are less likely to present with future self-harm injuries following participation in psychosocial assessments; therefore, any increase in frequency of HEEADSSS assessment is beneficial to the adolescent population. It was noted that one respondent reported *Never* using the HEEADSSS assessment both at baseline and at week 19. The nursing resident group did include neonatal intensive care unit (NICU) nurses who most likely would not have had the occasion to utilize a HEEADSSS assessment in practice. Because of the confidential nature of the surveys, it is unknown whether this participant was a NICU nurse, but it can be surmised. When these data were eliminated from the analysis, the increase in use of the HEEADSSS assessment was 21%.

The fourth and final aim for this QI was to increase the mean number of mental health referrals to the social work department for adolescent patients (11-21 years) presenting with a non-mental health related chief complaint by 5% by the fourth week following completion of simulation sessions. In reviewing sixty adolescent charts, Richardson et. al., (2018) found that only 3% of those presenting for other health conditions had a completed HEEADSSS assessment on file, compared to those with mental health presentations, 47%. However, the Substance Abuse and Mental Health Services Administration (SAMHSA) acknowledges that individuals with experiences of adverse childhood events and trauma are found in multiple service sectors, not just in behavioral health (2014). The assumption was that an increase in social work referrals would indicate an increase in the identification of modifiable risk factors for suicidality. In analyzing the run chart, findings indicated an 89% increase in the identification of potential risk factors with referral to social work. This was a noteworthy outcome and significant to the body

of SP quality improvement literature as most studies focus on reactions and learning rather than clinical behaviors and patient outcomes.

### **Limitations**

While this QI had many strengths, there were some limitations as well. One of the greatest limitations was the inability to accurately measure social work requests originating from nursing as all screenings are documented under the admitting physician, regardless of the healthcare provider who initiates. The team might have observed different findings if nurse-initiated SW screenings were included in our analysis. Another limitation was that no formal measure was established to consider the effects of the interdisciplinary aspect of the activity, although one nursing participant was overheard stating, “This is so helpful to hear how the doctors interact with the patients and what types of questions they ask.” A third limitation was the timeframe for data collection. One would expect an immediate increase in confidence and performance following any educational activity. A recommended period of measurement would be six-months of referral data post-intervention as well as a three-month follow-up on confidence, competence, and HEEADSSS use. Additionally, survey fatigue may have contributed to declining response rates. While 100% of the resident sample completed the baseline survey, only 31% completed the follow-up at week 19. The team might have received increased participation had we targeted only those who had attended the simulation activity rather than send the survey to the entire resident group. And lastly, the inclusion of a balancing measure to examine the effects, if any, the additional referrals had on the quality of care delivered by the SW department would have strengthened the QI findings.

## **Interpretation**

In their systematic review, Kaplonyi et al. (2017) agreed that SP-based education is accepted as a valuable means of improving healthcare providers communication ability but concluded that there was limited evidence regarding translating that improvement into patient outcomes and economic benefit. In performing this pilot, the project team attempted to address these noted deficits by utilizing the Ottawa Model of Research Use as a framework for planning, implementing, and evaluating the project. A transfer of knowledge was noted through the assessment of confidence and competence within the simulation lab, the concept of adoption corresponded to increased reported use of HEEADSSS in practice at week 19, and outcomes directly related to number of individuals identified who may benefit from additional social work support. Additionally, Kolb's experiential learning cycle provided a valuable guide for developing a meaningful SP simulation experience for learners, which was well received as indicated by a mean overall satisfaction score of 4.8 on a 5-point Likert scale. Many of the participants' comments indicated that they had "gained experience to utilize with future patients" which is the basis of Kolb's theory (Kolb & Kolb, 2017).

The interdisciplinary SP interviewing simulation pilot proved beneficial in improving physician and nursing residents' ability to conduct a psychosocial assessment for risk factors of suicidality among adolescents. It will be a valuable addition to both residency programs, especially since much of the cost associated with developing the curriculum is complete. Moving forward, the next phase in the QI plan will be to integrate the adolescent SP psychosocial assessment activity into the adolescent health rotations for PGY1 physician residents. Although, it may prove more challenging to coordinate intermittent simulations with the nursing resident program, the overall advantages of the activity warrant the additional effort.

## **Implications and Conclusion**

Our community's youth are experiencing a mental health crisis culminating in rising adolescent suicide rates. Early identification of modifiable risk factors can help adolescents receive the support they need to navigate this vulnerable stage of growth and development; however, many pediatric healthcare providers lack the confidence and ability to interact effectively with youth. Literature supports adolescent SP simulation as an educational modality to improve interactions with adolescents, and the result of this QI indicated this as well. While the specific measures set forth in the first three aims statements were not entirely met, the statistically and clinically significant improvements in confidence, competence, and frequency of HEEADSSS performance, as well as the increased incidence of social work referrals for adolescents presenting for reasons other than those related to mental health, demonstrated notable positive outcomes achieved through SP methodology.

In the future, as the adolescent SP interviewing simulation becomes a routine course offered by the simulation center, other healthcare providers and disciplines will be invited to take part in the program to help them consider how SP methodology may be used to improve the quality of care offered in their areas. Also, aside from the experience itself, participants' use of written resources to guide the adolescent interview improved their performance significantly. Currently there are no specific cues within the EMR for the HEEADSSS framework, which may indicate another opportunity to improve future performance. Due to the intricacies of Texas confidentiality laws, this will require close collaboration with the health records and ethics and compliance offices to ensure positive outcomes for healthcare providers, patients, and guardians.

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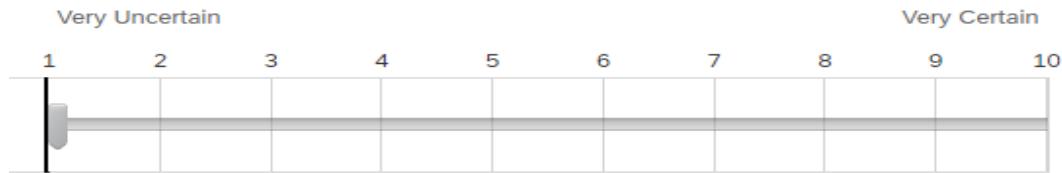
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## APPENDIX A

### Adaptation of the Self-Efficacy 12 (SE-12) Survey

Regarding adolescent encounters, either in the ER, clinic, or inpatient areas, on a scale from 1 to 10, 1 indicating (very uncertain) and 10 (very certain)



1. How certain are you that you can successfully . . .

Identify the issues the adolescent patient wishes to address during the conversation?

2. How certain are you that you can successfully . . .

Make a shared agenda/plan for the conversation with the adolescent patient?

3. How certain are you that you can successfully . . .

Urge the adolescent patient to expand on their problems/worries?

4. How certain are you that you can successfully . . .

Listen attentively to the adolescent patient?

5. How certain are you that you can successfully . . .

Encourage the adolescent patient to express their thoughts and feelings?

6. How certain are you that you can successfully . . .

Structure the conversation with the adolescent patient?

7. How certain are you that you can successfully . . .

Demonstrate appropriate non-verbal behaviors (eye contact, facial expression, placement, posture, and voicing)?

8. How certain are you that you can successfully . . .

Show empathy (acknowledge the adolescent patient's views and feelings)?

9. How certain are you that you can successfully . . .

Clarify what the adolescent patient knows in order to communicate the right amount of information?

10. How certain are you that you can successfully . . .

Check the adolescent patient's understanding of the information given?

11. How certain are you that you can successfully . . .

Make a plan based on shared decisions between you and the adolescent patient?

12. How certain are you that you can successfully . . .

Close the conversation by assuring that the adolescent patient's questions have been answered?

Note: Adapted from “Development and validation of a self-efficacy questionnaire (SE-12)

measuring the clinical communication skills of health care professionals,” by M.K. Axboe, K.S.

Christensen, P. Kofoed, and J. Ammentorp, 2016, *BMC Medical Education*, 16. Licensed under

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## APPENDIX B

### Texas A&M University - Corpus Christi Institutional Review Board Letter



**Date:** November 17, 2021  
**To:** Laura Monahan  
**CC:** Colleen Eaves  
**From:** Office of Research Compliance  
**Subject: IRB Declaration of Research Not Involving Human Subjects**

Dear Laura Monahan,

Activities meeting the DHHS definition of research or the FDA definition of clinical investigation and involve human subjects are subject to IRB review and approval.

On 11/17/2021, the Office of Research Compliance reviewed the project below and determined that the proposed activity does not meet the FDA definition of a clinical investigation or DHHS definition of research.

**Type of Review:** Submission Response for Initial Review Submission Packet  
**Title of Study:** Improving Medical and Nursing Residents' Ability to Conduct Adolescent Psychosocial Interviews Utilizing Standardized Patient Simulation  
**Principal Investigator:** Laura Monahan  
**IRB Number:** TAMU-CC-IRB-2021-0318  
**Submission Action:** IRB Review not Required for projects not meeting the definition of research

Therefore, this project does not require IRB review and you may proceed. This IRB Declaration is in effect from 11/17/2021 and does not expire.

Limits to this determination:

1. This determination corresponds with the versions of the application and attachments in the electronic system most recently approved as of the date of this letter. Any planned changes require submission to the IRB to ensure that the research continues to meet the criteria for a non-human subject research determination.
2. This project may NOT be referenced as "IRB approved" or "research".

The following statement can be included in the manuscript: "This project was reviewed and determined to not meet the definition of research involving human subjects by the Texas A&M University IRB - Corpus Christi Institutional Review Board."

Please do not hesitate to contact the Office of Research Compliance with any questions at [irb@tamucc.edu](mailto:irb@tamucc.edu).

Sincerely,

Jucel Juleros Nazareno  
Office of Research Compliance

APPENDIX C  
Organizational Letter of Support

September 14, 2021

Dr. Tammy McGarity  
DNP Program Coordinator  
College of Nursing and Health Sciences  
Texas A&M University – Corpus Christi  
6300 Ocean Drive  
Corpus Christi, TX 78412

Dear Dr. McGarity,

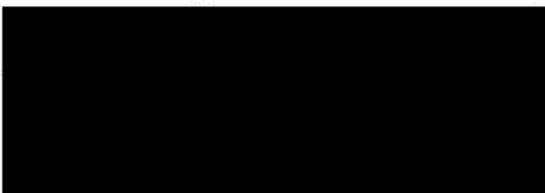
The purpose of this letter is to provide Colleen Eaves, a Doctor of Nursing Practice student at Texas A&M University College of Nursing and Health Sciences, support in conducting a quality improvement project at [REDACTED] Children's Hospital. The project, *Improving Medical and Nursing Residents' Ability to Conduct Adolescent Psychosocial Interviews Utilizing Standardized Patient Simulation*, entails development and implementation of a standardized patient simulation program utilizing volunteers from local colleges.

The purpose of this project is to implement an interdisciplinary standardized patient simulation program within [REDACTED] Children's Hospital's nursing and medical residency programs to promote clinical confidence and competence in conducting comprehensive psychosocial interviews with adolescent patients utilizing the HEEADSSS screening framework to improve identification of potential risk factors for suicidality. [REDACTED] Children's Hospital was selected for this project as Colleen Eaves is employed at this institution, manages our simulation center, and programs, and has a vested interest in improving care at this facility.

I, [REDACTED] Chief Nursing Officer of [REDACTED] Children's Hospital, do hereby fully support Colleen Eaves in the conduct of this quality improvement project, *Improving Medical and Nursing Residents' Ability to Conduct Adolescent Psychosocial Interviews Utilizing Standardized Patient Simulation* at [REDACTED] Children's Hospital.

I also approve Colleen Eaves to access protected health information (PHI) for purposes of conducting this quality improvement project. She has signed a HIPAA release form.

Sincerely,

A large black rectangular redaction box covering the signature area.

## APPENDIX D

### Case Scenarios

#### *Scenario 1: Taylor Smith*

You are a 14-year-old, Taylor Smith, who is coming to the office with vague abdominal pain and fatigue. You left your only friend behind when your family moved across the country for your parents to find work 3 months ago at the start of the new school year. Your mother/father is with you, their only concern is to get a doctor's excuse. You are initially wary because you have had bad experiences with adults recently, including teachers not defending you from bullying and your parents yelling at you. You are somewhat withdrawn, making minimal eye contact. If the learner uses skills to make you feel comfortable, such as appearing concerned, being sensitive that there is more going on, and asking open-ended questions, you will begin to make more eye contact and to reveal more information. If not, continue not to divulge.

#### *Scenario 2: Jaime Amari*

You are a 15-year-old, Jaime Amari. Your parent brought you in for a physical because she is concerned about your weight loss and mood swings. This is the first time you are meeting this clinician. Your last regular checkup was about 1 year ago for a sports physical. Your parent is with you. You state you are "fine." You have "just been trying to

eat healthier and exercise to lose a little weight." You have a flat/depressed affect; restricted eye contact; appear guarded and not very open in answering questions, not quick to disclose information, hesitant; resident needs to ask specific questions to get answers; you continuously tap heel making entire leg move up and down; you seem to want to answer the questions "correctly" so as to appear fine. Everything is "Ok."

*Scenario 3: Chris Donaldson*

You are a 16-year-old, Chris Donaldson, who is coming to the doctor for a routine check-up. You need a form completed for a part-time job at Wendy's. This is the first time you are meeting this clinician. Your last regular checkup was about 4 years ago when you had your last immunizations. Your parent is with you. Your only concern today is to get your paper signed so you can start work. You had no idea that the visit would take so long and that you would be "interrogated" about your personal life. If the physician can explain and win you over, you will warm up and be receptive and appreciative of the discussion.

You are not very talkative and use as many one-word answers as possible. At first you are polite, but as the visit drags on you become a little irritated. You just wanted to get your paper signed so you could start working. You had no idea it would take all day.

Only if the clinician adequately explains why he/she needs the information and that it is confidential will you be more open and share more of your psychosocial history. If this

occurs, your attitude improves, and you have an honest conversation and are receptive to what the physician says.

*Scenario 4: Kelley Parker*

You are a 17-year-old, Kelley Parker, who presents to the ER for lower abdominal pain and burning with urination. Your parent thinks you probably have a UTI. You are concerned that something else may be wrong with you since you have never felt this before. Your parent is with you. You are very polite, but nervous. You are willing to answer questions about school and family, but less so about friends, dating, etc. You would not be called ‘difficult’ just ‘unsure’ about many answers because you are nervous

Note: Adapted from “Adolescent medicine and the trainee: Evaluating self-Efficacy, knowledge and communication through the utilization of standardized patient simulations” by J. Woods, T. Pasold, and B. Boateng, 2012, MedEdPORTAL, 8, 9137.

APPENDIX E  
Social Work Report Methodology and Exclusion Criteria

**1. Filter out discontinued orders from TASK, keep new orders**

**2. Filter out Canceled from STATUS, keep completed**

**3. Filter out date of birth 2000 to 2010**

**4. Filter out all non-DCH Residents from PROVIDER**

**5. Filter out Mental Health Related Chief Complaint/ Primary Diagnosis**

**Examples**

Alcohol abuse with intoxication, unspecified	Other drug induced movement disorders
Altered mental status, unspecified	Suicidal ideations
Anorexia nervosa, restricting type	Transient alteration of awareness
Child neglect or abandonment, confirmed, initial encounter	Laceration without foreign body of left forearm, initial encounter
Eating disorder, unspecified	Unspecified protein-calorie malnutrition
Poisoning by ,,, intentional self-harm, initial encounter	Abrasions of unspecified part of neck, initial encounter
Panic disorder (episodic paroxysmal anxiety)	

**6. Filter out non-mental health related referral reasons or vague referrals**

**Examples**

Assess home needs	Eval and treat
BPA	Paperwork
Transportation	Financial assistance
Wheelchairs	Lodging
Meal ticket/Food	Fever
cystic fibrosis	School
DM services	Assess for any needs
Down's Syndrome	New Dx Cancer DM
Safety education due to traumatic injury	equipment

**7. Filter out repeat orders**

## APPENDIX F

### Author's Permission to Adapt SE-12

#### SV: SE-12 Validity



Kaj Sparle Christensen <kasc@ph.au.dk>

1:40 AM



To: colleen eaves; Colleen Eaves Cc: Jette Ammentorp (Jette.Ammentorp@rsyd.dk)

That's fine with me.

BW, Kaj

---

Fra: colleen eaves <ceaves83@hotmail.com>

Sendt: 24. september 2021 01:54

Til: Colleen Eaves <Colleen.Eaves@dchstx.org>; Kaj Sparle Christensen <kasc@ph.au.dk>

Cc: Jette Ammentorp (Jette.Ammentorp@rsyd.dk) <Jette.Ammentorp@rsyd.dk>

Emne: RE: SE-12 Validity

One final question Mr. Christensen, would you mind if I adapt your stem question as follows to frame the audience and environment for my respondents?

"Regarding adolescent consultations, either in the ER, clinic, or inpatient areas, how certain are you that you can successfully . . ."

Thank you, Colleen Eaves

Driscoll Children's Hospital  
Corpus Christi, TX