

**Social Determinants of Health Screening and Intervention in Pediatric Primary
Care**

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Abstract

Social determinants of health (SDoH) are non-medical factors about a person's life that influence health outcomes. Currently, universal SDoH screening is recommended by major medical organizations in pediatric primary care, however this practice has not been widely implemented into routine pediatric care. The purpose of this DNP project was to assess the feasibility of a SDoH screening and intervention program among school-aged children in the pediatric primary care setting and evaluate its effect on pediatric health related quality of life (HRQOL). The novel approach of applying the Safe Environment for Every Kid (SEEK) model of care to school-aged children was implemented using the SEEK PQ-R screening tool for SDoH screening with an 8-week telehealth follow-up program utilizing motivational interviewing for those with SDoH needs. Pediatric HRQOL was measured using the Pediatric Quality of Life Inventory (PedsQL) 4.0 Generic Core Scales Short-Form (PedsQL) and pre- and post-intervention scores were compared using descriptive statistics. Among 52 participants screened, 38.5% were positive for SDoH needs. Six participants completed the follow-up program. Median PedsQL scores post-intervention showed an overall upward trend with parent participants observing greater improvements in pediatric HRQOL than child participants. SDoH needs were identified among the school-aged population at the clinic using the SEEK PQ-R, and pediatric HRQOL may be improved with follow-up intervention for identified needs.

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Social Determinants of Health Screening and Intervention in Pediatric Primary Care

Social Determinants of Health (SDoH) are “the non-medical factors that influence health outcomes. They are the conditions in which people are born, grow, work, live and age, and the wider set of forces and systems shaping the conditions of daily life” (Commission on Social Determinants of Health, 2008). Over the past decades, increasing recognition of the impact SDoH have on lifelong health outcomes has led to a call for action globally and nationally to address health inequities related to SDoH. In 2008 The World Health Organization (WHO) published “*Closing the gap in a generation: Health equity through action on social determinants of health*” which outlined goals for global initiatives to improve the health and wellbeing of individuals around the world. In the United States, Healthy People 2030 addresses SDoH specifically with one of their 5 overarching goals: To “Create social, physical and economic environments that promote attaining the full potential for health and well-being for all.” (Kleinman et al., 2021)

Children are particularly vulnerable to the influence that unmet social needs have on their health. Traumatic or stressful events in childhood or adolescence, sometimes called adverse childhood experiences (ACEs), have been shown to negatively affect mental and physical health both during childhood and into adulthood (Bucci et al., 2016). ACEs include childhood exposure to factors such as poverty, neglect, abuse, parental stress or mental illness, parental substance abuse, household dysfunction, exposure to community violence, bullying or discrimination. When one is exposed to a traumatic event or stressor, the physiologic stress response is triggered, causing a complex cascade of changes in the neurologic and endocrine systems (Bucci et al., 2016). Under normal circumstances, the stressor is removed or ameliorated in some way and the

body returns to homeostasis. However, when one is repeatedly or chronically exposed to stressors, the physiologic stress response becomes maladaptive or “toxic”. This leads to dysregulation and inability of the body to return to homeostasis, which in turn produces biologic changes and damage to the neurologic and endocrine systems. Toxic stress is especially worrisome in children as their brains are incredibly plastic and susceptible to environmental influence. Children who are exposed to ACEs experience higher rates of childhood illnesses such as eczema, asthma, obesity and viral illnesses as well as higher rates of abnormal development, learning disorders and mental illnesses (Bucci et al., 2016). This overall poorer health carries into adulthood and adults who experienced ACEs as children are at significant risk for conditions such as cancer, heart disease, diabetes, and mental illness and those who experienced 6 or more ACEs have a significantly shortened lifespan overall. When parents are faced with social challenges, such as poverty, food insecurity, mental illness, intimate partner violence, or stress on a daily basis their ability to interact with their children positively is affected. Given that the presence of a strong, loving, nurturing relationship with a parent or adult is a protective factor against the effects of toxic stress for children (Bucci et al., 2016), the need to identify those families at risk is apparent.

In response to the recognition that SDoH play a critical role in the overall health, development and well-being of children, major medical organizations representing clinicians who provide pediatric care have made recommendations for SDoH screening as a part of routine medical care including The American Academy of Pediatrics (AAP), The American Academy of Family Physicians (AAFP) and the National Association for Pediatric Nurse Practitioners (NAPNAP) (Committee on Psychosocial Aspects of Child and Family Health et al., 2012; Oldfield et al., 2021; Spratling et al., 2019). Implementing universal, standardized screening for

SDoH during medical visits has been shown to identify needs and increase referrals to community resources (Dubowitz et al., 2012; Oldfield et al., 2021; Sokol et al., 2019). Despite this, systematic and standardized screening for SDoH has not been widely adopted into practice, often due to concerns over lack of time and expertise, or resources available to address identified needs (Katz et al., 2018; Schickedanz et al., 2019).

Various SDoH screening tools have been developed in response to increasing awareness of the need to adequately screen for SDoH among the pediatric population. A systematic review of the literature regarding SDoH screening tools in use identified 11 different tools (Sokol et al., 2019). The number of SDoH domains addressed varied between tools, as well as follow-up procedures included with SDoH screening tools or programs. Additionally, many of the available tools have not been assessed for validity or reliability (Sokol et al., 2019). The Safe Environment for Every Kid (SEEK) Model is a model for primary care that utilizes the SEEK PQ-R screening tool, which has some psychometric properties assessed, as well as clinician training on SDoH and provides access to resources for families. The SEEK Model has been shown to improve clinicians attitudes and comfort with screening and to increase identification of need and referrals to community resources in both high-risk and low-risk patient populations (Dubowitz et al., 2012).

The purpose of this Doctor of Nursing (DNP) scholarly project was to assess the feasibility of a SDoH screening and intervention program among school-aged children in the pediatric primary care setting, and to examine its effect on quality of life of pediatric patients.

Review of the Literature

A systematic review of the literature was conducted to answer the clinical question: In pediatric primary care, what effect does implementation of social determinants of health

screening using the SEEK Model of Care with telehealth education and counseling follow-up have on quality of life for school-aged patients during an 8-week timeframe? The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement was used as a guide (Moher et al., 2009) to explore the current research available on SDoH screening in pediatric primary care. Articles selected for the review of the literature included key concepts of: SDoH, screening, screening tools, pediatrics, and pediatric primary care. Healthy People 2030 groups SDoH into 5 domains: Economic Stability, Education Access and Quality, Health Care Access and Quality, Neighborhood and Built Environment, and Social and Community Context (U.S. Department of Health and Human Services, n.d.). These domains help to further clarify the broader definition of SDoH by the WHO. Screening tools are defined as a questionnaire or interview framework that assesses multiple SDoH domains. Pediatrics encompasses the care of children from birth to early adulthood. Pediatric primary care is defined as health care delivered to children in the outpatient setting and may include pediatric primary care clinics, family practice clinics or community health clinics, excluding care delivered at ambulatory emergency care centers.

Five databases were searched: PubMed, Cumulative Index of Nursing and Allied Health Literature (CINAHL), Web of Science, PsycINFO and SocINDEX. A medical librarian was consulted to ensure accuracy and fidelity of the search process. Figure 1 illustrates the search process using a PRISMA flow diagram.

In PubMed an advanced keyword search was conducted using keywords combined with the Boolean operator AND for: “social determinants of health”, “screening” and “primary care”. The search details were then examined for MeSH terms for keywords. MeSH terms were identified as: “social determinants of health”, “mass screening” and “primary health care”. The

MeSH terms were then used to refine the search and the following search was conducted using the string: (*"social determinants of health"[MH] OR "social determinants of health"[tiab]*) AND (*"mass screening"[MH] OR "mass screening"[tiab]*) AND (*"primary health care"[MH] OR "primary care"[tiab]*). After the search was conducted, filters were applied for publication from 2010 to 2021, academic journals and English language. This yielded a result of 43 articles.

In CINAHL an advanced stepwise search was conducted with keywords and suggested subject headings were selected for MeSH terms. The keyword “social determinants of health” was searched and the subject heading of “social determinants of health” was selected. Next, the keyword “screening” was searched and the subject heading of “health screening” was selected. Next, the keyword “primary care” was searched and the subject heading “primary health care” was selected. Using the Boolean operator AND the three searches were combined. Filters were applied for publication from 2010 to 2021, journal articles and English language. This produced a total of 127 articles.

A basic topic search was conducted in Web of Science using the keywords “social determinants of health”, “screening” and “primary care” combined with the Boolean operator AND using the following string: *"social determinants of health" AND "screening" AND "primary care"*. Prior to the search the publication years were limited for 2010 to 2021. After the search, filters for article, review and English language were applied, yielding 98 articles.

PsycINFO was searched using keywords with the Boolean operator AND with the following string: *"social determinants of health" AND "screening" AND "primary care"*. Filters were applied for publication between 2010 and 2021, academic journals and English language. This search produced 16 articles.

In SocINDEX a search was conducted using keywords with the Boolean operator AND with the following string: *"social determinants of health" AND "screening" AND "primary care"*. The results yielded no publications earlier than 2015 so no publication date filter was applied. No results were in languages other than English, so no language filter was applied. A filter was applied for academic journal, yielding a result of 5 articles.

A total number of 289 articles were retrieved from the 5 databases. Duplicates were removed utilizing Zotero bibliographic software which resulted in a total of 198 articles retained for review. A title and abstract review was conducted and a total of 155 articles were excluded for the following reasons: not pediatric focused (45); conference presentation (1); emergency department or hospital setting (10); not related to SDoH screening (67); commentary or opinion article (14); no abstract (9); specialty care (2); government agency recommendations (1); practice guidelines/recommendations (6). Forty-three articles remained after title and abstract review. The remaining full-text articles were reviewed and 28 were excluded for the following reasons: not a research study (4); not focused on pediatric patient population (7); no full-text available (3); not primarily focused on SDoH screening and outcomes (5); no SDoH screening tool used (1); program description/evaluation (3); low level of evidence or quality (2); and included in retained systematic review (3). A search of the reference lists did not yield further articles for analysis. A total of 15 articles were retained for analysis.

Evidence Appraisal and Synthesis

Articles retained for analysis were evaluated for level of evidence and quality using the Johns Hopkins Nursing Evidence-Based Practice (JHNEBP) criteria (Dang & Dearholt, 2017). Figure 2 illustrates the JHNEBP criteria. The retained articles represented a heterogenous mix of study designs including quasi-experimental, non-experimental, qualitative and mixed-methods

research and one program evaluation. There were no randomized controlled trials included in the analysis because randomized controlled trials identified in the search were included in systematic reviews that were retained for analysis. Two quasi-experimental studies of level II evidence, good (B) quality were included. The remainder of the articles included were of varying study design, were level III evidence and were of good (B or A/B) quality. A program evaluation, level V evidence, was determined to be of high (A) quality. Three systematic reviews were included but were of level III evidence, good (B) quality because all 3 included both experimental and non-experimental studies in order to achieve the purpose of identifying all available SDoH screening tools. These were retained for analysis because they represented a thorough assessment of the available screening tools for SDoH in pediatrics. Table 1 below shows a summary of the articles included in the analysis. To assess the possibility of publication bias, a search of the grey literature was conducted by searching Google Scholar using the following string: “social determinants of health” AND “screening” AND “pediatrics”. A brief review of the first 20 results did not find evidence of publication bias. Through the evidence appraisal process, themes among the research emerged and are discussed below.

Screening Tools

Three systematic reviews identified and assessed the SDoH screening tools in use in research and clinical practice. Each of the three reviews identified that there are numerous SDoH tools available for use in the pediatric setting and that these tools are being used across a variety of settings including primary and tertiary care (Morone, 2017; O’Brien, 2019; Sokol et al., 2019). In their assessment of the available screening tools assessing multiple domains of SDoH, Sokol et al. (2019) identified 11 unique screening tools for use in pediatrics. A common finding among the three reviews was that the majority of SDoH screening tools have not assessed or

reported on psychometric properties (Morone, 2017; O'Brien, 2019; Sokol et al., 2019). Three tools that were identified to have reported psychometric properties were the WE CARE Survey, the SEEK PSQ and IHELP (Morone, 2017; Sokol et al., 2019). O'Brien (2019) identified a greater number of SDoH screening tools with psychometric properties reported but the majority of these were single-domain screens rather than multi-domain screens and encompassed screens used in adult populations and all healthcare settings.

Available tools varied in the number of SDoH domains assessed. Morone (2017) identified that the most commonly assessed domains were Economic Stability and Social and Community Context, which was consistent with the findings of Sokol et al. (2019). The least prioritized domains were Education and Neighborhood and Built Environment (Morone, 2017). The majority of screeners assessed only for risks, however 4 screeners also assessed protective factors (Sokol et al., 2019).

Method of administration for screening was not consistent among studies and ranged from paper-and-pen, computer or tablet, face-to-face, or phone interview with screens administered by various members of the healthcare team. IHELP is a mnemonic that can be embedded in electronic medical record systems (EMR) to prompt SDoH screening, while WE CARE and SEEK PSQ are questionnaires more commonly administered via paper-and-pen or tablet (Sokol et al., 2019). One study examined whether verbal or written Food Insecurity screening would result in higher rates of Food Insecurity disclosure and found that rates of disclosure were significantly higher after switching to written screening (Palakshappa et al., 2020).

Screening and Follow-up

Among the studies that reported on SDoH screening rates, identified positive screens and referrals outcomes, all of the studies found that screening identified patients with social needs (Berger-Jenkins et al., 2019; De Marchis et al., 2019; Eismann et al., 2021; Fiori et al., 2020; Oldfield et al., 2021; Patel et al., 2018; Purkey et al., 2019). Eismann et al. (2021) conducted a program evaluation of ParentConnex (a positive parenting program that incorporates routine SDoH screening and co-located parent coaching services) examining the feasibility of screening as evidenced by screening rates, positive screens and referrals to parent coaching or community resources. They reported screening was conducted at 65% of targeted visits and was positive 26% of the time, resulting in 12% of positive screens referred to parent coaches. An observational study on a comprehensive social needs and behavioral screening program found that 25% of a convenience sample of those screened were positive for social risks and 18% scored positive for both social and behavioral concerns (Berger-Jenkins et al., 2019). Of those who screened positive for social risks, only 44.4% had previously documented social stressors in their record. Patients were scheduled for follow-up with either their primary care provider or a social worker and rates of completion for these follow-ups were high at 83% and 42% respectively.

Another pilot program, Community Linkage to Care, involving routine SDoH screening and in-house community health workers to facilitate referrals, also revealed high rates of screening completion with 72% of eligible patients screened, 20% of which were positive for social needs. Among those who had positive screens, 29% were referred to a community health worker and 43% had successful social services referrals (Fiori et al., 2020). The study additionally investigated factors associated with successful referrals and found that a time frame

of 30 days or less of follow up and > 4 outreach attempts were statistically significantly associated with success.

In their systematic review, Sokol et al (2019) also examined follow-up procedures among the studies reviewed and found that of the 17 studies included in their review, only 4 did not report on follow-up procedures. Follow-up procedures included: results were discussed with caregivers and referrals to outside sources were made; referrals were offered or made without reporting discussing with caregivers; or results were discussed, referrals offered or made, and an intervention was delivered in the form of motivational interviewing or patient navigators assigned to facilitate referrals.

Patient Preferences and Acceptability

Several qualitative and quantitative studies sought to evaluate patient attitudes and perceptions of SDoH screening. In all studies, the majority of patients perceived SDoH screening in the medical setting positively. Qualitative studies interviewing adult patients and adult caregivers of pediatric patients found that participants believed SDoH screening was acceptable and important (Byhoff et al., 2019; Emengo et al., 2020; Orr et al., 2019). Caregivers also expressed the importance of patient-centeredness in the administration of screens suggesting that an empathetic and compassionate delivery is more likely to elicit truthful responses (Byhoff et al., 2019). Another study that evaluated a screening and referral program utilizing patient navigators found that caregivers felt cared for more holistically when screened for SDoH and preferred to be screened by patient navigators as they were perceived to have more time to do so (Emengo et al., 2020).

In one study that used surveys to assess patient and caregiver comfort with screening across a variety of settings including emergency departments and primary care, 79% of

participants were “very or somewhat” comfortable with screening, and also identified that more participants were comfortable with screening in the primary care setting than in the emergency department setting (De Marchis et al., 2019). Oldfield et al. (2021) examined preferences of adolescents and caregivers for comfort with SDoH screening and preferences for receiving social needs information and found that both adolescents and caregivers were comfortable with screening and preferred to receive social needs information via written resources or electronically (text message or email) rather than in-person service coordination.

Caregivers were found to have insight regarding the relationship between social risks and overall health, and in the limitations of the healthcare system to address risks, reporting that screening was beneficial nonetheless and in some cases motivated caregivers to address their own health needs (Byhoff et al., 2019; Emengo et al., 2020).

Facilitators and Barriers

Four of the articles addressed clinician attitudes toward screening, and perceived facilitators or barriers to implementation of SDoH screening. Clinicians overall found screening to be acceptable and beneficial to patients (Eismann et al., 2021; Fiori et al., 2020; Purkey et al., 2019). Clinicians and staff who participated in the Community Linkage to Care pilot program were surveyed regarding their experiences with the program at baseline and after 1 year. There was a significant increase in belief that the clinic was equipped to handle social needs, in their confidence to address concerns, and in knowledge of resources. Clinicians also felt that the co-located parent coach was a valuable addition to the care team. However, clinicians did not think that the program helped the clinic to stay on schedule (Eismann et al., 2021).

Two studies that qualitatively evaluated clinicians’ experiences with SDoH screening programs found that clinicians identified difficulty remembering a new task (administering the

screen), workflow or EMR challenges, and feelings of inadequacy or lack of knowledge or expertise to address social risks to be barriers and some expressed frustrations with lack of available resources. (Herrera et al., 2019; Purkey et al., 2019). Additionally, some clinicians expressed that use of a patient navigator was necessary for SDoH screening and follow up to be feasible within their clinics (Herrera et al., 2019). One study examined the effect of a 2-phase teaching tool pertaining to SDoH screening which included an initial brief seminar, followed later by visual reminders for screening, along with use of an EMR embedded screening tool on the effects of documentation of SDoH and found that rates of documentation increased for 2 of 6 domains assessed in the tool (Patel et al., 2018).

Discussion

As recognition of the interconnectedness of unmet social needs and overall health has increased in recent years, so have strategies to address this in the healthcare system. This has led to major medical organizations such as the AAP, AAFP and NAPNAP to make recommendations for routine screening for SDoH in the pediatric primary care setting (Committee on Psychosocial Aspects of Child and Family Health et al., 2012; Oldfield et al., 2021; Spratling et al., 2019). Despite this, the practice of SDoH screening has yet to be widely implemented into standard practice. However, this review of the literature identified that much research is being conducted on SDoH screening and ways to best incorporate this into the existing healthcare system.

Some particular concerns have been raised about universal SDoH screening. One concern is that universal screening would lead to overburdening of an already stressed social resource system, however the evidence indicates that this is not the case. Studies included in this review found that while screening did identify patients and families with unmet social needs, positive

screens did not always lead to social work or other social resource referrals as patients may not always want help or expect the healthcare system to address their needs (Berger-Jenkins et al., 2019; Byhoff et al., 2019; Eismann et al., 2021; Emengo et al., 2020). Conversely, a critique of SDoH screening is that once social risks are identified there is a lack of appropriate follow-up interventions, however the evidence from this review found that screening led to immediate and appropriate referrals (Berger-Jenkins et al., 2019; Eismann et al., 2021; Emengo et al., 2020; Fiori et al., 2020; Herrera et al., 2019; Purkey et al., 2019; Sokol et al., 2019).

Patient acceptance of screening has also been identified as a potential concern regarding SDoH screening, however the evidence suggests that patients find screening in the healthcare setting to be appropriate, acceptable and beneficial (Byhoff et al., 2019; De Marchis et al., 2019; Emengo et al., 2020; Oldfield et al., 2021; Orr et al., 2019).

Feasibility of routine SDoH screening is another area of concern but this review found that screening has been successfully implemented in a variety of settings (Morone, 2017; O'Brien, 2019; Sokol et al., 2019). Research on SDoH screening has uncovered several facilitators for successful implementation of routine SDoH screening into practice. Education followed by reminders for clinicians on SDoH screening may help with screening uptake (Patel et al., 2018). Screening programs that incorporate in-house patient navigators or community health workers may have more successful referrals outcomes and provide a valuable or necessary addition to the care team for addressing patients' social needs, from both the clinician and patient perspective (Eismann et al., 2021; Emengo et al., 2020; Fiori et al., 2020; Herrera et al., 2019). Identifying clear roles among clinicians and staff for screening procedures such as who administers the screens, who documents the screens and what the referral process will be, may

lead to smoother implementation and decreased frustrations with SDoH screening (Purkey et al., 2019).

Many different screening tools exist for SDoH screening in healthcare settings. Of the tools that exist, there is little data on validity and reliability as the majority of tools have not evaluated, or reported on, psychometric properties (Morone, 2017; Sokol et al., 2019) and many tools that do have validity and/or reliability are single-domain tools (O'Brien, 2019). Three multi-domain SDoH screening tools which have reported validity or reliability include the WE CARE survey, SEEK PSQ and IHELLP mnemonic (Sokol et al., 2019). Lack of valid and reliable tools may lead to difficulty in determining in practice how well SDoH are truly being identified. More research is needed to assess psychometric properties of available screening tools or to develop valid and reliable tools. Despite the lack of valid and reliable tools for SDoH screening, the evidence finds that available tools in use do elicit and uncover SDoH risks and result in appropriate referrals (Berger-Jenkins et al., 2019; De Marchis et al., 2019; Eismann et al., 2021; Emengo et al., 2020; Oldfield et al., 2021; Purkey et al., 2019; Sokol et al., 2019). While most studies reported or explored referrals processes and success of referrals to community resources, there is little evidence regarding the outcomes of these referrals in terms of improvements in overall health as a result of identification and intervention upon SDoH risks. This is another area for further research, as the goal of SDoH screening is to reduce health disparities and improve the overall health of patient populations. Additionally, the majority of studies were conducted among low-income populations, in urban areas or within large academic medical systems. This limits the generalizability of findings to different patient populations such as those of suburban, rural, commercially insured, or private practices and represents another area in need of further research.

This systematic review of the literature sought to explore the current literature on SDoH screening and intervention in pediatric primary care. While this review found that the majority of the evidence regarding SDoH screening in clinical practice is of lower levels of evidence (II, III and V), most studies were of good (B) quality and overall found that SDoH screening does lead to increased identification of SDoH risks and referrals to community resources. The potential risks of SDoH screening to patients are outweighed by the potential benefits of improved clinician awareness of patients' social needs, support, and connection to resources for patients and families with unmet social needs. Based on this review of the evidence, SDoH screening in the pediatric primary care setting is recommended and further research is needed on patient outcomes of SDoH interventions.

Purpose

The purpose of this Doctor of Nursing (DNP) scholarly project was to assess the feasibility of a SDoH screening and intervention program among school-aged children in the pediatric primary care setting, and to examine its effect on quality of life of pediatric patients.

Methods

Setting

The scholarly project was implemented at a rural pediatric primary care practice with two clinics in central Virginia serving pediatric patients, established in 2000. The practice employs 6 pediatricians and 4 nurse practitioners, who are supported by a staff of nurses, medical assistants, and administrative staff. On average, the clinics see a combined total of 90 to 150 patients per day ranging in age from birth through 23 years old. The patient population primarily consists of those with commercial insurance, although an estimated 10-15% of patients have Medicaid insurance and an estimated < 5% are uninsured. The practice previously had no formalized

screening or referral procedure in place for SDoH and social needs were identified primarily by interview or as spontaneously disclosed to providers during patient encounters. Beginning in Spring 2022 the practice began using the SEEK Model to screen and address SDoH needs among patients 5 years and younger.

The research team included the practice mentor/supervising physician who is a partner/owner of the practice, as well as the principal investigator (PI) who is a pediatric nurse practitioner also practicing at the clinic. Other team members included the remaining clinicians, practice manager, nursing staff, nurse scientist mentors, a statistician and information technology (IT) support.

Design

The project was implemented as a quasi-experimental research project with pre- and post-intervention outcome measurement design. The SEEK Model was selected for use in this project because the clinic had already determined the SEEK Model to be the method by which to address SDoH within the clinic for patients 5 years and younger, while no formalized SDoH screening exists for those > 5 years of age. Additionally, the SEEK Model has demonstrated some effectiveness in the published literature.

Intervention

The SEEK Model is a model of pediatric primary care that incorporates screening for SDoH needs at targeted wellness visits for ages 5 years and younger with brief intervention when SDoH needs are identified. Clinician training on the particular SDoH that the screen targets, and the brief intervention strategy that the SEEK model recommends is also provided (Dubowitz, 2014). The screening tool currently used in the SEEK Model is the SEEK PQ-R, which was developed to primarily address SDoH within the family context that contribute to childhood

toxic stress and negative social factors for children such as neglect or abuse. The screen focuses on social factors for which treatment resources are readily available. Specifically, the tool screens for factors such as parental stress, parental substance abuse, intimate partner violence, parental depression, and food insecurity. A brief intervention during a wellness visit, if needs are identified, is accomplished using a motivational interviewing technique that SEEK calls the REAP approach. REAP is an acronym that stands for Reflect, Empathize, Assess and Plan which embodies the principals of motivational interviewing. Motivational interviewing is a style of communication that engages and empowers the patient to change by encouraging self-reflection to assess their own capacity for change, and involves them actively in the treatment process (Miller & Moyers, 2017). The process views the patient as an equal partner in the development of the plan, rather than simply directing the plan for them. This approach is particularly useful for those who are experiencing ambivalence about a problem, or who have low confidence or desire for change. Motivational interviewing has been shown to be effective in clinical practice within various healthcare settings, including primary care, especially for issues such as alcohol or substance abuse, tobacco use, self-monitoring and confidence in change (Lundahl et al., 2013; VanBuskirk & Wetherell, 2014). Even brief interventions using motivational interviewing, or as few as one session, may be helpful in enhancing readiness to change. Once a problem is identified using the screen, the provider can implement the REAP approach by briefly reflecting on the identified problem, conveying empathy regarding the problem, assessing the parent's perception of the issue, and making a brief plan for change or follow-up depending on the parent's readiness or desire for help.

The SEEK Model has demonstrated effectiveness in reducing negative effects of SDoH stresses among pediatric patients aged 0 to 5 years, the younger pediatric age focus chosen on the

idea that earlier intervention will lead to better long term outcomes (Dubowitz, 2014). In one randomized controlled trial (RCT) conducted in an urban “high risk” setting among families with poor socioeconomic status the SEEK model demonstrated effectiveness at reducing child protective services reports and decreased incidence of possible medical neglect, delayed immunizations, and cases of severe physical assault on children (Dubowitz et al., 2009). A second RCT conducted in suburban pediatric practices found that even among a “low risk” population with higher socioeconomic status, mothers reported decreased physical aggression and use of corporal punishment following implementation of the SEEK Model (Dubowitz et al., 2012). The review of the evidence identified that SDoH screening programs with follow-up communication with families had better success with connecting patients to resources and improved patient satisfaction.

Sample

Inclusion criteria for project participation were: Parents of children aged 6-12 years presenting for wellness visits, non-urgent care, or follow-up visits. Exclusion criteria were: Non-English-speaking patients/parents; patients presenting for visits < 6 years or > 12 years of age; those presenting for urgent care visits; no access to cellular or internet service; no parental email. Non-English-speaking patients were excluded because the PI, who implemented the project, is English speaking only and no resources were available for multilingual support for this small-scale feasibility study. The follow-up intervention was conducted using telehealth, thus those with no cellular or internet service and no email were excluded.

Procedures

The project was submitted to the University of Virginia Institutional Review Board for Health Sciences Research (IRB-HSR) and approved for implementation, study number

HSR210378. The project consisted of screening for SDoH using the SEEK Model of care, with the novel approach of applying the screen to school-aged children and offering bi-weekly telehealth follow-up appointments for the project timeline duration of 8 weeks. The duration of 8 weeks of follow-up was selected because of the feasibility nature of the project and because current evidence suggests that even brief interventions with motivational interviewing have demonstrated effect.

The nursing staff assessed patients for study eligibility while performing clinic visit intake. When patients met inclusion criteria, the nursing staff notified the PI who remained within the clinic for recruitment. The PI then approached families while patients were waiting to be seen by their provider. The project was described to the potential participants and informed consent/minor assent was obtained if the participants agreed. The SEEK PQ-R was completed by parents/guardians via paper-and-pen in the patient room while the patient waited for the provider. The PI was available to answer questions or help parents complete the SEEK PQ-R if needed. The PI reviewed the questionnaire and for those who answered “yes” to any of the questions on the SEEK PQ-R (a positive screen), the PI implemented the REAP motivational interviewing technique to explore parents’ desire for help or readiness to make change. The parent/guardian participant was then asked if they would like to participate in the bi-weekly telehealth follow-up intervention. Those who did not wish to participate in follow-up visits were notified that they may contact the clinic if they later decided they wished to participate, and the PI would contact them to schedule follow-up visits. Participants who screened positive, whether they decided to participate in follow-up visits or not, were also offered SEEK written resources that were relevant to their social needs. Figures 3-9 show the SEEK written resources. For those who screened negative, only the negative screen was recorded and their participation in the project

was complete. All informed consent documents and SEEK PQ-R screens collected were stored in the clinic in a locked cabinet to which only the PI had access. The SEEK PQ-R screens included no sensitive patient identifiers as participants were assigned a project identification number. The key for project identification numbers was kept on paper and was stored separately in a locked cabinet within the clinic, to which only the PI had access.

Telehealth follow-up visits were scheduled for 30 minutes and were conducted via video-chat using the Microsoft Teams platform, which is HIPAA-compliant and already the established platform for telehealth visits at the clinic. During the initial telehealth follow-up visit the PI began with REAP motivational interviewing with the parent by reflecting on the SDoH problem identified, empathizing with the parent regarding the problem, assessing their attitude toward the problem and developing a plan for addressing the problem. Next, the PI discussed with the parent if any referral to local resources was needed, had been made, or if help was needed to facilitate referrals. At subsequent telehealth follow-up visits, the PI began with further REAP motivational interviewing with the parent, focused on the identified SDoH problem and concluding with follow-up on the status of any referrals to local resources.

Family demographic data was collected on all who agreed to participate in the follow-up portion of the project. Data included information on patient and parent(s) or primary caregiver(s): age; sex; race; insurance status (commercial, Medicaid or no insurance); education level; and employment status. Information on the number and make-up of household members was also collected. Parent/guardian participants as well as pediatric patients completed the PedsQL Quality of Life Inventory 4.0 Short Form (PedsQL) via Qualtrics, prior to the first telehealth follow-up visit and again at the end of the 8-week project follow-up period. PedsQL pre- and post-intervention scores were compared to evaluate the effect of SDoH screening and

intervention on pediatric health and well-being. Additional data collected included the total number of screens given, the number of positive screens and the number of those who agreed to participate in the project. These data were de-identified and stored in an encrypted Microsoft Excel file to which only the PI had access. The sociodemographic and PedsQL surveys were administered via Qualtrics, a secure survey platform approved for use by the University of Virginia School of Nursing (SON) and IRB-HSR. The data from the surveys was stored within Qualtrics until data analysis was conducted, at which time the data was downloaded by SON IT staff stripped of all identifiers except the assigned project identification number and shared with the project lead via the secure file-sharing service UVA Box.

Just prior to initial implementation during the Fall of 2021, an unprecedented and uncontrollable incident occurred in which the clinic's EMR system was entirely shut down due to a spyware attack on the external company maintaining their EMR system servers. This led to a delay in implementation as the clinic had to rapidly adjust processes to maintain patient care. The outage lasted for 1 month and significantly affected regular daily workflows throughout the outage, and for weeks after the EMR system was once again available. During an initial recruitment period, during which clinic attendance and workflows were not typical, only 1 participant was recruited for follow up. This was deemed to be insufficient for the project to progress, so a second recruitment period began during the Spring of 2022 with the goal of obtaining at least 5 participants in follow up. The second recruitment period concluded after approximately 8 weeks with a total of 5 new participants for follow up.

Measures

The SEEK PQ-R SDoH screening tool is a brief SDoH questionnaire that is designed to assess those SDoH that may contribute to child maltreatment, and for which resources are readily

available. Individuals may be reluctant to admit to socially undesirable behaviors, leading to a propensity to underreport less socially desirable behavior and overreport more socially desirable behavior, which is known as social desirability bias (Latkin et al., 2017). Because social desirability bias may influence the responses a parent gives, the screen begins with an empathetic statement: “Dear Parent or Caregiver: Being a parent is not always easy. We want to help families have a safe environment for kids. So, we’re asking everyone these questions about problems that affect many families. If there’s a problem, we’ll try to help.” (Dubowitz, 2014). This is followed by 16 questions designed to screen for SDoH risks in the family context (parental depression/anxiety, parental stress, parental substance abuse, parental smoking/tobacco use, intimate partner violence and harsh punishment) and for food insecurity. The questionnaire also includes a statement that parents may choose not to answer any question they do not feel comfortable answering. The questions are yes/no and a “yes” answer to any question indicates a positive screen. As identified in the review of the literature, many existing SDoH screening tools have not been assessed for psychometric properties. The SEEK PQ-R is one SDoH screening tool that has some psychometric properties assessed. During the development of the tool the questions pertaining to depression, intimate partner violence and substance abuse were assessed. The screen was assessed for stability by comparing participants answers to the screen at two different time points and because the first screen was administered via pen-and-paper and the second via computer the authors report on stability, rather than reliability, using Cohen’s k with a value of < 0.21 indicating no to slight agreement, 0.21 to 0.6 indicating fair to moderate agreement and > 0.6 indicating substantial to perfect agreement. The screen showed “moderate stability” for all areas assessed (Dubowitz et al., 2007, 2008; Lane et al., 2007). Validity was assessed by comparing questions from the screen pertaining to the 3 areas with other validated

tools. For depression questions the screen showed sensitivity of 74% and specificity of 80% with positive predictive value (PPV) of 36% and negative predictive value (NPV) of 95% (Dubowitz et al., 2007). For intimate partner violence questions there was sensitivity of 29%, specificity of 92%, PPV of 41% and NPV of 88% (Dubowitz et al., 2008). Substance abuse questions showed a sensitivity of 29%, specificity of 95%, PPV of 17% and NPV of 98% for drug use questions and a sensitivity of 13%, specificity of 96%, PPV of 33% and NPV of 87% for alcohol questions (Lane et al., 2007). Figure 10 is an image of the SEEK PQ-R screening tool.

The Pediatric Quality of Life Inventory (PedsQL) 4.0 Generic Core Scales Short-Form measures health-related quality of life (HRQOL) in pediatric patients and was designed to measure the core health dimensions outlined by the WHO (Hullmann et al., 2011). Specifically, the PedsQL includes 15 questions regarding problems with physical, emotional, social, and school functioning. It can be used in healthy children or children with an acute or chronic illness. The PedsQL includes forms for child and parent-proxy reporting for ages 5-18 years. For the children and parent-proxy versions of the PedsQL for ages 8-18 years responses are reported on a 5-point ordinal scale with 0 being “never” and 4 being “always). The scale is simplified to 3 response options for younger children with 0 being “not a problem at all”, 2 being “sometimes a problem”, and 4 being “a lot of a problem”. Responses are reverse scored and transformed to a 0-100 scale with a higher number indicating a higher HRQOL. Scores can be calculated for the Total HRQOL by scoring all questions in the tool, or by domains including physical and psychosocial domains. Physical Domain score is calculated using the Physical Functioning questions only. Psychosocial Domain score is calculated by scoring the Emotional, Social and School Functioning questions together. The PedsQL reports reliability for child self-report as Cronbach’s $\alpha = .91$ and parent-proxy report Cronbach’s $\alpha = 0.93$. Validity of the tool was

assessed by comparing PedsQL scores between healthy children and children with juvenile rheumatic diseases because these groups are known to differ in HQROL, finding a statistically significant difference between the two groups with healthy children reporting a higher HRQOL. See Figures 11-14 for images of the PedsQL 4.0 Generic Core Scales Short-Form.

Data Analysis

Descriptive statistics were conducted using IBM® SPSS® Statistics version 28.0.1.1 (14) on the follow-up participants' sociodemographic data and the number of screens administered in regard to positive results and follow-up participation. Because of the small sample size and feasibility nature of the project, inferential statistical analysis was not performed. Descriptive statistics were conducted on PedsQL pre- and post-intervention scores by Total, Physical Domain and Psychosocial Domain and median scores were compared for observed trends.

Results

Among the 6 parent follow-up participants, the mean(SD) age in years was 42.3(7.8) with a minimum of 31 years and a maximum of 53 years. Child participant's mean(SD) age in years was 9.3(2.8) with a minimum of 6 years and a maximum of 12 years. There were 4 female parent participants (66.7%) and 2 male parent participants (33.3%). Of note, while 2 participants reported male gender on the sociodemographic survey, the PI believed this to be an error. In working closely and directly with parent participants, the PI noted that only 1 participant was male while the remaining 5 were female and did not identify to the PI as another gender. Three participants were White (50%), 2 were Asian (33.3%), and 1 reported "Other" ethnicity (16.7%). Parent participants reported educational levels of 50% with graduate school degree, 33.3% with college degree and 16.7% with high school degree. All parent participants (100%) were "currently employed". Five of the parent participants (83.3%) reported having private insurance,

while 1 participant (16.7%) reported having Medicaid insurance. The number of household members ranged from 2 to 7. There were 2 single-parent households (33.3%) and 4 two-parent households (66.7%). These data are illustrated in Table 2.

A total of 52 SEEK PQ-R screens were administered with 32 negative screens (61.5%) and 20 positive screens (38.5%). Of those who screened positive, 12 agreed to participate in the follow-up program (23.1%) while 8 declined follow-up (15.4%). Among those who agreed to follow up, 6 participated and completed the follow-up program (11.5%). These data are illustrated in Table 3.

All 6 parent participants completed pre- and post-intervention PedsQL questionnaires. The median pre-intervention parent-proxy PedsQL Total score was 61.7 (IQR = 52.9-71.3) and the median post-intervention parent-proxy PedsQL Total score was 70.8 (IQR = 65.8-87.1), a positive difference of 9.1 points. The median pre-intervention parent-proxy PedsQL Physical Domain score was 75.0 (IQR = 61.3-100.0) and the median post-intervention parent-proxy PedsQL Physical Domain score was 92.5 (IQR = 76.3-100.00), a positive difference of 17.5 points. The median pre-intervention parent-proxy PedsQL Psychosocial Domain score was 52.5 (IQR = 45.0-64.4) and the median post-intervention parent-proxy PedsQL Psychosocial Domain score was 65.0 (IQR = 54.4-80.6), a positive difference of 12.5 points.

There were 4 completed pre- and post-intervention child report PedsQL questionnaires for comparison as 2 child participants did not complete the pre-intervention questionnaire. The median pre-intervention child report PedsQL Total score was 78.3 (IQR = 62.1-83.3) and the median post-intervention child report PedsQL Total score was 76.7 (IQR = 65.8-84.6), a negative difference of 1.6 points. The median pre-intervention child report PedsQL Physical Domain score was 87.5 (IQR = 70.0-97.5) and the median post-intervention child report PedsQL

Physical Domain score was 90.0 (IQR = 77.5-100.00), a positive difference of 2.5 points. The median pre-intervention child report PedsQL Psychosocial Domain score was 74.2 (IQR = 59.6-80.6) and the median post-intervention child report PedsQL Psychosocial Domain score was 68.75 (IQR = 60.0-77.5), a negative difference of 5.4 points. These data are illustrated in Table 4.

Discussion

The data shows that a relatively high percentage, 38%, of parents of school-aged children who were screened for SDoH needs using the SEEK PQ-R screened positive for at least 1 psychosocial need, indicating that the SEEK PQ-R seemed effective at eliciting potential SDoH needs among this age group in this practice setting. Additionally, there was interest in follow-up care for these identified needs, with 60% of those who screened positive agreeing to follow-up visits. However, there was also a high attrition rate with only 30% of those who screened positive actually participating and completing the 8-week follow-up program, despite many attempts to engage participants. Additionally, 40% of those who screened positive declined participation in follow-up care, indicating that some parents have awareness of needs but not readiness to address those needs, or perceive that the issue is not significant enough to warrant additional assistance. Nonetheless, identification of potential SDoH needs is valuable information to the pediatric provider, providing insight into psychosocial factors that may influence care delivery and allowing the provider to account for these factors when planning care.

Of those who participated in the follow-up program, the majority of parent participants were female, White, highly educated and privately insured, and all were employed. Most households had 2 parents, with both parents participating in the care of the children. These

sociodemographic characteristics indicate that even among highly educated, employed, and privately insured populations, SDoH needs may exist.

In comparing trends among the median scores of pre- and post-intervention PedsQL scores, it appears that the screening and follow-up intervention did seem to have some positive effect on pediatric HRQOL. The overall trend of median PedsQL scores showed an increase in post-intervention scores compared to pre-intervention. Parent participants seemed to observe greater improvement in pediatric HRQOL than child participants, with positive differences between median scores pre- and post-intervention for all three scoring categories. Child participants' median PedsQL scores were decreased pre- to post-intervention in the Total and Physical Domains and increased in the Physical Domain. However, the differences between child report pre- and post-intervention median scores were small compared to the differences in median scores among parent-proxy median scores. Parents appear to have observed notable differences in pediatric HRQOL post-intervention. Given that only 4 child participant PedsQL questionnaires were completed pre- and post-intervention, there is the possibility that if the median scores had included all child participants, the overall trend among child participants would have more closely reflected parent-proxy findings.

While qualitative data was not formally collected or analyzed for this project, some themes emerged during implementation. The most common reported SDoH psychosocial problem among all completed SEEK PQ-R screens was "extreme stress". This was also true of the participants who completed the follow-up program. Among the follow-up participants who reported extreme stress, most commonly the stress was job-related. Few participants reported on SDoH needs with food insecurity, intimate partner violence, alcohol, or substance use. This may be reflective of the types of SDoH and psychosocial issues that affect the patient population

served by the clinic, as the clinic is located in a relatively affluent rural community with, medical and academic institutions and higher-salary job opportunities.

The next most common positive response was parents' "wish for more help with your child". Often, this positive response co-occurred with a positive response for stress. A frequent statement by parents taking the SEEK PQ-R screen was "who doesn't want more help with their kids?". Among follow-up participants who reported stress and wishing for more help, themes of feeling stress with parenting due to struggles with work-life balance, general unhappiness related to jobs causing poor mood, and feeling generally overwhelmed were observed.

Themes regarding the decision not to participate in the project were observed as well. Many who elected not to complete the SEEK PQ-R reported that they felt the project seemed like "a great idea", but they did not perceive any SDoH needs and thus did not think they needed to participate. Often, a lack of time was cited as a reason not to participate with many reporting an inability to "commit to anything else". Among those who screened positive but declined participation, the most common reason was also perceived lack of time. Others were already aware of their SDoH needs and were engaged with resources to address the issue, thus feeling they did not need the further support of the follow-up program. If this model were more broadly implemented with SEEK PQ-R screening done universally at school-aged well-child visits, the psychosocial needs of families could be documented within patient EMR charts. This would help to ensure that providers are aware of potential needs at future visits and can continue attempts to engage parents with resources to address those needs, or to ensure that families remain connected with appropriate resources.

Follow-up generally proved to be a challenge. Follow-up visits were often missed or rescheduled requiring multiple attempts to connect with and engage participants. However, once

follow-up was begun, parents engaged enthusiastically. The motivational interviewing technique allowed parents to set goals for themselves, with some guidance and coaching by the PI. This led to all parents reporting perceived general improvement regarding their SDoH needs. Often, parents were aware of their need, such as counseling for stress or connection with resources for their child, and simply needed help identifying resources. Once participants were educated on resources that may be helpful and provided contact information, parents reported success in engaging those resources. All parent participants reported a positive experience with the follow-up program. Common themes were feeling supported by the program, appreciation for the continued encouragement to engage in resources or self-care, and appreciation of assistance in finding the appropriate resources.

This project had both strengths and limitations. Strengths of the design included the use of the SEEK PQ-R as the SDoH screening tool, which has some psychometric properties assessed, as compared to many other SDoH screening tools that do not. Additionally, use of the SEEK model with REAP motivational interviewing has evidence to show effectiveness and use of this model for follow-up visits lent strength to the design. The use of the validated PedsQL for outcome measurement is another strength. Engaging participants in follow-up presented a challenge, as many families screening positive for SDoH needs are already overwhelmed. In fact, of 20 parents who screened positive, 8 declined to participate in follow-up, several due to feeling “too busy” to commit. Additionally, of 12 parents who agreed to follow-up, only 6 engaged in follow-up visits and completed the project. Several reminders and flexible scheduling were often necessary to facilitate parents’ ability to engage in follow-up visits. The use of telehealth for follow-up was a strength in facilitating participation as this allowed for more flexibility in scheduling and presented less of a challenge to parents in attending visits as there was no need to

drive to, or find childcare during, visits. However, offering follow-up solely by telehealth may present a challenge for parents who do not have access to cellular or internet service and this is a population that may be at greater risk for SDoH problems. If this project were more broadly implemented, offering follow-up via multiple modalities, such as options for in-person, telehealth or via phone, would facilitate engaging more of those with SDoH problems.

Limitations included the small sample size of participants who completed the follow up portion of the project. Because of the small sample size, data from this project could not be statistically analyzed using inferential statistics and is not generalizable to the larger population. Additionally, the data analysis of the child participant pre- and post-intervention scores was limited by 2 missing pre-intervention PedsQL questionnaire responses. Another limitation is that quality of life data was not collected on the parents who participated in the follow up program. While understanding the effect SDoH screening and intervention on pediatric quality of life was the primary goal of the project, insight into how the project affected parents' quality of life would have added richer context. A third limitation involves the possibility that the nature of the implementation may have allowed some participants to self-select out of the project. Because the project was determined to be research, informed consent was performed prior to implementing screening with the SEEK PQ-R. The informed consent process involved a description of the SEEK PQ-R tool and the types of questions asked, which include sensitive social information, as well as what follow-up participation in the project would entail. Usual care using the SEEK model would include a more universal approach to administration of the SEEK PQ-R, with the tool given to all patients presenting for wellness visits at the beginning of the visit as part of routine care without emphasis on the sensitive nature of the screen. Because of social desirability bias, as discussed above, some participants may have elected not to complete the screen after

learning of the sensitive nature of the questions. Others reported that they did not feel they had any needs and thus declined to participate in the SEEK PQ-R screening. Some parents who declined participation reported a perceived lack of ability to “take on” any more commitments. If this project is more broadly implemented in future practice, administration as a universal screen would likely engage more parents to complete the screening, potentially identifying more individuals with SDoH needs and increased opportunities to address such needs.

There are several nursing implications for this project. This project provides further support for practice change to bring current pediatric practice up to date with AAP, AAFP and NAPNAP recommendations (Committee on Psychosocial Aspects of Child and Family Health et al., 2012; Oldfield et al., 2021; Spratling et al., 2019) for universal SDoH screening in pediatric primary care. Implementation of the SEEK PQ-R screening into routine wellness care for school-aged children will require teamwork between providers, such as advance practice registered nurses (APRNs) and physicians, and the nurses who administer the screens. This project identified that, among the school-aged population of this clinic, SDoH needs do exist, and universal screening may allow for improvement in clinician awareness of the SDoH needs of their patients.

Broader implementation of the SEEK PQ-R screen to include school-aged children also allows for greater potential to improve social circumstances of pediatric patients and thus decrease health disparities and long-term negative health consequences. While the data for this project was insufficiently robust to generalize findings to the larger population, it is promising that overall positive trends in HRQOL were found after participation in the follow-up program. Often at younger age child wellness visits many other screens are administered, such as autism and developmental screenings. Use of the SEEK model in school aged children may also allow

the opportunity to decrease screening burden on parents as one screen can capture the needs of an entire family with children of varying ages.

Engaging participants in follow-up required much time and effort on the part of the PI. It seems unlikely that a busy APRN or physician provider would have the ability to commit as much time and energy to follow-up engagement as did the PI during this project. However, after initial review and assessment of SEEK PQ-R screening identified needs, registered nurses could be utilized to work on follow-up engagement and counseling. Nurses are trained and experienced holistic healthcare providers who are trusted and respected by patients and families. Working with providers and families to address SDoH needs seems a natural fit for the clinic nurse.

Finally, the findings of this project align with the growing body of evidence on SDoH screening in pediatric healthcare. This project incorporated a novel approach of using the SEEK PQ-R screen in school-aged children. The SEEK model of care has previously only been studied in children 5 years and under and this project adds to the evidence on the SEEK model of care. Additionally, SDoH research to date has been lacking on patient outcomes related to SDoH screening and interventions. This project evaluated the feasibility of implementing a SDoH screening and intervention program and examined HRQOL as an outcome of intervention on SDoH needs. While the sample size is too small to be generalizable, the project findings support the current body of literature that endorses SDoH interventions and their positive impact on pediatric patients and their families. Further research on patient outcomes with SDoH screening and intervention is needed.

Conclusion

The findings of this DNP Scholarly Project provide evidence that SDoH screening and intervention among school-aged children using the SEEK Model of care is feasible within the

primary care setting and acceptable to caregivers of pediatric patients and support broader implementation and evaluation of SDoH screening and intervention within the clinic to include school-aged children. While the sample size was too small to generalize to larger populations, the evidence is promising that SDoH screening does identify needs and that intervention may improve HRQOL in pediatric patients, even among those who are demographically thought to be at a lower risk. Supporting parents with psychosocial needs allows the opportunity to reduce chronic stressors and facilitate healthy, loving relationships with their children which can reduce long-term health disparities and negative consequences of toxic stress. Future research on SDoH screening and intervention outcomes with a larger sample is recommended to further explore pediatric SDoH screening and intervention outcomes. Facilitators in future research and implementation of SDoH screening and intervention in pediatric primary care would include a universal approach to administration of the SDoH screen, allowing multiple follow-up modalities to engage as many parents as possible in addressing SDoH needs, and incorporating a multidisciplinary team approach to follow-up.

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Figure 1

Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram for the systematic search process.

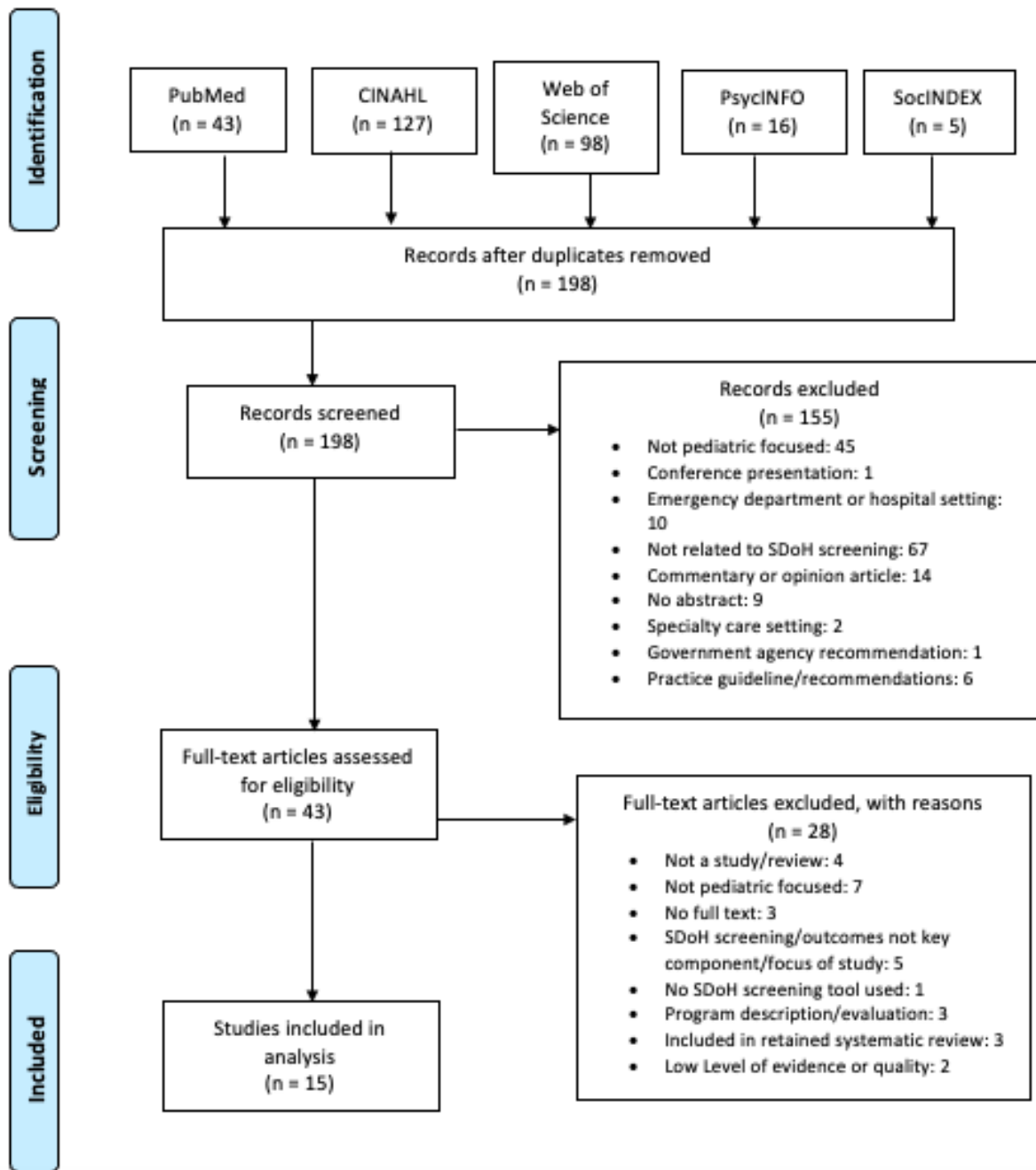


Figure 2

Johns Hopkins Nursing Evidence-Based Practice tools levels of evidence and grading criteria.

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Evidence Levels	Quality Ratings
<p>Level I</p> <p>Experimental study, randomized controlled trial (RCT)</p> <p>Explanatory mixed method design that includes only a level I quantitative study</p> <p>Systematic review of RCTs, with or without meta-analysis</p>	<p>Quantitative Studies</p> <p>A High quality: Consistent, generalizable results; sufficient sample size for the study design; adequate control; definitive conclusions; consistent recommendations based on comprehensive literature review that includes thorough reference to scientific evidence.</p> <p>B Good quality: Reasonably consistent results; sufficient sample size for the study design; some control, fairly definitive conclusions; reasonably consistent recommendations based on fairly comprehensive literature review that includes some reference to scientific evidence.</p> <p>C Low quality or major flaws: Little evidence with inconsistent results; insufficient sample size for the study design; conclusions cannot be drawn.</p> <p>Qualitative Studies</p> <p>No commonly agreed-on principles exist for judging the quality of qualitative studies. It is a subjective process based on the extent to which study data contributes to synthesis and how much information is known about the researchers' efforts to meet the appraisal criteria.</p> <p><i>For meta-synthesis, there is preliminary agreement that quality assessments of individual studies should be made before synthesis to screen out poor-quality studies².</i></p> <p>A/B High/Good quality is used for single studies and meta-syntheses².</p> <p>The report discusses efforts to enhance or evaluate the quality of the data and the overall inquiry in sufficient detail; and it describes the specific techniques used to enhance the quality of the inquiry. Evidence of some or all of the following is found in the report:</p> <ul style="list-style-type: none"> • Transparency: Describes how information was documented to justify decisions, how data were reviewed by others, and how themes and categories were formulated. • Diligence: Reads and rereads data to check interpretations; seeks opportunity to find multiple sources to corroborate evidence. • Verification: The process of checking, confirming, and ensuring methodologic coherence. • Self-reflection and scrutiny: Being continuously aware of how a researcher's experiences, background, or prejudices might shape and bias analysis and interpretations. • Participant-driven inquiry: Participants shape the scope and breadth of questions; analysis and interpretation give voice to those who participated. • Insightful interpretation: Data and knowledge are linked in meaningful ways to relevant literature. <p>C Low quality studies contribute little to the overall review of findings and have few, if any, of the features listed for high/good quality.</p>
<p>Level II</p> <p>Quasi-experimental study</p> <p>Explanatory mixed method design that includes only a level II quantitative study</p> <p>Systematic review of a combination of RCTs and quasi-experimental studies, or quasi-experimental studies only, with or without meta-analysis</p>	
<p>Level III</p> <p>Nonexperimental study</p> <p>Systematic review of a combination of RCTs, quasi-experimental and nonexperimental studies, or nonexperimental studies only, with or without meta-analysis</p> <p>Exploratory, convergent, or multiphasic mixed methods studies</p> <p>Explanatory mixed method design that includes only a level III quantitative study</p> <p>Qualitative study Meta-synthesis</p>	

<p>Level IV</p> <p>Opinion of respected authorities and/or nationally recognized expert committees or consensus panels based on scientific evidence</p> <p>Includes:</p> <ul style="list-style-type: none"> • Clinical practice guidelines • Consensus panels/position statements 	<p>A High quality: Material officially sponsored by a professional, public, or private organization or a government agency; documentation of a systematic literature search strategy; consistent results with sufficient numbers of well-designed studies; criteria-based evaluation of overall scientific strength and quality of included studies and definitive conclusions; national expertise clearly evident; developed or revised within the past five years</p> <p>B Good quality: Material officially sponsored by a professional, public, or private organization or a government agency; reasonably thorough and appropriate systematic literature search strategy; reasonably consistent results, sufficient numbers of well-designed studies; evaluation of strengths and limitations of included studies with fairly definitive conclusions; national expertise clearly evident; developed or revised within the past five years</p> <p>C Low quality or major flaws: Material not sponsored by an official organization or agency; undefined, poorly defined, or limited literature search strategy; no evaluation of strengths and limitations of included studies, insufficient evidence with inconsistent results, conclusions cannot be drawn; not revised within the past five years</p>
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<p>Level V</p> <p>Based on experiential and nonresearch evidence</p> <p>Includes:</p> <ul style="list-style-type: none"> • Integrative reviews • Literature reviews • Quality improvement, program, or financial evaluation • Case reports • Opinion of nationally recognized expert(s) based on experiential evidence 	<p>Organizational Experience (quality improvement, program or financial evaluation)</p> <p>A High quality: Clear aims and objectives; consistent results across multiple settings; formal quality improvement, financial, or program evaluation methods used; definitive conclusions; consistent recommendations with thorough reference to scientific evidence</p> <p>B Good quality: Clear aims and objectives; consistent results in a single setting; formal quality improvement, financial, or program evaluation methods used; reasonably consistent recommendations with some reference to scientific evidence</p> <p>C Low quality or major flaws: Unclear or missing aims and objectives; inconsistent results; poorly defined quality improvement, financial, or program evaluation methods; recommendations cannot be made</p> <p>Integrative Review, Literature Review, Expert Opinion, Case Report, Community Standard, Clinician Experience, Consumer Preference</p> <p>A High quality: Expertise is clearly evident; draws definitive conclusions; provides scientific rationale; thought leader(s) in the field</p> <p>B Good quality: Expertise appears to be credible; draws fairly definitive conclusions; provides logical argument for opinions</p> <p>C Low quality or major flaws: Expertise is not discernable or is dubious; conclusions cannot be drawn</p>
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Figure 3

SEEK Parent Handout on parental depression.





Depression

**Depression can happen to anyone.
Everybody feels sad sometimes.
If you feel sad a lot, you may need help.
It's not your fault. There is help!**

A person who is depressed may experience any of these symptoms:

- Feels sad most of the time
- Has trouble sleeping too much or not enough
- Does not feel like eating or eats more than normal
- Feels tired all the time
- Gets stressed out and angry easily
- Loses interest in things they used to like
- Has a hard time thinking, concentrating or making decisions
- Thinks about hurting oneself or wants to die



**It's very important for you to take care of yourself!
Your child needs you to be well; it's hard to be a good parent if you're feeling bad.
Please, talk to your doctor now if you feel sad or like hurting yourself.
Or, consider calling 911 for help – now.**

Here are other things you can do to take care of yourself:

- Do things that make you feel good, like exercising, watching a movie, walking
- Avoid extra stress
- Ask for help from someone you trust
- Do calming activities, like deep breathing, meditation, yoga
- Aim for 8 hours of sleep

**There is good treatment for depression. You can feel better again.
If you'd like help, please talk to your child's doctor or nurse.**

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Helpful Resources

Region Ten Community Services Board | www.regionten.org

- Offers services for those needing help for mental health and substance use issues
- Call the 24-Hr Crisis Line at **1-434-972-1800** or **1-866-694-1605** or the Recovery Support Line at **1-434-970-1455**

Addiction Allies | www.addictionallies.com

- Provides comprehensive mental health and substance use services
- Call **1-434-400-9668** or email info@addictionallies.com

UVA Family Stress Clinic | www.uvahealth.com/locations/profile/family-stress-clinic

- Provides counseling services for individuals, couples or families experiencing a variety of difficulties, such as anxiety, depression, child developmental or behavioral problems, job-related stress, family conflict and crisis
- Call **1-434-243-6868** for more info

Mental Health America of Virginia | www.mhav.org

- Peer-run warm line offers support for individuals, family members and other concerned parties who would like someone to talk to, info on community mental health resources or who have specific questions about their recovery journey
- Call **1-866-400-MHAV (1-866-400-6428)** M-F from 9am to 9pm, weekends and holidays from 5pm to 9pm
- Text **1-866-400-6428** for chat support in English from 5pm to 9pm on Wednesdays, Fridays & Saturdays
- Call or text for Spanish services every Friday and Saturday from 5pm to 9pm

Postpartum Support International (PSI) of Virginia | www.postpartum.net/get-help/psi-helpline

- Helpline volunteers available to listen, answer questions, offer encouragement and info on local resources
- Leave a confidential message and a volunteer will get in touch
- Call **1-800-944-4773** for English and Spanish
- Text **1-800-944-4773** for English or **1-971-203-7773** for Spanish

National Helpline | www.samhsa.gov

- 24/7, confidential, free information in English and Spanish
- Referrals to local treatment centers, support groups and community organizations
- Call **1-800-662-HELP (4367)** or **1-800-487-4889 (TTY)**

National Suicide Prevention Lifeline | www.suicidepreventionlifeline.org

- 24/7, confidential, free support in English and Spanish
- If you're in crisis or suicidal, you can call for yourself, or for someone you know
- You'll talk with a trained counselor at a suicide crisis center near you
- Call **1-800-273-TALK (8255)** or **1-800-628-9454** for Spanish

Depression and Bipolar Support Alliance | www.dbsalliance.org

- Information, referrals and Internet support groups






Figure 4

SEEK Parent Handout on discipline.



SEEK™
Safe Environment for Every Kid




Piedmont Pediatrics

Discipline

**Discipline is a way to teach your child how to behave well.
Being a parent can be hard. We all want kids to learn to behave.
Kids learn to manage feelings and disappointments when discipline is clear and consistent.
It takes self-control, patience and time!**

Set up a discipline plan for your family:

- Decide what behaviors are OK or not OK – how do you want your child to behave?
- Decide what rewards to give for good behavior
- Decide what consequences follow bad behavior
- Keep rules clear and simple
- Remind your child about expectations based on their age and development
- Be firm and consistent – all caregivers need to know how you discipline so everyone is doing the same thing



Helpful Tips:

- Correct bad behaviors when they happen. But, if you're very upset, take a time out to cool-off before going back to your child
- The best way to handle your child's anger is to remain calm
- Most challenging behaviors are annoying, yet minor, and best ignored
- It is important to tell and show your child how to behave since young children are still learning about their world
- Show your children how to behave, this is being a good role model
- Give your child rewards and praise for the good behaviors you want to see
- Show and tell your kids you love them, like giving hugs and saying you're proud of them

If you'd like help with discipline, please talk to your child's nurse or doctor.

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Helpful Resources

Families Forward Virginia | www.familiesforwardva.org

- Parenting specialists give guidance on issues such as child development, how to reduce parental stress, strengthen the parent-child bond and info on community resources
- Call **1-800-CHILDREN (1-800-244-5373)**

UVA Family Stress Clinic | www.uvahealth.com/locations/profile/family-stress-clinic

- Provides counseling services for individuals and families experiencing child developmental or behavioral problems (and other issues like anxiety, depression, job-related stress, family conflict and crisis)
- Call **1-434-243-6868** for more info

ReadyKids – Healthy Families of Charlottesville/Albemarle | www.readykidscville.org

- Offers tips, advice and support for your child's health and development, info on local resources and access to free counseling as needed
- Available for families who live in Charlottesville or Albemarle and have children up to five years old. Families must enroll before their child is three months old
- Call or text **1-434-882-1028**, email hf@readykidscville.org or complete the online referral form at www.readykidscville.org/family-support/healthy-families


Infant and Toddler Connection of the Blue Ridge

- Supports children (birth to 3) who have developmental delays, including social-emotional concerns (and other areas of development)
- Call **1-434-970-1391** or visit www.itcva.online

The National Parent Helpline | www.nationalparenthelpline.org
Call **1-855-427-2736** for English and Spanish, Monday – Friday, 10am to 7pm PST

The Helpline is open to parent and caregivers. A trained advocate will:

- Listen to you
- Help [you](#) problem-solve
- Help you take care of yourself
- Help connect you to local services
- Help you build on your own strengths and be a great parent



Behavior Checker | www.childrens.behaviorchecker.org

- Visit the website for parenting advice for over 150 common behavior concerns in children

If you're interested in learning about discipline:

- "1-2-3 Magic: Effective Discipline for Children Ages 2-12" by Thomas Payton; Child Management, 1996.
- "How to Talk so Kids Will Listen, How to Listen so Kids Will Talk" by Faber and [Mazlish](#); First Avon Books, 1999.
- Learn how to "Build Structure" for your child:
 - www.cdc.gov/parents/essentials/structure/building.html (English)
 - www.cdc.gov/parents/spanish/essentials/structure/buildingblocks.html (Spanish)

Figure 5

SEEK Parent Handout on drug and alcohol abuse.




Drugs and Alcohol

**Do you or someone you know have a problem with drugs or alcohol?
Lots of people have problems with drugs and alcohol.
Sometimes they can't see they have a problem.
Drug and alcohol abuse hurts people and their families.**

Signs of abuse are when someone:

- Wants to drink or use drugs most days
- Feels sick if they do not have a drink or a drug
- Misses work or school
- Has big mood swings and acts like a different person
- Often forgets things
- Has trouble eating or sleeping

People who abuse drugs or alcohol need help:

- They are hurting themselves and perhaps others
- They might feel sad and lonely or overwhelmed

If you use drugs or drink alcohol a lot, you risk:

- Harming your children
- Relationship problems
- Overdosing
- Dependence
- Poor health
- Accidents
- Legal problems



**There is help for drug and alcohol abuse!
If you'd like help, please talk to your child's doctor or nurse.**

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Helpful Resources



- Region Ten Community Services Board** | www.regionten.org
- Offers services for those needing help for substance use and mental health issues
 - Call the 24-Hr Crisis Line at **1-434-972-1800** or **1-866-694-1605** or the Recovery Support Line at **1-434-970-1455**
- Addiction Allies** | www.addictionallies.com
- Provides comprehensive substance use and mental health services
 - Call **1-434-400-9668** or email info@addictionallies.com
- Addiction Recovery Systems (ARS) of Pantagos**
- Resource for individuals diagnosed with opioid use disorder. This program provides methadone and suboxone, counseling with CASC-certified counselors and resource navigation
 - Call **1-434-220-0080** or visit www.arshealth.com/charlottesville-virginia-addiction-treatment for more info
- The University of Virginia Opioid Helpline**
- Free and confidential helpline that provides resources for those concerned about their opioid prescriptions or opioid use or the use of family or friends
 - Access to a behavioral support specialist who will help answer questions and provide education, support and referrals to community resources
 - Available M-F from 9am to 5pm ET
 - Call **1-877-OPIOIDS (1-877-674-6437)**
- Alcoholics Anonymous (AA) and Narcotics Anonymous (NA)**
- Fellowships of men and women who share their experience, strengths and hopes, to recover from alcoholism and drug addiction
 - For more info on AA in Charlottesville, call **1-434-293-6565** or visit www.aavirginia.org
 - For more info on NA in the Piedmont area, call **1-800-777-1515** or visit www.piedmontvana.org
- National Helpline** | www.findtreatment.gov
- Call **1-800-662-HELP (4357)** for 24/7, free and confidential information on treatment and recovery services - in English and Spanish - for anyone with a drug problem
 - Visit the website to find treatment near you
 - If you don't have insurance or are low-income, they'll help you find:
 - Free or low-cost treatment near you
 - Places that charge a sliding fee, or accept Medicare or Medicaid

If you do have health insurance, contact your insurer to find help



Figure 6

SEEK Parent Handout on parental stress.

Stress

We all have stress in our lives and need to learn how to handle it.
Stress is part of parenting. Children are a big responsibility.
Stress affects your whole family. Children learn how to deal with stress by watching you.
Learning to handle stress helps you and your family.

Your body may show emotional, physical and behavioral signs of stress:

Recognize *emotional* signs of stress:


- Anxiety, worry
- Anger
- Feeling agitated a lot
- Sadness
- Mood swings

Recognize *physical* signs of stress:

- Headaches
- Stiff neck
- Stomach problems
- Palpitations/racing heart beat

Recognize *behavioral* signs of stress:

- Over-reacting
- Acting impulsively
- Using alcohol or drugs
- Problem sleeping
- Withdrawing from relationships
- Changing jobs often
- Hard to concentrate



Don't let stress affect your family.
You need to feel good yourself to be a good parent.
If you'd like help, please talk to your child's doctor or nurse.

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Helpful Tips:

- Don't lose your cool, it's easy to get mad if your child whines or throws a tantrum
- Take a few moments to cool down, like slowly count to 10
- Practice calming activities, like deep breathing, meditation or yoga
- Get organized, like make a list of things to do and cross off ones that can wait
- Ask family or friends for help
- Take good care of yourself, like exercise, eat right and get enough sleep
- Make special time for your child every day, around a daily routine like bath time, mealtime, bedtime - even if it's only for 15 minutes
- Knowing your triggers may be the most important way to manage stress effectively

Helpful Resources



- Mental Health America of Virginia** | www.mhava.org
- Peer-run warm line offers support for individuals, family members and other concerned parties who would like someone to talk to, info on community resources or who have specific questions about their recovery journey
 - Call **1-866-400-MHAVA (1-866-400-6428)** M-F from 9am to 9pm and weekends and holidays from 5pm to 9pm
 - Text **1-866-400-6428** for chat support from 5pm to 9pm on Wednesdays, Fridays & Saturdays
 - Call or text for Spanish services every Friday and Saturday from 5pm to 9pm
- UVA Family Stress Clinic** | www.uvahealth.com/locations/profile/family-stress-clinic
- Provides counseling services for individuals, couples or families experiencing a variety of difficulties, such as anxiety, depression, child developmental or behavioral problems, job-related stress, family conflict and crisis
 - Call **1-434-243-6868** for more info
- ReadyKids - Healthy Families of Charlottesville/Albemarle** | www.readykidsville.org
- Offers tips, advice and support for your child's health and development, info on local resources and access to free counseling as needed
 - Available for families who live in Charlottesville or Albemarle and have children up to five years old. Families must enroll before their child is three months old
 - Call or text **1-434-882-1028**, email hf@readykidsville.org or complete the online referral form at www.readykidsville.org/family-support/healthy-families
- Families Forward Virginia** | www.familiesforwardva.org
- Parenting specialists give guidance on issues such as child development, how to reduce parental stress, strengthen the parent-child bond and info on community resources
 - Call **1-800-CHILDREN (1-800-244-5373)**
- The National Parent Helpline** | www.nationalparenthelpline.org
 Call **1-855-427-2736** for English and Spanish, Monday - Friday, 10am to 7pm PST
 The Helpline is for parents and caregivers. A trained advocate will:
- Listen to you
 - Help you problem-solve
 - Help you take care of yourself
 - Help connect you to services nearby
 - Help you build on your own strengths and be a great parent!
- 
- PPD Mom's Hotline**
- Available 24 hours a day, 7 days a week for moms and their loved ones
 - Offers support, information and referrals
 - Call **1-800-PPDOMOMS (1-800-773-6667)**
- Behavior Checker** | www.childrensbehaviorchecker.org
- Visit the website for parenting advice for over 150 common behavior concerns in children

Figure 7

SEEK Parent Handout on intimate partner violence.


Do You Feel Safe?

**Is anyone hurting or controlling you?
If so, you may be a victim of domestic violence.**

**Domestic violence is when one person hurts another person in a relationship.
It can cause you health problems – now and in the future.
It can also harm your child's emotional and physical health.**

Types of domestic violence:

- **Verbal:** Threatening to hurt you or your child
- **Psychological:** Calling you names or putting you down
- **Physical:** Slapping, choking or kicking you
- **Sexual:** Forcing you to have sex
- **Economic:** Not letting you work or go to school



Victims of domestic violence may feel:

- Many different things - it affects people in lots of ways
- Trapped or scared to leave or reach out for help
- Afraid, ashamed or alone

Create a Safety Plan:

- Individualized plan to keep your family safe when you're in a relationship, planning to leave or after you leave
- Helpful in a crisis when it's hard to think the same as when you're calm
- May include some of the following information, like a plan for how and where you can safely escape, bag prepared with important belongings, code word children know if they need to leave in an emergency, children know how to call 911 or a trusted contact
- Advocates from the National Domestic Violence Helpline can plan with anyone who is concerned about their own safety or safety of someone else

**You don't deserve to be treated this way!
Make your family a safe place for love, not violence.
If you'd like help, please tell your child's doctor or nurse.**

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Helpful Resources**Virginia Sexual and Domestic Violence Action Alliance** | www.vsdvalliance.org

- Statewide hotline available by calling **1-800-838-8238**, chat at www.vadata.org/chat or text at **1-804-793-9999**
- Also offers free, confidential legal advice and information to survivors

Shelter for Help in Emergency | www.shelterforhelpinemergency.org

- Offers emergency shelter, counseling, legal advocacy and services for children and youth
- Call the 24-hour hotline at **1-434-293-8509** or the Community Outreach Center at **1-434-963-4676**

Central Virginia Legal Aid Society | www.cvlas.org

- Provider of legal services for survivors of domestic violence
- Call **1-434-296-8851** or toll-free at **1-800-390-9983**

National Domestic Violence Hotline | www.thehotline.org

- Advocates available 24/7 for free, confidential help, information, crisis intervention, safety planning and connecting you to help nearby
- Help in over 200 languages
- Call **1-800-799-SAFE (7233)**, **1-800-787-3224 (TTY)** or **1-855-812-1001 (video phone - if deaf)**
- Visit the website and choose "Chat Now" for English 24/7. "Chat in Spanish" available daily from 12pm to 6pm CDT
- For your safety, computer use can be monitored and is impossible to completely hide so if you're afraid your usage might be monitored, call the hotline
- Pamphlets with information on domestic violence should be hidden, like in a shoe, under clothes in a closet or other safe location



Figure 8

SEEK Parent Handout on tobacco use.





Tobacco Use

Types of smoke and the risks:

First-hand smoke: Smoke directly inhaled by the smoker

- Up to 4 times higher risk of stroke or heart disease
- 15 to 30 times higher risk for lung cancer



Second-hand smoke: Smoke inhaled involuntarily from the use of others

- Cancer-causing toxins can be found in the blood of non-smokers, even after little exposure to second-hand smoke
- Children exposed to second-hand smoke are at a higher risk of upper respiratory and ear infections

Third-hand smoke: Smoke deposits left on clothing, skin and surfaces

- The young brain may be hurt by even very low levels of toxins
- Children are at risk because they often put their hands in their mouth after touching affected areas



Helpful Tips:

- Decide on something different to do when you want to smoke, like chewing gum
- Make a pledge to quit, and tell your family
- Talk with your doctor about a plan to quit
- Track progress, like making a “days smoke-free” calendar
- Make a list of triggers and a plan for staying away from them
- Sign up for reminder texts about why you want to quit at: www.smokefree.gov/tools-tips/text-programs

**Don't let tobacco hurt your family. Any smoke has risks.
To quit smoking, please talk to your or your child's doctor or nurse.**

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Helpful Resources

Quit Now Virginia

- Offers free and convenient resources to those who are ready to quit using tobacco or vaping
- Call **1-800-QUIT-NOW (1-800-784-8669)** or visit www.vdh.virginia.gov/tobacco-free-living/quit-now-virginia for more info

Smoking Quitline

- Call **1-877-44U-QUIT (1-877-448-7848)** for help in English and Spanish, Monday – Friday, 9am to 9pm EST

Freedom from Smoking | www.freedomfromsmoking.org

- Tools, tips and resources to quit smoking
- Call **1-800-LUNGUSA (1-800-586-4872)** for help in English and Spanish



Figure 9

SEEK Parent Handout on food insecurity.

**Food Assistance**

**It's scary when there's not enough food for your family.
Getting HEALTHY food is important for children's growing bodies and minds.**

Helpful Resources**Virginia WIC Program**

- WIC helps women and children, up to age 5, with free healthy foods, good advice on healthy eating and referrals to other health, welfare and social services
- Call **1-434-972-6200** ext. 4 or visit www.vdh.virginia.gov/wic to apply online

Virginia Supplemental Nutrition Assistance Program (SNAP)

- SNAP (food stamps) puts healthy food on the table for many families each month
- For more info or to apply online, visit www.commonhelp.virginia.gov

Bethel Urban and Rural Food Distribution Initiative | www.bcogic.com

- Food truck that provides nutritious boxed meals for free every Saturday from 9 am to noon (for all ages)
- Call **1-434-977-6447** or email bcogic621@gmail.com for more info
- **Buford Middle School Parking Lot, 1000 Cherry Avenue, Charlottesville 22903**

**Emergency Food Network | www.emergencyfoodnetwork.org**

- Residents living in Charlottesville or Albemarle County can call once a month to get a 3-day supply of food
- Call **1-434-979-9180** on Monday or Friday between 9am and noon to request food. Pick-up will be the same day between 1:30pm and 3:30pm
- Visit www.emergencyfoodnetwork.org/index.php/in-need/in-need for more info
- **900 Harris Street, Charlottesville 22903**

Loaves and Fishes | www.cvilleloaves.org

- USDA groceries and "pantry" groceries available. Visit the website (above) for more info
- Call **1-434-996-7868**
- **2050 Lambs Road, Charlottesville 22901**

If you need help finding food, please talk to your child's doctor or nurse.

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Virginia 211 Emergency Food Assistance | www.211virginia.org

- Dial 2-1-1 or search online at www.211virginia.org

Child Nutrition Programs | www.fns.usda.gov/cn

- To learn about and enroll in free or reduced rate school lunches and breakfasts, talk to your child's school guidance counselor
- Visit the website to find food programs nearby

USDA National Hunger Hotline

- For info on how your family can get food, call **1-866-3-HUNGRY** for English or **1-877-8-HAMBRE** for Spanish

Feeding America | www.feedingamerica.org

- Visit the website to find free emergency food nearby
- Visit www.feedingamerica.org/en-espanol for help in Spanish



**Try to give your children HEALTHY food choices.
With planning and help, you can give your family the food they need.**

Figure 10

SEEK PQ-R questionnaire.



Parent Questionnaire - R

Dear Parent or Caregiver: Being a parent is not always easy. We want to help families have a safe environment for kids. So, we're asking everyone these questions about problems that affect many families. If there's a problem, we'll try to help.

Please answer the questions about your child being seen today for a checkup. If there's more than one child, please answer "yes" if it applies to any one of them. This is voluntary. You don't have to answer any question you prefer not to. This information will be kept private, unless we're worried about your child's safety.

Today's Date: ___/___/___

Child's Name: _____

Child's Date of Birth: ___/___/___

Relationship to Child: _____

PLEASE CHECK

- Yes No Would you like us to give you the phone number for Poison Control?
- Yes No Do you need to get a smoke alarm for your home?
- Yes No Does anyone smoke at home?
- Yes No In the past 12 months, did you worry that your food would run out before you could buy more?
- Yes No In the past 12 months, did the food you bought just not last and you didn't have money to get more?
- Yes No Do you often feel your child is difficult to take care of?
- Yes No Do you sometimes find you need to slap or hit your child?
- Yes No Do you wish you had more help with your child?
- Yes No Do you often feel under extreme stress?
- Yes No Over the past 2 weeks, have you often felt down, depressed, or hopeless?
- Yes No Over the past 2 weeks, have you felt little interest or pleasure in doing things?

Thinking about the past 3 months

- Yes No Have you and a partner fought a lot?
- Yes No Has a partner threatened, shoved, hit or kicked you or hurt you physically in any way?
- Yes No Have you had 4 or more drinks in one day?
- Yes No Have you used an illegal drug or a prescription medication for nonmedical reasons?
- Yes No Other things you'd like help with today: _____

Please give this form to the doctor or nurse you're seeing today. We encourage you to discuss anything on this list with her or him. Thank you!

Figure 11

Pediatric Quality of Life Inventory 4.0 Generic Core Scales Short-Form child report for ages 5-7 years.

ID# _____
Date: _____

PedsQL™

Pediatric Quality of Life Inventory

Version 4.0 Short Form (SF15)

YOUNG CHILD REPORT (ages 5-7)

Instructions for interviewer:

I am going to ask you some questions about things that might be a problem for some children. I want to know how much of a problem any of these things might be for you.

Show the child the template and point to the responses as you read.

If it is not at all a problem for you, point to the smiling face

If it is sometimes a problem for you, point to the middle face

If it is a problem for you a lot, point to the frowning face

I will read each question. Point to the pictures to show me how much of a problem it is for you. Let's try a practice one first.

Is it hard for you to snap your fingers	Not at all ☺	Sometimes ☹	A lot ☠
---	-----------------	----------------	------------

Ask the child to demonstrate snapping his or her fingers to determine whether or not the question was answered correctly. Repeat the question if the child demonstrates a response that is different from his or her action.

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PedsQL 2

Think about how you have been doing for the last few weeks. Please listen carefully to each sentence and tell me how much of a problem this is for you.

After reading the item, gesture to the template. If the child hesitates or does not seem to understand how to answer, read the response options while pointing at the faces.

PHYSICAL FUNCTIONING (problems with...)	Not at all	Some-times	A lot
1. Is it hard for you to walk	0	2	4
2. Is it hard for you to run	0	2	4
3. Is it hard for you to play sports or exercise	0	2	4
4. Is it hard for you to pick up big things	0	2	4
5. Is it hard for you to do chores (like pick up your toys)	0	2	4

Remember, tell me how much of a problem this has been for you for the last few weeks.

EMOTIONAL FUNCTIONING (problems with...)	Not at all	Some-times	A lot
1. Do you feel scared	0	2	4
2. Do you feel sad	0	2	4
3. Do you feel mad	0	2	4
4. Do you worry about what will happen to you	0	2	4

SOCIAL FUNCTIONING (problems with...)	Not at all	Some-times	A lot
1. Is it hard for you to get along with other kids	0	2	4
2. Do other kids say they do not want to play with you	0	2	4
3. Do other kids tease you	0	2	4

SCHOOL FUNCTIONING (problems with...)	Not at all	Some-times	A lot
1. Is it hard for you to pay attention in school	0	2	4
2. Do you forget things	0	2	4
3. Is it hard to keep up with schoolwork	0	2	4

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Figure 12

Pediatric Quality of Life Inventory 4.0 Generic Core Scales Short-Form parent report for ages 5-7 years.

ID#	_____
Date:	_____

PedsQL™ Pediatric Quality of Life Inventory

Version 4.0 Short Form (SF15)

PARENT REPORT for YOUNG CHILDREN (ages 5-7)

DIRECTIONS

On the following page is a list of things that might be a problem for **your child**. Please tell us **how much of a problem** each one has been for **your child** during the **past ONE month** by circling:

0 if it is **never** a problem
1 if it is **almost never** a problem
2 if it is **sometimes** a problem
3 if it is **often** a problem
4 if it is **almost always** a problem

There are no right or wrong answers.
If you do not understand a question, please ask for help.

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PedsQL 2

In the past ONE month, how much of a problem has your child had with ...

PHYSICAL FUNCTIONING (problems with...)	Never	Almost Never	Some- times	Often	Almost Always
1. Walking more than one block	0	1	2	3	4
2. Running	0	1	2	3	4
3. Participating in sports activity or exercise	0	1	2	3	4
4. Lifting something heavy	0	1	2	3	4
5. Doing chores, like picking up his or her toys	0	1	2	3	4

EMOTIONAL FUNCTIONING (problems with...)	Never	Almost Never	Some- times	Often	Almost Always
1. Feeling afraid or scared	0	1	2	3	4
2. Feeling sad or blue	0	1	2	3	4
3. Feeling angry	0	1	2	3	4
4. Worrying about what will happen to him or her	0	1	2	3	4

SOCIAL FUNCTIONING (problems with...)	Never	Almost Never	Some- times	Often	Almost Always
1. Getting along with other children	0	1	2	3	4
2. Other kids not wanting to be his or her friend	0	1	2	3	4
3. Getting teased by other children	0	1	2	3	4

SCHOOL FUNCTIONING (problems with...)	Never	Almost Never	Some- times	Often	Almost Always
1. Paying attention in class	0	1	2	3	4
2. Forgetting things	0	1	2	3	4
3. Keeping up with school activities	0	1	2	3	4

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Figure 13

Pediatric Quality of Life Inventory 4.0 Generic Core Scales Short-Form child report for ages 8-12 years.

ID# _____
 Date: _____

PedsQL™

Pediatric Quality of Life Inventory

Version 4.0 Short Form (SF15)

CHILD REPORT (ages 8-12)

DIRECTIONS

On the following page is a list of things that might be a problem for you. Please tell us **how much of a problem** each one has been for you during the **past ONE month** by circling:

0 if it is **never** a problem
1 if it is **almost never** a problem
2 if it is **sometimes** a problem
3 if it is **often** a problem
4 if it is **almost always** a problem

There are no right or wrong answers.
If you do not understand a question, please ask for help.

PedsQL 4.0 - (8-12)-SF15
03/00
PedsQL 4.0-Core-SF15 -- United States/English -- Original version
PedsQL 4.0-SF-15-Core-C_AKA3_eng-US01

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PedsQL 2

In the past ONE month, how much of a problem has this been for you ...

ABOUT MY HEALTH AND ACTIVITIES (problems with...)	Never	Almost Never	Sometimes	Often	Almost Always
1. It is hard for me to walk more than one block	0	1	2	3	4
2. It is hard for me to run	0	1	2	3	4
3. It is hard for me to do sports activity or exercise	0	1	2	3	4
4. It is hard for me to lift something heavy	0	1	2	3	4
5. It is hard for me to do chores around the house	0	1	2	3	4

ABOUT MY FEELINGS (problems with...)	Never	Almost Never	Sometimes	Often	Almost Always
1. I feel afraid or scared	0	1	2	3	4
2. I feel sad or blue	0	1	2	3	4
3. I feel angry	0	1	2	3	4
4. I worry about what will happen to me	0	1	2	3	4

HOW I GET ALONG WITH OTHERS (problems with...)	Never	Almost Never	Sometimes	Often	Almost Always
1. I have trouble getting along with other kids	0	1	2	3	4
2. Other kids do not want to be my friend	0	1	2	3	4
3. Other kids tease me	0	1	2	3	4

ABOUT SCHOOL (problems with...)	Never	Almost Never	Sometimes	Often	Almost Always
1. It is hard to pay attention in class	0	1	2	3	4
2. I forget things	0	1	2	3	4
3. I have trouble keeping up with my schoolwork	0	1	2	3	4

Figure 14

Pediatric Quality of Life Inventory 4.0 Generic Core Scales Short-Form parent report for ages 8-12 years.

ID# _____
 Date: _____

PedsQL™

Pediatric Quality of Life Inventory

Version 4.0 Short Form (SF15)

PARENT REPORT for CHILDREN (ages 8-12)

DIRECTIONS

On the following page is a list of things that might be a problem for **your child**. Please tell us **how much of a problem** each one has been for **your child** during the **past ONE month** by circling:

0 if it is **never** a problem
1 if it is **almost never** a problem
2 if it is **sometimes** a problem
3 if it is **often** a problem
4 if it is **almost always** a problem

There are no right or wrong answers.
If you do not understand a question, please ask for help.

PedsQL 4.0 - Parent (8-12)-SF15
03/00

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PedsQL 2

In the past ONE month, how much of a problem has your child had with ...

PHYSICAL FUNCTIONING (problems with...)	Never	Almost Never	Some- times	Often	Almost Always
1. Walking more than one block	0	1	2	3	4
2. Running	0	1	2	3	4
3. Participating in sports activity or exercise	0	1	2	3	4
4. Lifting something heavy	0	1	2	3	4
5. Doing chores around the house	0	1	2	3	4

EMOTIONAL FUNCTIONING (problems with...)	Never	Almost Never	Some- times	Often	Almost Always
1. Feeling afraid or scared	0	1	2	3	4
2. Feeling sad or blue	0	1	2	3	4
3. Feeling angry	0	1	2	3	4
4. Worrying about what will happen to him or her	0	1	2	3	4

SOCIAL FUNCTIONING (problems with...)	Never	Almost Never	Some- times	Often	Almost Always
1. Getting along with other children	0	1	2	3	4
2. Other kids not wanting to be his or her friend	0	1	2	3	4
3. Getting teased by other children	0	1	2	3	4

SCHOOL FUNCTIONING (problems with...)	Never	Almost Never	Some- times	Often	Almost Always
1. Paying attention in class	0	1	2	3	4
2. Forgetting things	0	1	2	3	4
3. Keeping up with schoolwork	0	1	2	3	4

Table 1*Summary of articles retained in the literature review (n=15)*

Citation (Author; Year)	Study Purpose	Study Design	Sample	Findings	JHNEBP Rating	Theme
Berger-Jenkins, E., Monk, C., D'Onfro, K., Sultana, M., Brandt, L., Ankam, J., Vazquez, N., Lane, M., & Meyer, D. (2019)	To implement comprehensive screening for child behavior and SDoH in pediatric primary care and explore rates of referrals and follow up for positive screens.	Non- experimental	Convenience sample of charts for patients screened during the first 4 months of implementation	Combined psychosocial screening in low-income resource poor clinics is feasible. Many who screened positive did not have previous documentation of behavioral or social concerns. Follow up rates were relatively high without promotion of adherence-promoting resources, Low percentages of screens resulted in referral to social workers and present evidence against argument that universal screening will overwhelm the system.	III; B	Screening and follow up

Citation (Author; Year)	Study Purpose	Study Design	Sample	Findings	JHNEBP Rating	Theme
Byhoff, E., De Marchis, E. H., Hessler, D., Fichtenberg, C., Adler, N., Cohen, A. J., Doran, K. M., Ettinger de Cuba, S., Fleegler, E. W., Gavin, N., Huebschmann, A. G., Lindau, S. T., Tung, E. L., Raven, M., Jepson, S., Johnson, W., Olson, A. L., Sandel, M., Sheward, R. S., & Gottlieb, L. M. (2019)	To qualitatively explore patient and caregiver perspectives on social needs screening across diverse healthcare settings	Qualitative	Adult patients and caregivers of pediatric patients. From 10 different healthcare settings across 9 states.	Broad consensus among participants that social risk screening was acceptable. Main themes included: participants believed social risk screening is important, participants expressed insight into connections between social risks and overall health, participants emphasized importance of patient-centeredness of care (delivering screening in empathetic and compassionate manner) and participants recognized limits of healthcare system to address social needs, but felt that screening was beneficial nonetheless	III; A/B	Patient acceptance/perceptions

Citation (Author; Year)	Study Purpose	Study Design	Sample	Findings	JHNEBP Rating	Theme
De Marchis, E. H., Hessler, D., Fichtenberg, C., Adler, N., Byhoff, E., Cohen, A. J., Doran, K. M., Ettinger de Cuba, S., Fleegler, E. W., Lewis, C. C., Lindau, S. T., Tung, E. L., Huebschmann, A. G., Prather, A. A., Raven, M., Gavin, N., Jepson, S., Johnson, W., Ochoa, E., ... Gottlieb, L. M. (2019)	Assess the acceptability of social risks screening in diverse healthcare settings	Non- experimental	Adult patients and adult caregivers of pediatric patients recruited from 10 different healthcare settings across 9 states (family medicine, internal medicine, general EDs, pediatric EDs)	79% of participants were "very" or "somewhat comfortable" with social risk screening, 65% were "very or "somewhat comfortable" with documentation in EMR. Prior exposure to social risk screening, trust in clinicians, prior healthcare discrimination, recruitment from primary care and recruitment from site with high percentage of publicly insured/uninsured patients were significantly associated with screening appropriateness. Prior exposure to social assistance significantly associated with documentation comfort.	III; B	Patient acceptance/ perceptions

Citation (Author; Year)	Study Purpose	Study Design	Sample	Findings	JHNEBP Rating	Theme
Eismann, E. A., Folger, A. T., Shapiro, R. A., Sivertson, S., Brown, K., Wesseler, S. A., & Huynh, J. (2021)	Assessed feasibility and acceptability of ParentConnex (a positive parenting program that integrates screening and co-located parent coaching with pediatric primary care)	Non-experimental	Eleven practices within the Cincinnati metropolitan area implemented the program	Feasibility - All 11 practices implemented screening at targeted well-child visits, completed at 65% of visits with wide range between practices. Lower percent Medicaid population significantly correlated with higher completion rates. Screen positive 26% of the time. 12% of families were referred to parent coaches as result of screening. Acceptability - Increase in belief of sufficient support in practice for addressing parenting and family psychosocial concerns, increase in confidence and ability to address concerns and knowledge of resources, reported very likely to recommend the program to a colleague	V; A	Screening and follow-up, Facilitators/barriers

Citation (Author; Year)	Study Purpose	Study Design	Sample	Findings	JHNEBP Rating	Theme
Emengo, V. N., Williams, M. S., Odusanya, R., Uwemedimo, O. T., Martinez, J., Pekmezaris, R., & Kim, E. J. (2020)	To qualitatively assess a comprehensive SDoH screening and referral program by exploring the attitudes and beliefs of families participating in the program	Qualitative	Families of a medical center pediatric primary care clinic who screened positive for social needs and accepted assistance of trained patient navigators as part of the SHAPE program	Three major themes: Structure: caregivers satisfied with tool and location of survey administration, length of screening survey. Process: Use of trained patient navigators appeared to be instrumental to successful implementation of the program, patients preferred to be screened by patient navigators versus physicians as they felt that navigators had the time to do it. Patient navigators enabled timely referrals to resources. Outcome: Caregivers would recommend the program, perceived it to offer social support. Helped families to recognize social risks as contributors to child overall health and as motivators for caregivers' own health.	III; A/B	Patient acceptance/perceptions
Fiori, K. P., Rehm, C. D., Sanderson, D., Braganza, S., Parsons, A., Chodon, T., Whiskey, R., Bernard, P., & Rinke, M. L. (2020)	To assess the effectiveness of Community Linkage to Care (CLC) pilot program with primary outcome being successful referral to social services.	Non-experimental	Patients who screened positive for social needs and were referred to in-house community health workers for assistance with referral to social services	72% of eligible patients screened, 20% positive for social needs, 287/984 positive screens referred to community health workers (CHWs). 43% of those referred to CHWs had successful social services referrals. Follow up time of < 30 days was statistically significantly associated with successful referral. Those with > 4 outreach attempts were more likely to have successful referral.	III; B	Screening and follow-up

Citation (Author; Year)	Study Purpose	Study Design	Sample	Findings	JHNEBP Rating	Theme
Herrera, C.-N., Brochier, A., Pellicer, M., Garg, A., & Drainoni, M.-L. (2019)	Explore clinician and staff perspectives of implementing routine SDoH screening and referral program	Qualitative	Clinicians and staff of community health centers that implemented augmented WE CARE model into practice as part of a RCT	Themes uncovered included staff overall perceived screening and referral model to be beneficial to patients, prioritization of the program was complicated by environment - some found it easy to implement while others reported frustrations, patient navigators were heavily relied upon and perceived as beneficial and in some cases necessary to address SDoH, frustrations with lack of available community resources to meet needs and timeline for accessing benefits.	III; A/B	Facilitators/ barriers
Morone, J. (2017)	To evaluate the SDoH screening tools used in pediatric settings	Systematic review	Studies relevant to the assessment of SDoH domains in pediatric settings	Heterogeneity of types of SDoH screening tools and methods for assessment. Few assessed for validity or reliability. Few included youth or families in development of tools. Only 2 of the 13 included all 5 SDoH domains outlined by Healthy People 2020.	III; B	Screening tools assessment

Citation (Author; Year)	Study Purpose	Study Design	Sample	Findings	JHNEBP Rating	Theme
O'Brien, K. H. (2019)	Systematic review to identify what screening tools for SDoH have been used in research and clinical practice and in what settings and populations the tools have been used.	Systematic Review	Articles included that were research studies published in English, targeted individuals receiving medical care and utilized a screening tool for SDoH	Variety of screening tools for SDoH exist and are being used in diverse settings and populations. Many address only 1 SDoH domain, 4 comprehensive SDoH tools identified. While reliability and validity was reported for most SDoH screening tools, data to support these claims were often unreported with only 17 of 39 studies including Cronbach alpha scores. Results indicate that screening in the healthcare setting can be done, but that it may be difficult to determine the internal consistency of instruments before use in practice.	III; B	Screening tools assessment

Citation (Author; Year)	Study Purpose	Study Design	Sample	Findings	JHNEBP Rating	Theme
Oldfield, B. J., Casey, M., DeCew, A., Morales, S. I., & Olson, D. P. (2021)	To characterize parents' and adolescents' preferences for receipt of social needs information and to compare performance of 2 social needs screening tools: WE CARE and AHC social needs screening tool	Non-experimental	Adolescents and parents of children presenting for visits at a FQHC in New Haven, CT	Process of screening took < 6 minute to complete on average. Parents preferred text message, paper printout or email to receive information. Teens preferred text message or paper printout. Both groups least preferred in-person care coordination. Majority of parents screened positive for ≥ 3 SDoH. Agreement between parents and teens between WE CARE and AHC on 3 domains varied by domain. Interrater reliability averaged 82% for WE CARE and 85% for AHC. AHC identified more positive screens for housing and food insecurity while WE CARE identified more positive screens for difficulty paying for utilities. Both parents and teens were comfortable with screening.	III; B	Patient acceptance/perceptions
Orr, C. J., Chauvenet, C., Ozgun, H., Pamanes-Duran, C., & Flower, K. B. (2019)	To explore caregivers' experiences with food insecurity, screening acceptability and resource utilization	Qualitative	English and Spanish speaking caregivers of children aged 1-5 years who screened positive for food insecurity	Themes included varying degrees of food insecurity as well as fluctuation in timing of food insecurity (monthly, different times of the month, seasonally), most found screening in clinic setting acceptable, most used WIC but were not aware of/did not use clinic or other community resources.	III; A/B	Patient acceptance/perceptions

Citation (Author; Year)	Study Purpose	Study Design	Sample	Findings	JHNEBP Rating	Theme
Palakshappa, D., Goodpasture, M., Albertini, L., Brown, C. L., Montez, K., & Skelton, J. A. (2020)	To determine the difference in Food Insecurity (FI) disclosure rates by parents/ guardians screened by written questionnaire compared to verbal screening	Quasi- experimental	Patients of a pediatric primary care clinic presenting for well-child visits and screened for FI	Significant increase in FI disclosure and documentation rates following implementation of written FI screening vs. verbal screening (using the same 2- item Hunger Vital Signs screening tool)	II; B	Screening tools assessment
Patel, M., Bathory, E., Scholnick, J., White- Davis, T., Choi, J., & Braganza, S. (2018)	To assess the use of a formal social history taking tool after an education intervention	Quasi- experimental	Charts completed at well child visits by residents in a pediatric FHQC	Resident documentation of 2 of the 6 domains (Food and Housing Insecurity) showed statistically significant increase after the 2-phase intervention. Time constraints may have contributed to lack of increase in other domains, additionally Education domain documentation rates were already high at baseline.	II; B	Facilitators/ barriers

Citation (Author; Year)	Study Purpose	Study Design	Sample	Findings	JHNEBP Rating	Theme
Purkey, E., Bayoumi, I., Coe, H., Maier, A., Pinto, A. D., Olomola, B., Klassen, C., French, S., & Flavin, M. (2019)	Exploratory study of "real world" implementation of clinical poverty screening tool - sought to examine uptake of screening for poverty, evaluate acceptability to patients and explore health care providers' experiences with implementation	Mixed-methods	Implemented by a convenience sample of 22 HCPs in family medicine and pediatric care settings at 12 sites	Despite implementing among a group of motivated HCPs, only 9% of patients were screened over 3-month period. Among those screened ,28% screened positive for poverty and the majority were referred to resources. HCPs largely viewed screening as acceptable and important but identified barriers including difficulty remembering to perform screening, workflow or EHR challenges, feelings of inadequacy or lack of expertise and lack of resources.	III; B	Facilitators/ barriers

Citation (Author; Year)	Study Purpose	Study Design	Sample	Findings	JHNEBP Rating	Theme
Sokol, R., Austin, A., Chandler, C., Byrum, E., Bousquette, J., Lancaster, C., Doss, G., Dotson, A., Urbaeva, V., Singichetti, B., Brevard, K., Wright, S. T., Lanier, P., & Shanahan, M. (2019)	Systematic review of SDoH screening tools used with children, examine psychometric properties, and evaluate how they detect early predictors of risk and inform care	Systematic Review	17 articles retained including studies in which a tool was developed tested and/or employed	Eleven unique screening tools identified. Majority of screeners were either validated, relevant to priority population or accompanied by appropriate follow-up referrals but minority included all 3. Central theme is the extent to which screening professionals can trust results – only 3 had been tested for reliability/validity. Noted that a critique of screening for ACES is lack of appropriate follow up resources but this review did not find evidence of that as in the majority of studies immediate referrals were placed.	III; B	Screening tools assessment, Screening and follow up

Note. Articles were evaluated for level of evidence and grade using the Johns Hopkins Nursing Evidence Based Practice (JHNEBP) tools

Table 2*Sociodemographic characteristics of follow-up program participants (n = 6 parent-child dyads)*

Age in Years	Mean(SD)	Median(IQR)	Min	Max
Parent	42.3(7.8)	42.5(36.3-48.5)	31	53
Child	9.3(2.8)	10.0(6.0-12.0)	6	12

Parent Characteristics	n	%
Gender		
Female	4	66.7
Male ^a	2	33.3
Ethnicity		
White	3	50.0
Asian	2	33.3
Other	1	16.7
Education		
High School Degree	1	16.7
College Degree	2	33.3
Graduate School Degree	3	50.0
Employment		
Currently Employed	6	100.0
Not Currently Employed	0	0.0
Insurance Type		
Private	5	83.3
Medicaid	1	16.7

Note. Sociodemographic survey completed online via Qualtrics.

^aTwo participants reported male gender on the sociodemographic survey, however the principal investigator believes this to be an error. In working closely and directly with parent participants, the project lead notes that only 1 participant was male while the remaining 5 were female and did not identify to the project lead as another gender.

Table 3*SEEK PQ-R screening results and follow-up participation (n = 52)*

	n	% of Total	% of Positives
SEEK PQ-R Result^a			
Positive Screen	20	38.5	--
Negative Screen	32	61.5	--
Follow-up Participation			
Agreed to Follow-Up	12	23.1	60
Declined Follow-Up	8	15.4	40
Participated in Follow-up	6	11.5	30

Note. SEEK = Safe Environment for Every Kid; SEEK PQ-R = screening tool utilized for SDoH screening.

^aA “yes” answer to any question on the SEEK PQ-R indicates a positive screen

Table 4*Comparison of PedsQL scores before and after 8-week SEEK follow-up program*

PedsQL Scores	Mean (SD)		Median (IQR)	
	Before	After	Before	After
Parent Total (n=6)	63.3(14.6)	73.9(11.6)	61.7(52.9-71.3)	70.8(65.8-87.1)
Parent Physical	77.5(20.7)	88.3(14.4)	75.0(61.3-100.0)	92.5 (76.3-100.0)
Parent Psychosocial	56.3(15.0)	66.7(12.8)	52.5(45.0-64.4)	65.0(54.4-80.6)
Child Total (n=4) ^a	74.6(11.8)	75.8(10.4)	78.3(62.1-83.3)	76.7(65.8-84.6)
Child Physical	85.0(14.7)	88.3(12.1)	87.5(70.0-97.5)	90.0(77.5-100.0)
Child Psychosocial	71.5(11.7)	69.6(10.3)	74.2(59.6-80.6)	68.8(60.0-77.5)

Note. PedsQL = The Pediatric Quality of Life Inventory (PedsQL) 4.0 Generic Core Scales

Short-Form which measures health-related quality of life in pediatric patients. PedsQL can be

scored by total overall score, and by domains of physical or psychosocial; SEEK = Safe

Environment for Every Kid, a model of healthcare using the SEEK PQ-R social determinants of health screening tool and motivational interviewing follow-up.

^a Only 4 child participants completed PedsQL questionnaires before the follow-up program so 2 child participant scores were not available for pre- and post-intervention comparison

Appendix

DNP Scholarly Project Defense Presentation Slides

Social Determinants of Health Screening and Intervention in Pediatric Primary Care



Jessica Cline, MSN, RN, CPNP-PC
DNP Project Defense

Advisor: Amy Boitnott, DNP, APRN, FNP-BC, CPNP-PC

July 28th, 2022

Review of the Literature

- Systematic search following PRISMA guidelines to evaluate the existing literature regarding SDoH screening in pediatric primary care.
- Five databases searched:
 - PubMed, Cumulative Index of Nursing and Allied Health Literature (CINAHL), Web of Science, PsycINFO and SocINDEX
 - Keywords: “social determinants of health”, “screening”, and “primary care”
 - Limits:
 - Publication between 2010 and 2021
 - Academic journal/journal articles
 - English language

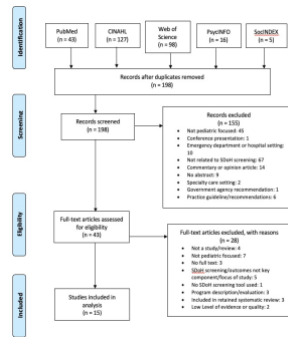


Introduction and Background

- Social Determinants of Health (SDoH)
 - (Commission on Social Determinants of Health, 2008)
- Call for action globally and nationally to address health inequities related to SDoH.
 - (Commission on Social Determinants of Health, 2008; Kleinman et al., 2021)
- Children are particularly vulnerable to the influence that unmet social needs have on their health.
 - (Bucci et al., 2016)
- The AAP, AAFP and NAPNAP have made recommendations for SDoH screening
 - (Committee on Psychosocial Aspects of Child and Family Health et al., 2012; Oldfield et al., 2021; Spratling et al., 2019)



PRISMA Flow Chart



Review of the Literature

- Four major themes among the literature emerged
 - Screening tools
 - Screening and follow-up
 - Patient preferences and acceptability
 - Facilitators and barriers



Review of the Literature

Screening Tools

- Numerous SDoH screening tools exist, in use in various pediatric healthcare settings
 - (Morone, 2017; O'Brien, 2019; Sokol et al., 2019)
- Most SDoH screening tools do not have psychometric properties assessed
 - (Morone, 2017; O'Brien, 2019; Sokol et al., 2019).
- Tools vary in number of SDoH domains assessed and most screen for only risks
 - (Sokol et al., 2019)
- Method of administration varies
 - (Sokol et al., 2019)
- One study found written screening to elicit more positive responses versus verbal screening
 - (Palakshappa et al., 2020)



Review of the Literature

Screening and Follow-up

- SDoH screening identifies patients with social needs
 - (Berger-Jenkins et al., 2019; De Marchis et al., 2019; Eismann et al., 2021; Fiori et al., 2020; Oldfield et al., 2021; Patel et al., 2018; Purkey et al., 2019)
- ParentConnex, a positive parenting screening and referral program with in-house parent coaching
 - (Eismann et al., 2021)
- Comprehensive social needs and behavioral screening program
 - (Berger-Jenkins et al., 2019)
- Community Linkage to Care, involving routine SDoH screening and in-house community health workers
 - (Fiori et al., 2020)



Review of the Literature

Patient preferences and acceptability

- Participants are comfortable with screening, believe SDoH screening is acceptable and important
 - (Byhoff et al., 2019; De Marchis et al., 2019; Emengo et al., 2020; Oldfield et al., 2021; Orr et al., 2019) a
- Importance of patient-centeredness in the administration of screens
 - (Byhoff et al., 2019)
- Caregivers felt more holistically cared for when screened for SDoH
 - (Emengo et al., 2020)
- Caregivers were found to have insight regarding the relationship between social risks and overall health
 - (Byhoff et al., 2019; Emengo et al., 2020)



Review of the Literature

Facilitators and Barriers

- Clinicians overall found screening to be acceptable and beneficial to patients
 - (Eismann et al., 2021; Fiori et al., 2020; Purkey et al., 2019)
- Two studies qualitatively evaluated clinicians' experiences with SDoH screening programs
 - (Herrera et al., 2019; Purkey et al., 2019)
- Two-phase teaching tool pertaining to SDoH screening
 - (Patel et al., 2018)



Review of the Literature

Conclusions

- SDoH screening in the pediatric setting identifies those with unmet social needs and appropriate referrals are placed
- SDoH screening is acceptable to patients, caregivers and clinicians
- SDoH screening has been successfully implemented in a variety of settings
- Many tools exist, but most are not validated
- The potential risks of SDoH screening to patients are outweighed by the potential benefits



Purpose

- The purpose of this DNP project was to assess the feasibility of a SDoH screening and intervention program among school-aged children in the pediatric primary care setting and evaluate its effect on pediatric health related quality of life.



Protection of Human Subjects

- Submitted to UVA IRB-HSR for review
 - Determined to be human subjects research
 - Approved as expedited study
 - Study Number: HSR210378
 - Informed consent/minor assent for participants
 - Results remain confidential
 - Participant data de-identified



Methods

- Setting:
 - Private pediatric primary care clinic in central VA
- Sample:
 - Convenience sample
 - Inclusion criteria:
 - children aged 6 – 12 years old presenting for wellness visits, non-urgent care visits or other follow-up visits
 - Exclusion criteria:
 - children < 6 or > 12 years old,
 - non-English-speaking,
 - urgent care visits,
 - no internet or cellular service access,
 - no parental email



Methods

- Project design
 - Quasi-experimental
 - Quantitative
 - Pre- and post-intervention questionnaires
- SEEK Model of Care
 - (Dubowitz, 2014)
 - SEEK PQ-R screening tool
 - REAP motivational interviewing technique
- Use in school-aged children, bi-weekly telemedicine follow-up
 - Novel approach to SEEK Model with use in children > 5 years old
 - Novel approach with bi-weekly telemedicine follow-up utilizing REAP motivational interviewing technique



Methods

- Measures
 - Sociodemographics
 - Patient and parent(s)/caregiver(s) age, sex, race
 - Insurance status (commercial, Medicaid, no insurance)
 - Parent(s)/caregiver(s) education level
 - Parent(s)/caregiver(s) employment status
 - Number and make-up of household members
 - SEEK PQ-R (Dubowitz et al., 2007, 2008; Dubowitz, 2014; Lane et al., 2007)
 - Some psychometric properties assessed
 - Pediatric Quality of Life Inventory (PedsQL) 4.0 Generic Core Scales Short-Form (Hullman et al., 2011)
 - Child self-report Cronbach's α = .91 and parent-proxy report Cronbach's α = 0.93



SEEK PQ-R questionnaire.

PedsQL parent report for ages 8-12 years.

Form Q, 2

In the past ONE month, how much of a problem has your child had with ...

Problem	Parent Report			
	Never	Sometimes	Often	Always
Physical Functioning				
1. Getting over their own illness	0	1	2	3
2. Running	0	1	2	3
3. Participating in sports activity or exercise	0	1	2	3
4. Lifting something heavy	0	1	2	3
5. Doing chores around the house	0	1	2	3
Emotional Functioning				
1. Feeling afraid or scared	0	1	2	3
2. Feeling sad or blue	0	1	2	3
3. Feeling angry	0	1	2	3
4. Worrying about what will happen in the future	0	1	2	3
Social Functioning				
1. Getting along with other children	0	1	2	3
2. Other kids not wanting to be his or her friend	0	1	2	3
3. Getting along with other children	0	1	2	3
School Functioning				
1. Paying attention in class	0	1	2	3
2. Forgetting things	0	1	2	3
3. Keeping up with schoolwork	0	1	2	3



Methods

- Presented project to clinic clinicians and staff
- Nursing team notified the project lead when eligible patients presented to clinic
- Project lead approached families to obtain informed consent/minor assent
- If consent/assent obtained, SEEK PQ-R was administered in-person via paper-and-pen
 - If positive, REAP motivational interviewing implemented and offered participation in 8-week follow-up intervention



Methods

- Bi-weekly 30-minute telehealth appointments
 - Visits structured following REAP motivational interviewing format
 - Referrals follow-up
- PedsQL parent-proxy and child report collected via Qualtrics before first and after last follow-up appointment



Methods

- Data source
 - Surveys
 - Sociodemographic data
 - SEEK PQ-R
 - Pre- and post-intervention PedsQL
- Descriptive Statistics
 - Sociodemographic data
 - SEEK PQ-R screens and follow-up participation
 - PedsQL pre- and post-intervention scores



Results

Table 3
SEEK PQ-R screening results and follow-up participation (n = 52)

	n	% of Total	% of Positives
SEEK PQ-R Result			
Positive Screen	20	38.5	--
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Follow-up Participation			
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Note. SEEK = Safe Environment for Every Kid; SEEK PQ-R = screening tool utilized for SDoH screening.

*A "yes" answer to any question on the SEEK PQ-R indicates a positive screen



Results

Table 2
Sociodemographic characteristics of follow-up program participants (n = 6 parent-child dyads)

Age in Years	Mean(SD)	Median(IQR)	Min	Max
Parent	42.3(7.8)	42.5(36.3-48.5)	31	53
Child	9.3(2.8)	10.0(6.0-12.0)	6	12
Parent Characteristics				
	n	%		
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Female	4	66.7		
Male	2	33.3		
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White	3	50.0		
Asian	2	33.3		
Other	1	16.7		
Education				
High School Degree	1	16.7		
College Degree	2	33.3		
Graduate School Degree	3	50.0		
Employment				
Currently Employed	6	100.0		
Not Currently Employed	0	0.0		
Insurance Type				
Private	5	83.3		
Medicaid	1	16.7		

Note. Sociodemographic survey completed online via Qualtrics.

*Two participants reported male gender on the sociodemographic survey; however the project lead believes this to be an error. In working closely and directly with parent participants, the project lead notes that only 1 participant was male while the remaining 5 were female and did not identify to the project lead as another gender.



Results

Table 4
Comparison of *PedsQL* scores before and after 8-week SEEK follow-up program

PedsQL Scores	Mean (SD)		Median (IQR)	
	Before	After	Before	After
Parent Total (n=6)	63.3(14.6)	73.9(11.6)	61.7(52.9-71.3)	70.8(65.8-87.1)
Parent Physical	77.5(20.7)	88.3(14.4)	75.0(61.3-100.0)	92.5 (76.3-100.0)
Parent Psychosocial	56.3(15.0)	66.7(12.8)	52.5(45.0-64.4)	65.0(54.4-80.6)
Child Total (n=11) [†]	74.6(11.8)	75.8(10.4)	78.3(62.1-83.3)	76.7(65.8-84.6)
Child Physical	85.0(14.7)	88.3(12.1)	87.5(70.0-97.5)	90.0(77.5-100.0)
Child Psychosocial	71.5(11.7)	69.6(10.3)	74.2(59.6-80.6)	68.8(60.0-77.5)

Note: *PedsQL* = The Pediatric Quality of Life Inventory (*PedsQL*) 4.0 Generic Core Scales¹¹

Short-Form which measures health-related quality of life in pediatric patients. *PedsQL* can be scored by total overall score, and by domains of physical or psychosocial; SEEK = Safe Environment for Every Kid, a model of healthcare using the SEEK PQ-R social determinants of health screening tool and motivational interviewing follow-up.

[†] Only 4 child participants completed *PedsQL* questionnaires before the follow-up program so 2 child participant scores were not available for pre- and post-intervention comparison



Discussion

- SEEK PQ-R seems effective at eliciting potential SDoH needs among this age group in this practice setting
- Interest in follow-up care for identified needs
- The screening and follow-up intervention did seem to have some positive effect on pediatric HRQOL



Discussion: Themes

- Most common SDoH psychosocial problem was stress
- Few SDoH problems with:
 - Food Insecurity
 - Intimate Partner Violence
 - Drug or alcohol abuse
- Perceived lack of time to participate was common reason to decline participation
- Some declined due to already being engaged with resources to address needs



Discussion: Themes

- Engaging participants in follow-up was challenging
- Motivational interviewing approach allowed parents to explore and identify for themselves their psychosocial needs, set self-directed goals
- All parent participants in follow-up reported feeling positively about the experience



Strengths and Limitations

- Strengths
 - Use of SEEK Model of care - prior demonstrated effectiveness
 - Use of SDoH screening tool with at least some psychometric properties assessed
 - Use of validated PedsQL questionnaire
 - Novel approach to SEEK with use in school-aged children and bi-weekly follow-up
 - Telehealth visits allowed flexibility for parents to successfully participate in follow-up



Strengths and Limitations

- Limitations
 - Small sample size of follow-up participants
 - Child report PedsQL score comparison limited due to only 4 participants completing pre- and post-intervention questionnaires
 - Quality of Life data not collected on parents
 - Nature of implementation may have allowed some potential participants to “self select” out of participation



Nursing Practice Implications

- Aligns with SDoH body of evidence
- Bring current pediatric practice up-to-date with AAP, AAFP and NAPNAP recommendations for SDoH screening and intervention
- Potential to improve social circumstances of pediatric patients and thus decrease health disparities and long-term negative health consequences
- Follow-up challenges present opportunity for multidisciplinary teamwork



Conclusion

- SDoH screening and intervention among school-aged children using the SEEK Model of care is feasible and acceptable
- Evidence is promising that SDoH screening does identify needs and that intervention may improve HRQOL in pediatric patients
- Recommendation to more broadly implement SDoH screening and intervention within the clinic to include school-aged children
- Future research with larger sample is recommended to further explore pediatric SDoH screening and intervention outcomes



Disseminate Results

- Presented for Defense at the UVA School of Nursing
- Submit in the UVA Libra Database
- Share findings with SEEK team
- Submission to nursing journal
 - Journal of Pediatric Health Care (NAPNAP)



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Questions?

