THE IMPORTANCE OF PEDIATRIC PROVIDER AWARENESS OF SOCIAL DETERMINANTS OF HEALTH AND THE IMPACT ON HEALTH OUTCOMES: AN INTEGRATIVE REVIEW

A Scholarly Project

Submitted to the

Faculty of Liberty University

In partial fulfillment of

The requirement for the degree

By

Whitney Lenelle Dowd

Liberty University

Lynchburg, Virginia

November 2022

THE IMPORTANCE OF PEDIATRIC PROVIDER AWARENESS OF SOCIAL DETERMINANTS OF HEALTH AND THE IMPACT ON HEALTH OUTCOMES: AN INTEGRATIVE REVIEW

A Scholarly Project

Submitted to the

Faculty of Liberty University

In partial fulfillment of

The requirements for the degree

Of Doctor of Nursing Practice

By

Whitney Lenelle Dowd

Liberty University

Lynchburg, Virginia

November 17, 2022

Scholarly Project Chair Approval:

_____

Dana Kaye Smith Woody, DNP, RN Date

Abstract

Social determinants of health have become a global concern over the past several years. Efforts to reduce negative health outcomes related to social determinants of health are of high priority. Awareness of this issue by providers, especially pediatric providers, must be considered to help combat this major concern. A researcher seeks through an integrative review to determine provider perspective on social determinants of health, impact of social determinants of health on outcomes, and ways of integrating social determinants into prescriptive practice. The integrative review will inform stakeholders about the importance of pediatric provider assessment of social determinants of health and the impact on health outcomes. By using nursing science and research as a foundation, this review will serve as a call to action for the healthcare community.

Keywords: social determinants of health, pediatric providers, pediatrics, community

Acknowledgements

I would like to start by thanking my Chair, Dr. Dana Woody. She has been very patient with me, and I am sincerely thankful for her guidance. I would also like to thank all the Faculty of Liberty University School of Nursing. I am also extremely grateful to my family members, most of all my children for their support and patience. Proverbs 3:6 says ‘In all thy ways acknowledge him, and he shall direct thy paths’ therefore I want to thank our Lord for blessing me and allowing me to pursue my dreams despite my circumstances.

Contents

List of Tables

List of Figures

List of Abbreviations

Adverse childhood experiences (ACEs)

American Academy of Family Physicians (AAFP)

American Academy of Pediatrics (AAP)

Attitudes Toward Poverty (ATP)

Centers for Disease Control (CDC)

Child and Family Serving Professionals (CFSP)

Food Insecurity (FI)

Infant Mortality Rate (IMR)

Integrative Review (IR)

Nonaccidental Trauma (NAT)

Nurse Practitioner (NP)

Office of Disease Prevention and Health Promotion (ODPHP)

Primary Care Provider (PCP)

Quality Improvement (QI)

Randomized Controlled Trial (RCT)

Social determinants of health (SDOH)

United States (U.S.)

United States Department of Health and Human Services (USDHHS)

Virtual Reality Simulation (VRS)

World Health Organization (WHO)

SECTION ONE: FORMULATION OF THE REVIEW QUESTION

Introduction

The United States Department of Health and Human Services (USDHHS) has addressed social determinants of health (SDOH) as an issue of significant consideration in the most recent version of Healthy People 2030 (2020). The Office of Disease Prevention and Health Promotion (ODPHP) lists their overarching goals and included these goals in the Healthy People 2030 update as follows. The goals are to "Eliminate health disparities, achieve health equity, and attain health literacy to improve the health and well-being of all," and to "Create social, physical, and economic environments that promote attaining the full potential for health and well-being for all" (Healthy People 2030, 2020, para. 6).

Pediatric care providers offer an essential service in the medical community. Pediatric healthcare involves providing medical care to children from birth to 18 years. Pediatric care providers can diagnose and treat a wide variety of diseases and illnesses and are particularly important providers of preventative care. While preventative care is important at any age, children have special preventative needs when it comes to safety. The American Academy of Pediatrics (AAP) releases a yearly periodicity schedule that outlines specific screening that should occur at each pediatric well-child check visit. Included in the policy statement, *2022 Recommendations for Preventative Pediatric Health Care*, is the behavioral/social/emotional screening (AAP, 2022). This section of the policy was titled psychosocial/behavioral assessment recommendations in the previous year's policy; this change in wording was made to encourage pediatric providers to assess for SDOH, racism, poverty, and relational health, in addition to the current recommendations of emotional and mental health concern assessment.

SDOH are defined as conditions that are present in the places people live, learn, work, and play; they are a factor in many different health related outcomes and are directly linked to the way that money, power, and resources are distributed (Centers for Disease Control [CDC], 2020b). The Institute for Healthcare Improvement (IHI; 2021) developed the Triple Aim in 2007 as a framework to improve performance of the healthcare delivery system. This concept can be realized through enhancing the experience of the patient, improving the overall health of populations, and decreasing costs related to healthcare.

SDOH and health equity are closely related; both stem from a system that bases social rank off economic status. Health equity is defined as a fair opportunity to good health among individuals; therefore, hinderances such as poverty, discrimination, poor education, unsafe housing, inability to access fair paying jobs, and deterrents to adequate healthcare must be eliminated (Braveman, 2017). Significant advances in the last decades have lengthened the life expectancy for most people, but determinants such as race, income, education, and other social factors have created a gap that is growing and leaving many individuals behind. The earlier in life this proverbial gap starts, the further an individual will be placed behind regarding social status.

In a publication titled *Crossing the Quality Chasm: A New Health System for the 21st Century* the Institute of Medicine (IOM; 2001) issued a call to care providers for change to close the gap in quality of care. Discussed are six dimensions that need improvement in the United States including patient safety, care effectiveness, patient-centeredness, timeliness, care efficiency, and lastly, equity through closing racial and income gaps within the healthcare system. Research has determined that social factors play a major role when caring for those in

need. Complete treatment of an individual depends on that person's social capabilities or the capabilities of the person(s) responsible for their care.

SDOH are documented at length and cause several issues that are specific to the pediatric population. In 2019, 5.3 million children in the United States experienced food insecurity (FI) (Economic Research Service, 2022), this rate is higher in Black, Hispanic, and immigrant households and homes located in rural areas and headed by single women (Ashbrook et al., 2021). “Double Jeopardy”, which is an increase in adverse conditions combined with limited availability of protective factors, is a condition that accounts for approximately 40% of Black, Hispanic, and American Indian/Alaska Native children in the United States (Perez et al., 2021). Protective factors include quality early education, afterschool programs, and safe play areas. Due to the negative impact of SDOH, these children are all at a higher risk for health problems and prevalence of disease. It is imperative that the lives of these children be protected; therefore, this integrative review (IR) is a call to action.

Background

According to the Census Bureau, two in five children live in poverty or close to poverty level (Fontenot et al., 2018). Vulnerabilities, like poverty, within communities make seemingly simple processes, such as seeking adequate healthcare, extremely difficult. The ability to provide care to a young patient with limited or no access to resources becomes difficult for clinicians, especially when they have not thoroughly assessed the patient's social needs. Indicators of health status help to bring the issue of providing adequate care to patients into perspective.

Infant mortality rate (IMR) is an indicator of a society’s overall health (CDC, 2020b). IMR can significantly vary depending on geographical area and is evidenced by a vast difference of IMRs within the United States. According to data collected in 2018, IMR for non-Hispanic

Whites was at 4.6 infants per 1,000 live births while the rate for non-Hispanic Blacks was more than double that at 10.8 infants per 1,000 births (Ely & Driscoll, 2020). This disparity has been associated with varying social issues such as poverty, homelessness, and unsafe neighborhoods, and can be seen within different race and ethnic groups of individuals living in the United States. A high IMR affects the health of the nation and often the impact is felt in healthcare costs.

The cost of healthcare is rising in the United States; according to Centers for Medicaid and Medicare Services (CMS; 2021) spending went up by 9.7% to 4.1 trillion dollars in 2020. This accounts for approximately $12,530 per American. The ability to offer cost effective healthcare is affected by many different factors (Wilensky, 2021). One of these factors is non-medical issues that patients encounter, referred to as social determinants of health.

Social Determinants of Health

SDOH are grouped into five domains by the USDHHS and ODPHP: (1) economic stability; (2) education access and quality; (3) healthcare access and quality; (4) neighborhood and built environment; and (5) social and community context (USDHHS, 2020). SDOH directly and indirectly play a role in the health status of a pediatric patients and their families. Without a basic understanding of each of the above listed domains, it may be difficult for a providers to care for their patients in a way that is thorough and complete. As each one of these domains is its own separate entity, they also correlate closely with one another proving that care of individual patients, especially in pediatrics, is complex and requires the full attention of the healthcare provider.

Economic Stability. Economic disadvantages can appear in different forms. Differences in wages and employment opportunities may significantly affect an individual's ability to afford the cost associated with living (Healthy People 2030, 2020). Limited opportunities in the

workplace may leave working individuals in a position where they are underemployed or not making enough money to provide for their family; this can lead to further accumulation of unpaid bills, which places vulnerable individuals at risk for health-related adverse events caused by the absence of resources such as water, heat, and proper ventilation.

Education Access and Quality. Education has also been identified by Healthy People 2030 (2020) as a determinant of health and longevity. The goal is to increase educational opportunities and help children and adolescents do well in school (Healthy People 2030, 2020). Many factors affect the ability of a child to receive a quality education. Children experiencing social discrimination, children from families with lower incomes, and children with disabilities are more likely to struggle in school, making them less likely to graduate from high school and attend college. These events that occur early in childhood, and are of no fault to the individual, reduce the chance of obtaining a safe, high-paying job, and increase the likelihood of developing certain health conditions such as heart disease, diabetes, and depression (Healthy People 2030, 2020). Research has proven that individuals with a proper education are more likely to have better opportunities for obtaining higher income jobs that reduce their economic hardship and place them in a position to have better health outcomes (Asfaw et al., 2020).

Healthcare Access and Quality. Healthcare accessibility is a determinant of how healthcare is delivered (Healthy People 2030, 2020). Often people are not receiving the care they need or are not being properly screened because they do not have the means to get to their appointments. Lack of transportation can delay necessary treatments, placing an already vulnerable population at higher risk. Access to the healthcare system is the first step in receiving needed care, and a large gap of understanding is left open between clinicians and patients if this

problem is not properly addressed. Noncompliance of patients is often cited as their issue for not seeking healthcare, but it may be that they lack the necessary tools to access the system.

Neighborhood and Built Environment. The neighborhood or environment in which a person lives is also a determinant of their health (Healthy People 2030, 2020). Many risky factors are related to location, such as crime and violence rates, pollution and contamination of water, and level of noise. Living in an area of limited safety measures, such as absence of sidewalks and biking lanes, places the people in those areas at a higher risk for injury and chronic disease.

Social and Community Context. Relationships that are fostered at home, in the workplace, and in the community also impact the health of a person. Negative social interactions can cause stress that increases the likelihood of an adverse health problem. For example, children who are not given the attention they need due to incarcerated or absentee parents are more likely to struggle with relationships with their peers (Healthy People 2030, 2020).

Pediatric Clinicians

Pediatric clinicians offer preventative pediatric care to children and their families with the goal of focusing on developmental, behavioral, psychosocial, and health problems with regularly scheduled visits (Freeman & Coker, 2018). The clinicians who frequently care for children include professionals specializing in the fields of behavioral sciences, medicine, nursing, and education (Wu et al., 2019). The AAP has issued guidelines on what elements are to be addressed in the well-child check, but the nation's population is changing as are the needs of the children in the United States. Continuing to provide care in the way that disproportionally addresses health needs and leaves behavioral, developmental, and psychological needs will ultimately leave the United States burdened with chronic disease (Freeman & Coker, 2018).

Many health issues begin early in life and the ability of the pediatric clinician to adequately address chronic and debilitating problems is directly related to effectively promoting health (Wu et al., 2019). Many factors influence the well-being and life span of a patient including genetic and biological predispositions, individual and family health attitudes, learned habits, behaviors, access to resources, community and school characteristics, and legislative policies. Clinicians have a duty to the populations that they serve to address issues by approaching healthcare with a focus on promotion of wellness across the life-span continuum.

The healthcare system serves a deeper purpose in areas that are impoverished or in lower socioeconomic communities; and clinicians' have a strong impact in the communities in which they work. The healthy growth and development of individuals relies on the facilitation of a connection between the community and the world (Bruner, 2017). Clinicians placed in federally qualified health centers, free clinics, maternal and child health centers, and public hospitals play an essential role in community development through implementing strategies to connect to a broader platform. These clinicians, to perform the task of treating their patients, need to be actively involved in obtaining and promoting protective factors, social buffers, primary services, mediating structures, microsystems, community resilience, and social capital. To improve outcomes, clinicians need to restructure care to focus on early intervention and collaboration with other community sources (Perrin et al., 2020).

Adverse Childhood Experiences

Adverse childhood experiences (ACEs) are defined as specific exposures to racism, abuse or neglect, violence within the family, or experiencing the separation of parents (Bruner, 2017). To better improve the health of a population, a general understanding must occur on how ACEs play a part in affecting the outcomes of individuals at risk. Health disparities are greatly

determined by negative influences that can occur preconceptionally and last through the early years of a child's life (Perrin et al., 2020). This phenomenon of experiences reaches beyond generations, is complex in nature and methodical. Research has found that these negative exposures and experiences that young children and their families encounter have the power to affect brain development and the development of other organ systems. The complexity of ACEs extends into the preconception and prenatal periods and can cause higher rates of maternal death and developmental disabilities in children.

The prenatal period is the timeframe a fetus is given to develop. During this time multiple, predictable reactions occur during critical periods in which biological systems are forming (Perrin et al., 2020). Research has found that adverse events can affect the opening and closing of these critical periods, thus possibly causing damage to the neurobiological development. The damage that occurs possibility may be remedied later in life, however challenging to correct. Adverse event damage can be seen in the functioning of the immune, endocrine, and reproductive systems.

A significant correlation exists between ACEs and SDOH, and these adverse events that occur early in childhood have the potential to change the trajectory of a child's life (Suleman et al., 2020). The research on ACEs indicates a need to focus on the healthy development of the child and SDOH to improve the health of populations. For example, when children are seen at their healthcare facility it is standard practice to conduct a history by asking questions of the patient or family at the time of the examination. Collection of this data can be as specific or detailed as needed and depending on the provider may or may not include questions that screen for SDOH. A child or family who screens positive for SDOH will be more likely to experience

ACEs, and by focusing on specific determinants such as neighborhoods, families, and community factors, the incidence of ACEs will likely decrease, thus improving outcomes.

Toxic Stress. Extreme stressors present early in life have been found to ~~c~~ause a response that can place an individual at a higher risk for developing health complications (Condon et al., 2018). These stressors can include poverty, violence, or living in the presence of a parent with untreated mental illness. Toxic stress can disrupt normal physiological development resulting in changes in the structure of the brain, neurological, endocrine, immune, metabolic, and cardiovascular systems. A persistently high stress level in a child can lead to an excessive release of cortisol, catecholamines, and inflammatory cytokines resulting in pediatric obesity, growth delay, and impaired cognitive, language, social, and emotional skills. An elevation in stress hormones can also cause an elevation in heart rate, blood pressure, and a heightened sense of awareness, which if prolonged can also produce negative health outcomes.

Clinicians must be able to recognize the stressors that patients may present ~~t~~o adequately perform an assessment and develop a comprehensive treatment plan. Other stressors include homelessness, physical and developmental disabilities, unemployment, civil unrest, FI, illness, limited or no access to care, disruptions in education, racism, discrimination, substance use, social isolation, and death (Bowen et al., 2022). Negative outcomes produced by toxic stress include mental health disorders, internalizing and externalizing behaviors, drug abuse, and harmful risk-taking behaviors. Many of these stressors are directly or indirectly related to SDOH, supporting the importance of the awareness of the provider to the social needs of the patient. Toxic stress has become more of an issue since the Covid 19 pandemic and awareness of stressors by the clinicians will be important to improve the health outcomes of their patients, especially the young and vulnerable ones.

Racial Disparities. Racial and ethnic disparities are largely contributed to housing quality, poverty, access to education, and community environments, all of which are considered SDOH (Wennerstrom et al. 2022). Research has proved that marginalized communities are at risk for receiving less than adequate healthcare (Yearby, 2020). Underrepresentation places communities of color at risk for poorer health outcomes. Although these disparities have been recognized for many years, they continue to persist with documented negative impacts on healthcare costs and loss of life (Yearby, 2020). When compared to Whites, Blacks have a life expectancy that is 4 years shorter and have a higher prevalence of obesity and diabetes (Wennerstrom et al. 2022). These statistics are directly related to race and constitute a public health problem.

The complexity of racial disparity lies within the concept that individuals' race puts them at risk for poor outcomes based on their genetic makeup and the treatment they may potentially receive due to their race. Microaggressions are defined as concise, commonplace, regular verbal behavioral or environmental embarrassments that depict hostile, disparaging, or negative racial slights and slurs towards individuals of color, both intentional and unintentional (Keith et al., 2017). Microaggressions can be classified as microassaults, microinsults, and microinvalidations. Microassaults are acts that are discriminatory in nature; microinsults target ability or character with negative connotations; and microinvalidations are attacks that invalidate racial experiences. These verbal aggressions have the potential to place individuals of color in a state of stress resulting in higher risk of developing physical and mental health problems.

Defining Concepts

The primary concept of interest for this IR is SDOH, which have been identified by multiple agencies as factors that highly influence patient wellness. The World Health

Organization (WHO; 2022a) defined SDOH as conditions in the places where people live, learn, work, and play that affect a wide range of health and quality of life risks and outcomes. The Healthy People initiative outlined the five key areas of healthcare access and quality, education access and quality, social and community context, economic stability, and neighborhood and built environment. The American Academy of Family Physicians' (AAFP; 2019) definition of SDOH is synonymous with the WHO. Also, WHO (2022a) described how social circumstances are molded by the way finances, power, and resources are distributed at the global, national, and local levels. The AAP Council on Community Pediatrics (COCP) has encouraged pediatricians to address SDOH for over 10 years through their policy statement "Poverty and Child Health" (Krugman, 2019). Resources have been put in place to aid with this transition; unfortunately, the practice of assessing for SDOH in pediatric patients remains a challenge.

Rationale for Conducting the Review/ Problem Statement

The purpose of the IR was to examine pediatric clinician awareness of SDOH and their impact on health outcomes in the pediatric population. This review will support the need for increased awareness by pediatric providers to assess for SDOH during their interactions with pediatric patients and their families. In this IR, the researcher synthesized information from the studies. The prospective outcome will be to determine if pediatric provider awareness of SDOH will impact pediatric health outcomes. Dissemination of the information will inform stakeholders about the significance of SDOH and their impact on the pediatric population and direct further research on the topic.

Mission and Vision

Recognizing the mission and vision of the healthcare system when suggesting changes. To garner support from stakeholders, placing focus on their primary objective will ensure

acceptance, and this can be done by relating the intended message back to their mission and vision statement. The definition of a mission statement, according to the Oxford (2022) dictionary, is a formal statement that details the goals and values of an organization of company. A vision statement, according to the same source, is a statement meant to inspire a futuristic ideal of a company or group. A project that can support the mission and vision of an organization will ultimately be considered as a valuable tool in meeting the needs of the health system. Usual healthcare mission and vision statements address health and wellness of communities (MacLeod, 2016). A project focusing on pediatric provider awareness of SDOH will complement a health care system's mission and vision statement by improving the health of individuals starting from a young age thus improving the health of the entire population.

Stakeholders

For this IR the key stakeholders are identified as healthcare providers (both pediatric and adult practitioners), government officials, healthcare administrators, and all additional and ancillary staff serving patients. SDOH are so complex, no one person is not impacted, either directly or indirectly. Although it is difficult to pinpoint the number of pediatric providers in the United States, according to the American Academy of Nurse Practitioners (AANP; 2021) over 350,000 Nurse Practitioners are practicing in the United States, with 69% certified in family medicine and 3% certified in pediatric primary care. With well over 30,000 pediatricians practicing in the United States (U.S. Bureau of Labor and Statistics, 2022), the outcomes of SDOH in pediatrics have affected many providers' pratices.

Politicians serving as government officials are tasked with determining how funds are allocated within their elected state. A growing population that requires more attention to SDOH places these individuals in positions where they impact which high-risk groups of individuals can

receive extra help and which groups cannot. Healthcare administrators are tasked with the management of healthcare systems that are highly burdened with chronically ill patients. The health status of many of these patients is directly related to their SDOH. Identifying and providing remedies to decrease the impact of SDOH will potentially relieve some unnecessary pressure on healthcare administrators.

Triggers

A factor that warrants an issue to be re-examined or investigated would be considered a trigger. Triggers are present and draw the attention of the stakeholders resulting in an action. This IR's trigger is high medical costs associated with individuals who present with unaddressed SDOH, and those costs can accumulate over time. The United States faces a potential burden of billions of dollars related to costs of illness and premature death (Bleich et al., 2021).

Pediatric Health Outcomes. SDOH directly and indirectly have a significant impact on health outcomes. Stress and increased likelihood of ACEs related to unfavorable SDOH offer an explanation on the sequelae that occurs in children at high risk for poor outcomes. Pediatric clinicians should also be aware of poor health outcomes in pediatrics such as obesity, mental health issues, developmental delays, and poor control of chronic health problems; but more importantly, they should realize that children at risk for SDOH that negatively impact health outcomes are more likely to turn into adults who are negatively impacted by SDOH, thus, perpetuating an unfortunate cycle.

Preliminary Review of Studies

The purpose of the IR was to determine the significance of raised awareness of SDOH among pediatric providers. SDOH and how they affect health outcomes are well known throughout the medical community, an abundant amount of literature is available. After

preliminary review of the literature, After preliminary review of the literature, I concluded little research exists specific to the subject of pediatric provider assessment of SDOH and pediatric health outcomes. The primary sources of literature do provide evidence that supports encouraging more research that is specific to the importance of assessing for SDOH by pediatric providers. Of the many purposes that the primary literature covered, the most common were the effectiveness of educating providers on SDOH (Brammer et al., 2017; DeBonis et al., 2020; Holm et al., 2017; Murray et al., 2022); how SDOH impact health (Auger et al., 2017; Ellis et al., 2020; Higginbotham et al., 2019; Jones et al., 2019; McCrae et al.,2021; South et al., 2019; Srivastav et al., 2020); barriers that prevent providers from screening for SDOH(Brammer et al., 2017; DeBonis et al., 2020; Holm et al., 2017; Murray et al., 2022); and importance of patient/provider relationship and the perspective of the provider on SDOH (Brammer et al., 2021; DeBonis et al., 2020; Holm et al., 2017; Koschmann & Hooke, 2019; Koschmann et al., 2021; Murray et al., 2022; Shah et al., 2019; Sokol et al., 2021; Srivastav et al., 2020). Few of the primary sources shared the same purpose, but overlapping results were common.

The researcher found a variety of different study designs, methods, populations, sample sizes, and outcomes. However, the researcher found no randomized controlled studies, insisting that a gap exists in the research on this topic. Analysis of the articles identified common themes related to the importance of pediatric provider awareness of SDOH and how their awareness affected health outcomes. The emerging themes were: (1) provider perspectives on SDOH, (2) impact of SDOH on health outcomes, and (3) and how SDOH are integrated into prescriptive practice.

The literature search revealed a variety of different articles that related to or gave support to pediatric providers and their awareness of SDOH. During the search the reviewer categorized and searched the literature for different patterns of findings within the main domains of SDOH.

Provider Perspectives on SDOH

The pediatric providers' perspective of SDOH plays a major role in their ability to screen and their awareness of how SDOH affected patients. Brammer et al. (2021) found that providers' unconscious biases were improved after partaking in a virtual reality program on SDOH and providers were more empathetic and understanding of common SDOH in Medicaid patients after the program. This virtual reality program study demonstrated that providers have the potential to have biases that prevent them from providing the best care possible through considering SDOH during their interactions with patients. DeBonis et al. (2020) discussed how healthcare providers were able to recognize that there was a lack of understanding on poverty in patients and believed that mandatory training on the topic should occur in all staff members. The participants in the study were able to draw these conclusions after receiving education on SDOH and poverty.

Impact of SDOH on Health Outcomes

Providers who care for younger populations may find that challenges to providing adequate healthcare that positively impacts health outcomes may extend beyond their assessment in the examination room. In African American children with Diabetes Mellitus Type I, neighborhood adversity was a strong predictor for health outcomes (Ellis et al., 2021). South et al. (2019) found that FI was associated with high blood pressure. The impact that SDOH have on health outcomes of pediatric patients is well known.

Higginbotham et al. (2019) found that pediatric patients in rural health clinics reported a significant number of unmet needs when screened by their pediatric healthcare providers. Jones

et al. (2019) sought to find out if socioeconomic status correlated with health outcomes and found that uninsured patients who suffered a nonaccidental trauma were eight time more likely to die in the hospital when compared to insured patients. Srivastav et al. (2020) also found that policies that originate at the state-level can impact the well-being of at-risk children and their families. SDOH impact health outcomes of patients at multiple levels.

SDOH Integrated into Prescriptive Practice

Sokol et al. (2021) evaluated providers' ability to integrate SDOH into practice and found that barriers to assessment were identified. Recommendations are in place by the AAP (2022) and AAFP (2019) to incorporate screening for SDOH into regular exams. The research indicates a lack of support for providers to properly screen and treat for SDOH (McCrae et al., 2021). This absence of provisions offers an obstacle to integrating SDOH assessment into practice. Koschmann and Hooke (2019) reported a study evaluating the importance of the parent-provider relationship for African American patients, and the authors found that quality relationships improved quality of care in pediatric patients, supporting the need for pediatric providers to incorporate screening assessment into their practice. Providers who are generally concerned about their patients and who take the time to ask pertinent questions regarding SDOH will better be able to integrate SDOH into their practice because their patients will be open, receptive, and prepared to answer questions (Koschmann & Hooke, 2019).

Supplemental Evidence

The USDHHS in conjunction with the ODPHP has created a national objective program to improve the health and well-being of Americans (Healthy People 2030, 2020). This program has worked to address public health challenges and issues for 4 decades. Each decade data is collected, and the priorities are set based on previously gained knowledge to attend to the latest

public health problems. With each iteration objections are modified, removed, or kept. The Global Commission on SDOH (CSDH) was established in 2005 by the WHO (2022b) in efforts to support global health partners to combat social factors steering individuals towards poor health and health inequities. The CSDH ended its functions in 2008 with the following recommendations: to improve daily living conditions; address how power, money, and resources are inequitably distributed; and measure and understand SDOH and assess the impact of action. The WHO's definition of SDOH is used synonymously by most organizations. The CDC (2020a) offered information on SDOH and references the Healthy People 2030 (2020) framework. They also offered practical information on tools, resources, and programs that can be used by practitioners to address SDOH (CDC, 2020a, 2020b).

Standards

The AAP (2022) in conjunction with the AAFP (2019) recommended that pediatricians and family practice physicians gain knowledge and a better understanding of SDOH (Committee on Community Health Services, 2005; Committee on Hospital Care, 2012). In doing so, the physician's responsibility to the patient should include screening, assessment, and referrals for physical, emotional, or social issues as needed. This recommendation is extended to collaborating healthcare team members including primary care clinicians and subspecialists.

Review of Studies

Economic Stability

Poverty is a major issue in the United States and is now considered a major health crisis (Murray et al., 2022). A strong correlation exists between income and health, with numerous contributing factors including nutrition, housing, literacy, and the ability to access healthcare. Poverty is also the strongest predictor of poor health outcomes according to the Agency for

Healthcare Research and Quality (AHRQ; DeBonis et al., 2020; Higginbotham et al., 2019; Jones et al., 2019). Higher rates of chronic disease, acute illness, and a lower life expectancy are all consequences of poverty, and children specifically are more likely to experience obesity, elevated lead levels, lower neurocognitive function, and high rates of psychological distress (Murray et. al., 2022). According to the U.S. Census Bureau one in seven Americans live in poverty and 10.5% of the total deaths in adults aged 25 and older in 2010 were attributed to poverty (Galea et al., 2011). The ability to maintain economic stability is life sustaining skill.

Education Access and Quality

The ability to obtain a good education is often overlooked. For some individuals' education is inaccessible, and although there may not be a direct correlation, the ability to access a quality education does impact health outcomes. Galea et al. (2011) found that 18.9% of the total deaths in adults aged 25 and older were due to adverse educational factors in year 2010 (Galea et al., 2011). Quality education that is accessible is a privilege that many are denied.

Healthcare Access and Quality

The topic of healthcare access presents many challenges in the United States. Quality of healthcare is a major current issue within the healthcare community as many payers are honoring a value-based program in effort to improve outcomes for patients. Unfortunately, there are limitations to quality healthcare and access in the United States, and this has the potential to significantly impact health outcomes. Mortality rate is noted to be higher in individuals who are uninsured (Jones et al., 2019). The ability to access quality healthcare is essential to sustaining life.

Neighborhood and Built Environment

The environment in which people live is essential to their ability to survive. The neighborhood in which individuals live determines their access to all life sustaining needs, such as healthcare, grocery stores, and schools. The research determined that neighborhood adversity placed pediatric patients at risk for negative health outcomes (Ellis et al., 2021). A nurturing neighborhood and environment are essential to create and maintain healthy lives.

Social and Community Context

The community in which individuals thrive is just as important as the environment they live in or their socioeconomic status. Galea et al. (2011) reported 12.1% of the total deaths in adults aged 25 and older were attributed to poor social support in 2010. Toxic stress is likely an indicator that impacts health (McCrae et al., 2021). Community and positive social interactions appear to play a large role in the well-being of individuals.

Health Disparities

Public health practices have changed in the last 20 years. This shift has moved away from treating communities as a group of people who are all the same to recognizing that racial, ethnic, and other subgroups exist with different health outcomes within those groups; these differences that are present are known as disparities (Shah et al., 2019). Previously research indicated the health disparities present among different subgroups was related to healthcare and medical factors. It is now understood that a variety of social and environmental factors are the major determinants in population health.

Health inequities are the unfair distribution of factors that determine health (Shah et al., 2019). Differences related to health inequities are unfair, preventable, unwarranted, and avoidable. Therefore, health equity is elimination of race and ethnic injustices, accomplished by

a fair distribution of socioeconomic, physical, and legal conditions. One significant contributing factor to health disparities is the unconscious bias caused by social privilege in healthcare providers (Holm et al., 2017). This highly sensitive topic often causes disagreements and is difficult to approach without evoking a psychological defense. To combat health disparities truly and effectively, first, healthcare providers must not presume that their title and commitment to service does not make them immune from biases. Healthcare providers must become culturally competent and realize how implicit biases impact patients and healthcare.

Problem Statement

With the known information revealed in the literature, action must be taken regarding inequity in healthcare; specifically, there is a pressing call to action to address SDOH. SDOH are often overlooked in care delivery. This issue poses undue risk to clients; especially, the pediatric population. Without pediatric clinician acknowledgement of SDOH, it is likely that children will experience unfavorable health consequences.

Purpose of the Project

The purpose of this IR was to determine if awareness of SDOH by pediatric providers increases the potential for better health outcomes in patients.

Clinical Review Questions

For pediatric patients, will a better awareness of SDOH by their pediatric healthcare providers have an impact on health outcomes compared to non-awareness? The following questions guided the IR efforts.

1. What are pediatric care providers' perspectives on SDOH?
2. What is the impact of SDOH on pediatric health outcomes?
3. How best are SDOH integrated into prescriptive practice?

Goals of the Project

The goals of the scholarly work were to:

1. Provide a systematic IR of the research related to pediatric provider awareness of SDOH and the impact on health outcomes.

2. Investigate the extent of SDOH on health outcomes for not only pediatric patients but all individuals.

3. Recommend future research, based on the evidence, to inform current practice and policy.

Inclusion and Exclusion Criteria

This IR includes various studies focused on the importance of SDOH and how they relate to provider awareness. Inclusion criteria included publications from 2017 to 2022, to guarantee up-to-date research. Additionally, only peer-reviewed, full-text publications, written in English were included. Inclusion criteria also included articles with open access items only, and studies that included children 0-18 years were also considered. Qualitative and quantitative studies were incorporated. Exclusion criteria included studies written before 2017 and in languages other than English; excluded also were newspaper articles, book reviews, and dissertations.

Table 1

Inclusion and Exclusion Criteria

Inclusion	Exclusion
Publications from 2017-2022	Publications prior to 2017
Pediatric population less than 18 years of age	Adult patient population 18 years and greater
Peer reviewed, gray literature (newspaper articles, conference papers, guidelines, etc.)	Non-research articles (editorials, fact sheets, etc.)
Articles written in the English language	Articles written in non-English languages
Full-text articles	Abstracts only

Conceptual Framework

The conceptual framework utilized in this IR was developed by Whittemore and Knafl (2005). This framework offers a methodology for individuals who aspire to use research data to support the application of an evidence-based initiative for practice in a healthcare setting. In the process of adding to the vast knowledge base of nursing science and all related topics, a researcher may opt to write an IR (Whittemore & Knafl, 2005). IRs are considered the most general of all research review methods; they also can integrate a broad range of purposes on a specific topic. While this process is fitting for IR, it can be difficult for the various types of data sources that are integral to the IR. Therefore, it is proposed that reviewers conducting an IR will benefit from modified version by Whittemore and Knafl (2005). To maintain rigor in the IR, a process formulated by Cooper (1989), was followed; this process includes the steps of problem formulation, literature search, data evaluation, data analysis, and presentation stages.

Whittemore and Knafl

This IR used the data analysis outlined by Whittemore and Knafl (2005). Five steps are utilized in the Whittemore and Knafl method. This process was made easier by using the literature matrix; each article was carefully evaluated, and a determination was made by the reviewer of its sufficiency. Once the visual display or literature matrix was completed, it later served as a valuable tool to compare the data collected from the primary sources (see Appendix A). Categories portrayed on the literature matrix include study purpose, level of evidence, purpose of the study, sample characteristics, methods, level of evidence according to Melnyk's (2004) method, and determination of sufficient evidence for an evidence-based practice change. During the analysis of the literature matrix the reviewer was able to dissect the data accurately and thoroughly to draw conclusions for smaller categories of data.

Data Collection

The importance of the systematic literature search is to ensure that the most relevant evidence is incorporated into the IR. Once the data was collected for use in the IR, the writer implemented a management system. The reviewer then screened, selected, and sorted the data collected (Whittemore & Knafl, 2005). During the screening process the reviewer searched through the publications and determined its relevance to the IR topic; often the abstract was used to determine if an article was relevant. Next the writer selected the data and verified that a full text report was available; this information was stored under a comprehensive filing system. Lastly, data was sorted into studies where duplications were identified and noted.

The process of managing the collected data was well documented by the reviewer. Reporting the results of the systematic literature search was done both visually and narratively (Whittemore & Knafl, 2005). PRISMA is a method of reporting that uses a model to depict the process in which

information moved through the different phases of the review (see Appendix B). A PRISMA flow diagram is generated through multiple sources or created by the reviewer (see Appendix C). After the completion of an initial review of literature by the reviewer, 15 publications that were relevant to the subject topic were studied. The literature review was guided by PRISMA and can be found in Appendix A. The publications were compiled and placed into a literature matrix (see Appendix A). The literature matrix provides details on each selected piece of literature and specifies the quality by utilizing Melnyk's Level of Evidence rating system (see Appendix D). Melnyk (2004) categorized evidence by levels; articles are ranked from levels one to seven. Level one research includes systematic reviews or meta-analyses of randomized controlled trials (RCTs) and evidence-based clinic practice guidelines. Level two consists of RCTs, while level three includes controlled trials without randomization. Level four evidence is case-control or cohort studies, and level five is systematic reviews of descriptive and qualitative studies, while level six includes single descriptive or qualitative studies. Level seven evidence is given through expert opinion; in areas of interest where many studies are not existent and level seven evidence reinforces a need for more research. The literature matrix (see Appendix A) is void of level I-II evidence. This indicated the need for more research related to an increased awareness of the SDOH among pediatric clinicians and the impact on pediatric health outcomes.

Problem Identification Stage

Identification of the problem is the first step of the IR; it was imperative that the problem was clearly defined as the variable of interest and a sampling frame was conceived from the review problem and purpose (Whittemore & Knafl, 2005). A clearly identified problem then set well established boundaries for other stages of the review. IRs classically include multiple

variables, and pertinent data was more easily extracted with a well-defined research problem and purpose.

The reviewer used the IR to determine the awareness of pediatric provider awareness of SDOH and the impact this has on health outcomes. Research shows that childhood health is a strong predictor of adult health (Higginbotham et al., 2019; South et al., 2019). The IR helps to increase awareness of the importance of assessment of SDOH in the pediatric population and accumulate support to encourage pediatric providers to treat patients who have SDOH that negatively affect their health.

Literature Search Stage

During this step an inclusive search of the available data on the topic was performed (Whittemore & Knafl, 2005). A comprehensive search was conducted, which includes the use of at least two different search strategies. Terminology used to search for eligible studies was consistent. Utilization of computerized databases is the most common search strategy used and is typically adequate when searching for subject matter. The literature search process utilized by the reviewer was explicitly documented in the methods section of the IR to include search terms, databases, additional search strategies, and inclusion and exclusion criteria. The project displays a table of evidence detailing study purpose, sample information, methods, study results, level of evidence, study limitations, and support for a change (see Appendix A).

Data Evaluation Stage

During this step the reviewer was tasked with evaluating the quality of the research and selection of the research articles (Whittemore & Knafl, 2005). This arduous task was made more complex with a varied distribution of primary sources. The reviewer had much to consider when determining quality of primary sources especially when data sources are diverse. Primary

sources that are often included are case studies cross-sectional studies, grounded theory, and instrument development designs. Determining the quality of primary sources may require the help of quality criteria instruments (Whittemore & Knafl, 2005). The PRISMA checklist and Melnyk's pyramid served as instruments for the reviewer to determine quality of the primary literature sources selected.

Data Analysis Stage

The goal of this step was to interpret sources and synthesize the collected evidence to form a conclusion on the research problem (Whittemore & Knafl, 2005). This is most often done by categorizing the articles by patterns, themes, variations, and relationships. Lastly it was the duty of the researcher to present the evidence. Quantitative studies were included in the IR that addressed SDOH. The studies covered a variety of different topics, which made ordering, coding, and categorizing the results difficult. Therefore, a constant comparison method was done during this stage, and in the following steps—data reduction, data display, data comparison, conclusion drawing, and verification (Whittemore & Knafl, 2005).

Data Reduction

During the first stage of data analysis the reviewer needed to determine what classification system would be used to manage data (Whittemore & Knafl, 2005). Next, studies were divided into subgroups and analyzed in order. Subgroups can be based on any reasonable system determined by the reviewer. Next the data was simplified through extraction, then coding so that the reviewer was better able to concentrate and organize available information into a convenient framework. The framework is a matrix or spreadsheet that allows each primary source to occupy a single page. This was done so that data can be more easily compared.

Data Display. During this step the reviewer determined the type of display that is best for the IR (Whittemore & Knafl, 2005). Data displays that are often used include matrices, graphs, charts, or networks. As stated previously this was done so that data sources can be easily compared. The reviewer selected a display that best depicted the relationships between the primary sources and considered using different displays for each subgroup. A flow chart was used to help the reviewer visualize and comprehend the relationship amongst the findings and concepts from the articles.

Data comparison. During this step the data display was examined by the reviewer for themes, patterns, or relationships (Whittemore & Knafl, 2005). A concept map was then developed to help organize the data with like variables grouped together with relationships noted between variables and themes. Other strategies for comparison may be utilized by the reviewer including clustering, contrast and comparison, and discerning common and unusual patterns.

Conclusion drawing and verification. During this final stage of data analysis, the reviewer was tasked with further analyzing the patterns and relationships established in the data comparison stage to form generalizations that encompass each previously determined subgroup (Whittemore & Knafl, 2005). It was important that the reviewer included as much data as possible. Verification of the synthesized data was then completed by the reviewer when conflicting evidence was found and needed further exploration prior to moving forward with the review process. The review process was then completed with the synthesis of the data to formulate conceptualizations of the topic.

Presentation of Results

The conclusion of the IR was then reported in a diagram or table (Whittemore & Knafl, 2005). The conclusions were authenticated by the details of the presentation. The goal of the IR

was then fulfilled through further understanding of the identified topic. During the presentation the IR implications for practice, policy, and research were displayed and the limitations discussed. This project presents results in three methods: tables, flowcharts, and concept maps. The tables detail information in a narrative form and discuss the details of the literature search, supporting the conclusions (see Appendix A). The flowchart details the systematic approach used to perform the literature search (see Appendix C). The concept maps detail the relationships and themes found in the IR (see Figures 1 & 2).

Figure 1

Flow Chart of Themes A

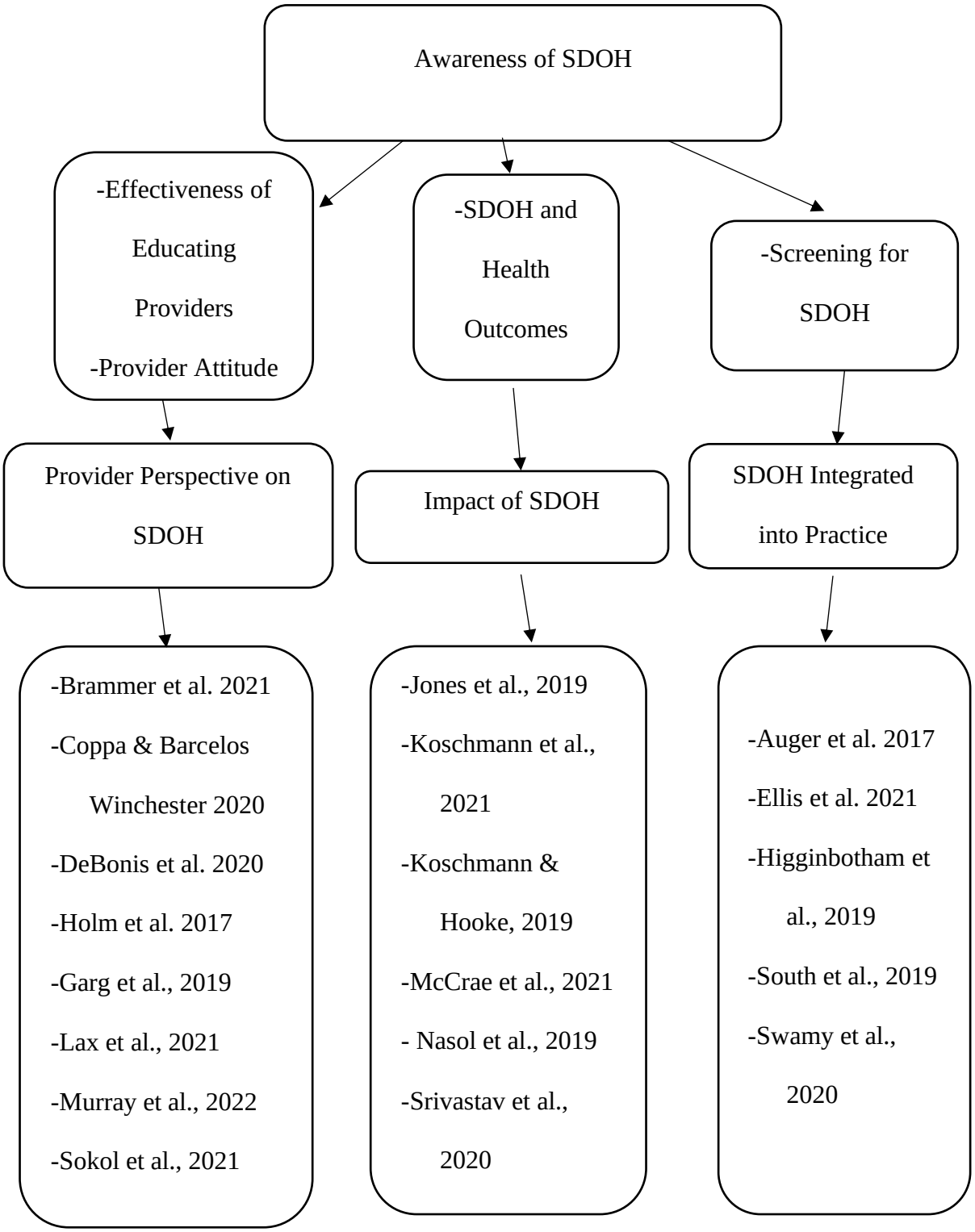
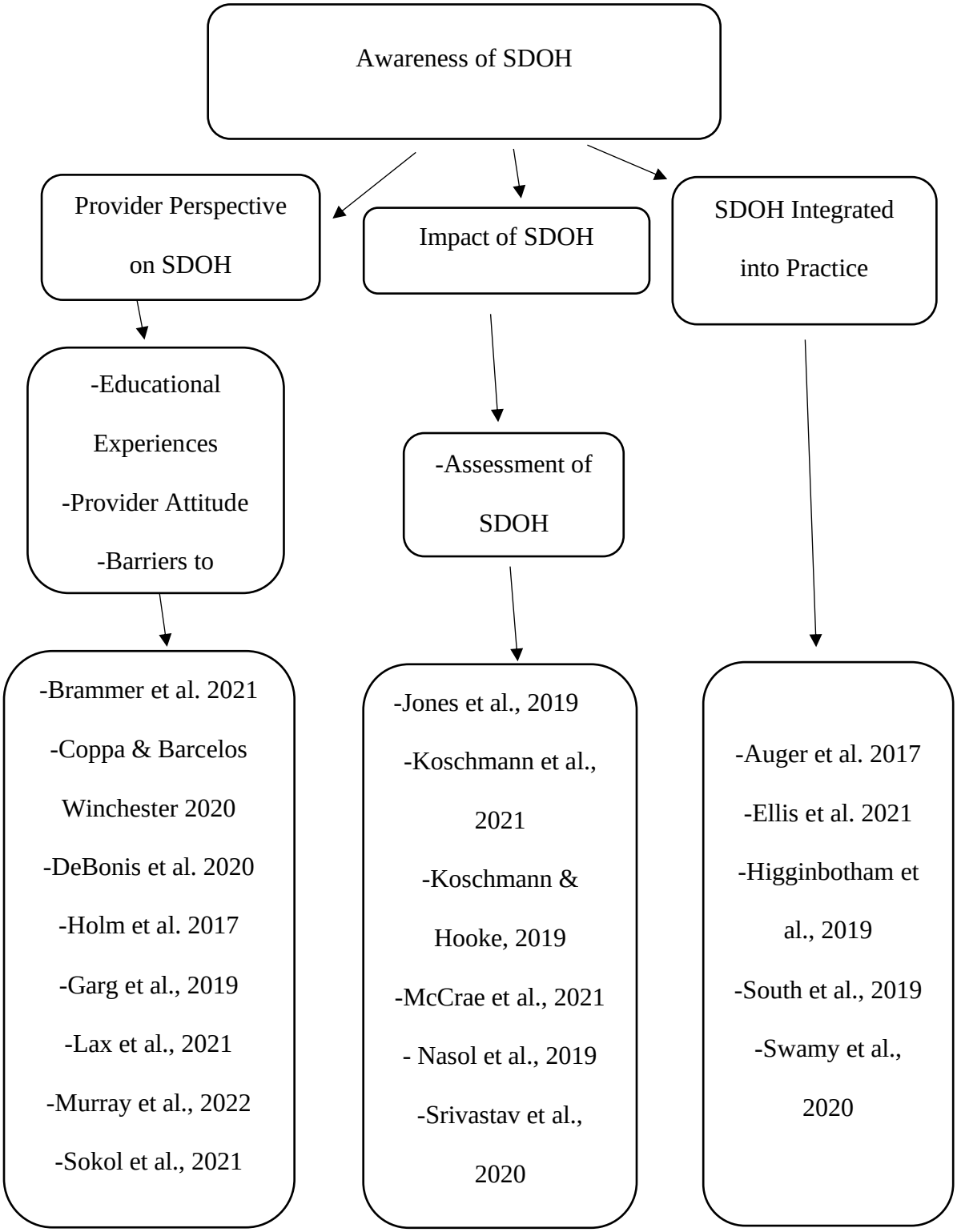


Figure 16

Flowchart of Themes B



SECTION TWO: SEARCH STRATEGIES

Search Organization and Reporting Strategies

IRs are a type of literature review that encompasses literature with the goal of obtaining a better understanding of a specific occurrence or phenomenon of interest. An IR is a body of work meant to explore a subject matter by support from experimental and non-experimental research according to Whittemore and Knafl (2005). The included research may or may not address multiple topics related to the subject matter. During the IR process studies are linked together to form conclusions, and much caution should be taken as the different studies often utilize different research methods. Therefore, literature searches must be thorough, logical, and reported with clear statements (Toronto & Remington, 2020).

Search Strategy

A literature search was conducted electronically through the Jerry Falwell Library on the Liberty University website with the assistance of a librarian. This search included a thorough review of available databases including: CINAHL PLUS, Health Source: Nursing/Academic Edition, and MEDLINE. This process began by entering Boolean terms into the search fields. Searched keywords included ‘pediatric’, ‘social determinants of health,’ ‘provider/practitioner,’ ‘awareness or knowledge or understanding,’ and ‘impact or effect or influence’.

Over 30,000 articles were retrieved during a preliminary search with ‘social determinants of health.’ Once the key words of ‘provider’, and ‘impact’ were entered along with inclusion and exclusion criteria, 22 articles were yielded. A different search with ‘social determinants of health’ and the keywords ‘practitioner/provider,’ ‘awareness/knowledge/understanding,’ and ‘impact/effect/influence’ produced 29 articles after inclusion and exclusion criteria were applied. These articles were then thoroughly examined by the reviewer of this IR and were included or

excluded based on relevance to the topic. Out of the combined 51 articles, 20 articles were selected for the review.

Melnyk Pyramid

To appraise the collected literature in a systematic way Melnyk's Levels of Evidence was utilized. Bernadette Melnyk developed a framework to serve as a tool that is conveniently placed in a pyramid and allows the user to assign a level to each selected literature piece (Melnyk & Fineout-Overholt, 2018). These levels range from Level I to Level VII starting with lower levels on the bottom of the pyramid and higher levels of evidence towards the top of the pyramid. During the process of screening, selecting, and sorting the collected data, the reviewer evaluates each item for quality. Melnyk's Levels of Evidence can be visualized in Appendix D.

PRISMA

The reviewer utilized a framework referred to as the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) for reporting of the literature search (Moher et al., 2009). The PRISMA method permits for an exhaustive search of the literature on a particular topic of interest. This guideline reduces biases and focuses on the IR evidence pieces instead of collectively (Toronto & Remington, 2020). The PRISMA guideline narrows published data on the selected topic to a practicable amount of data for analysis, and is used to increase quality and offers confidence to the reviewer that the proper evidence was used for the IR. A PRISMA Flow Diagram documents the flow of the literature search and can be visualized in Appendix C. The reporting of methods used in the IR gives the reader the ability to determine the credibility of the findings (Page et al., 2021). The PRISMA guideline helps decrease the amount of published data on the selected topic to a practicable amount of data for analysis, thus allowing other individuals interested in the work to determine if the findings are applicable to their setting.

The PRISMA guideline is used to increase quality and offers confidence to the reviewer that the proper evidence was used for the IR.

Terminology

Selecting the correct terminology to accurately portray the message the writer intended on communicating was important. Initially the writer picked terms to be entered into search fields of the selected databases. The importance of accurately selecting terminology was evident through the data retrieved. Relevant articles that were beneficial to the IR were revealed based on the writer's ability to select the appropriate terminology. To determine the importance of provider awareness of SDOH, the reviewer identified the essential terms to include in the search database were social determinants of health, provider, awareness, and impact.

The writer of this IR found the Boolean logic technique of searching to be the most effective way to find relevant articles. Synonyms were utilized to enhance the search using the above-mentioned terminology. Once the terminology was entered into the search fields a list of the publications associated with those terms appeared. Depending on the volume of the results retrieved, the writer needed to adjust the search terms to produce a list that was relevant and manageable.

Limitations

There were several limitations that should be noted for this IR. First, studies published in English were included; therefore, studies in other languages with possible relevant information were excluded. Second, the sole reviewer, who was also the primary researcher, was used; therefore, leaving no chance to guarantee accuracy. With a single reviewer the risk of bias was increased, thus affecting internal validity. Lastly, the screening systems utilized, PRISMA guidelines and Melnyk Pyramid, would often conflict; Therefore, some studies were included by

the reviewer regardless of the rating on the Melnyk Pyramid.

SECTION THREE: MANAGING THE COLLECTED DATA

This IR contained a systematic and comprehensive search resulting in 20 articles for review. The various articles selected for the IR differed by design and ranged from Level III to Level XI on Melnyk's Pyramid of Evidence (Melnyk & Fineout-Overholt, 2015). Four of the studies were controlled trials without randomization (Coppa & Barcelos Winchester, 2020; DeBonis et al., 2020; Higginbotham et al., 2019; Murray et al., 2022); 10 of the studies were case controlled or cohort studies (Auger et al., 2017; Ellis et al., 2021; Jones et al., 2019; Koschmann et al., 2021; Lax et al., 2021; McCrae et al., 2021; Nasol et al., 2019; Shah et al., 2019; Sokol et al., 2021; South et al., 2019); and six of the studies were single descriptive or qualitative studies (Brammer et al., 2021; Garg et al., 2019; Holm et al., 2017; Koschmann & Hooke, 2019; Srivastav et al., 2020; Swamy et al., 2020). The articles supported the problem statement that addressed the importance of pediatric provider awareness of SDOH and the impact on health outcomes.

PRISMA Flow Diagram

Data analysis is visualized using PRISMA. A flow diagram demonstrates the methodology that PRISMA supports (see Appendix C). The beginning of the flow diagram reveals the number of articles identified from the initial search. Over 30,000 articles were initially identified for review; once key terms were applied, a total of 51 articles were identified for review. After further review of titles and abstracts, 20 articles were selected and shown in the literature matrix (Appendix A).

Effectiveness of Educating Providers

A provider who has not been educated to screen for SDOH will miss an opportunity to

offer much needed benefits to families who are suffering. Brammer et al. (2021) identified that healthcare providers who work with Medicaid patients must be proficient in identifying and addressing SDOH, but this is not occurring due to a problem related to education. Brammer et al. suggested using virtual reality simulations (VRS) to educate healthcare providers on content related to addressing SDOH. The providers who were used as participants were overall satisfied with the simulation, they found it easy to use, noted that it was a useful educational tool, and helped to promote empathy for patients.

Coppa and Barcelos Winchester (2020) discussed a study to evaluate the concept mastery, clinical application of SDOH, and cultural fluency in a group of Nurse Practitioner (NP) students. Students were placed in both non-academic and academic clinical partnerships and evaluated by their preceptors. In both settings students' final scores had improved for SDOH and cultural fluency. The findings of this study suggest that an advanced practice educational curriculum should include evaluations for cultural fluency and SDOH, and clinical assignments should be diverse for experiences that will help solidify the content taught.

SDOH and Chronic Disease

Certain risk factors are known to contribute to health disparities in children, especially those with chronic illness such as type 1 diabetes. Ellis et al. (2021) discussed a study to: (1) test associations between family conflict, neighborhood adversity, and glycemic outcomes in a group of urban, young, Black adolescents with type 1 diabetes; and (2) determine if neighborhood adversity moderated the relationship between family conflict and HbA1c. Ellis et al. found that variability in neighborhood adversity predicted diabetes related health outcomes in the study participants. Therefore, it is important for providers to assess for SDOH to help improve health outcomes in patients with diabetes. South et al. (2019) looked to determine the correlation

between FI and high blood pressure in a group of children and adolescents. South at al. found that household and food insecurity were linked to high blood pressure in the group and FI may impact heart health. There is much research that still needs to be done to determine the extent FI effects health disparities.

Provider Attitude and Perceptions

Provider attitude is important to consider when updating or changing current processes. For instance, a provider who has a poor attitude about performing a task is less likely to perform, or it may not be done in a way that is not up to the standard. DeBonis et al. (2020) performed a study to evaluate the poverty related knowledge and attitudes of primary care providers (PCPs) and their staff after they were given an educational initiative. The education offered focused on SDOH and poverty. Out of the 58% who completed the surveys it was found that post-education score perceptions were higher than pre-education score perceptions. DeBonnis et al. also supports the need for education for healthcare providers related to SDOH and poverty. Garg et al. (2019) collected data from the AAP on low-income screening for families with social needs, attitudes towards screening, and referral of low-income families for community resources. Garg et al found that most pediatricians believed screening was important but not feasible and that pediatricians were more likely to screen and refer when they had additional patients suffering from financial problems and someone working within their practice to connect families to community support services. A positive attitude had a significant impact on whether a patient was screened for SDOH.

Provider attitude often reflects an unconscious bias that can negatively impact the type of care or treatment offered. Holm et al. (2017) discussed how an initiative was started with the goal of increasing the awareness of inequalities related to SDOH and increase employee's

motivation to reduce these inequalities. Employees were then given the chance to partake in awareness-raising activities and privilege and responsibility curricular exercise trainings. The employees then offered their feedback by means of a survey. Results indicated that the exercises have the potential to offer a strong learning experience the participants enjoyed. Lax et al. (2021) assessed provider perceptions and attitudes concerning low-income children and differences between primary care physicians and subspecialists in SDOH screening and referral practices for low-income children. Results showed that 88% of respondents reported feeling comfortable caring for low-income children, 28% reported comfortability in screening for SDOH, and 34% felt comfortable referring for community services. PCPs were also found to screen more often than subspecialists. Lax et al. identified feasibility of screening and addressing social needs was identified as a major issue.

Murray et al. (2022) discussed how clinicians may know little about the challenges that poverty present due to their own personal experiences; a study was conducted to evaluate the impact of a of program that simulated poverty to allow providers a better understanding in hopes of development of an attitude to support socioeconomically disadvantaged families. Murray et al. calculated an Attitudes Toward Poverty (ATP) score and found average scores in the domains of stigma and structural perspective improved post-simulation, while personal deficiency scores remained unchanged. Murray et al. found lower ATP scores in white, males with liberal political views, and participants felt that the simulation created feelings of compassion and empathy. These types of simulations may be beneficial for providers, but more research is needed before a determination can be made. Sokol et al. (2021) discussed pediatric providers' perspectives on SDOH screening and determined that the providers support the need, but barriers are present that impede the process and decrease efficacy.

Shah et al. (2019) discussed how many public health practitioners' readiness to become change agents in promoting screening for SDOH is not well researched. Shah et al. found a gap exists between practitioners' perceived desirability for involvement in screening for SDOH. The results increase the need to further research in education on SDOH and health equity.

Screening for SDOH

With the common saying that knowledge is power, patient care providers' ability to effectively treat their patients is based on the education that is available to them, and without proper education to screen for SDOH patients are left at the will of their circumstances. Auger et al. 2017 found that families who are affected by socioeconomic hardship could possibly benefit from SDOH screening, in doing so resources that could help the family may be better allocated. Higginbotham et al. (2019) discussed the implementation of a Quality Improvement (QI) project that focused on assessing and addressing unmet social needs of young children receiving healthcare services in a rural health clinic. This project concentrated on food and housing insecurity by issuing a screening tool to families who were scheduled for well-child visits. Higginbotham et al. found that this QI initiative positively impacted well-child care from newborn to five years of age in numerous ways: (1) recognized a formal process for identifying and referring children and families with unmet food and housing needs; (2) identification of children who positively screen for food and housing insecurity gave pediatric providers an opportunity to intervene, thus decreasing the likelihood of childhood toxic stress, altered brain development, and poorer health outcomes as adults; (3) facilitated a need that could ultimately lead to allocation of more resources; and (4) demonstrated the feasibility of adding a simple screening and community resource referral process to well-child appointment in rural health clinics. Screening for unmet SDOH was highly recommended, especially by pediatric healthcare

providers.

Swamy et al. (2020) aimed to find the SDOH that were not being met for the patients at Pasadena-Pediatric and Adolescent Health Center and to understand the providers' perspectives on screening. The cross-sectional study determined that healthcare access was the biggest SDOH concern; providers agree that SDOH screening is a valuable tool; and more research is needed to determine caregiver perspective on standardized screening versus obtaining a routine social health history.

SDOH and Health Outcomes

Nonaccidental Trauma

The relationship between SDOH and health outcomes is well documented. The leading cause of pediatric mortality and disability is nonaccidental trauma (NAT). Jones et al. (2019) reviewed institutions' experience with NATs retrospectively to determine if socioeconomic status played a role in patient outcomes. Jones et al. found a significant association between insurance status of the pediatric patient and injury severity. Children without health insurance were eight times more likely to die in the hospital after being injured. Jones et al. highlighted the importance of identifying high-risk patients according to socioeconomic status to improve health outcomes. McCrae et al. (2021), focusing on taxic stress, reported how partnerships are needed with community agencies to mitigate the impact of SDOH on at risk children.

Adverse Childhood Experiences

ACEs have been associated with poor health and social outcomes in adults. Srivastav et al. (2019) examined the perspectives of child and family serving professionals (CFSP) and state policymakers were examined to determine protective factors and to develop policy and program suggestions to address ACEs. Srivastav et al. found three protective factors were found: (1)

loving, trusting, and nurturing relationships; (2) safe home environments; and (3) opportunities to thrive. CFSPs and policymakers had a range of different opinions on state government involvement and prevention for ACEs but they both identified the importance of the protective factors to mitigate the effects of ACEs. Srivastav et al. also offers findings that encourage more research.

Low Quality Well-Child Care

For African American and low-income children, the quality of primary care is lower when compared to their white counterparts (Koschmann et al., 2021). This disparity is directly related to SDOH and the impact they have on health outcomes. Koschmann et al. (2021) discussed how higher quality well-child care can deter the negative effects of SDOH, and provided a perspective of experiences and expectations of urban, low-income African American families. Koschmann et al. (2021) offered insight on the cause of healthcare disparities and parents' healthcare behaviors while giving guidance on well-child care for this vulnerable population to enhance pediatric care quality and child health. Koschmann and Hooke (2019) reviewed literature to evaluate the patient-provider relationship for African Americans. The results identified parent factors, provider factors, parent-provider interaction factors, and health care system factors that influenced the parent-provider relationship, and discussed best practices, as well as future research recommendations for providers to improve primary care quality for African American children.

Nasol et al. (2019) discussed the associations between attention-deficit/hyperactivity disorder diagnosis with race/ ethnicity and parent education. Nasol et al. sought to determine how measures of socioeconomic status relate to adverse financial impact of ADHD and disparities in untreated ADHD. Nasol et al. found that 44.3% of children experienced adverse

family financial impact from ADHD, and 11.6% needed treatment for ADHD. Non-English-speaking families were more likely to have an unmet need for ADHD treatment. Nasol et al. reveals the importance of knowing a family's financial circumstances to help determine future policy for targeting community resources.

SECTION FOUR: QUALITY APPRAISAL

Quality appraisal is the next step after data is collected and organized. According to Toronto and Remington (2020), quality appraisal is defined as a systematic assessment for the purpose of evaluating the value, relevance, and reliability of the selected literature. Application of the inclusion and exclusion criteria and determination of the relevance of the literature directed the IR process, all of which relates to the initial review question. To uphold rigor, all strengths and weaknesses of the studies were considered when relating to the methodology.

Ethical approval is a requirement of quality appraisal. For this IR, the project researcher and project Chair completed the Collaborative Institutional Training Initiative (CITI) training (see Appendix E). This training was done to guarantee the comprehension of the significance of protecting human subjects in research. Institutional approval was received through the Liberty University Institutional Review Board (IRB) to proceed with the IR as the project did not include human subjects and was considered as exempt (see Appendix F).

Toronto and Remington (2020) described the method in which the data search should be completed. For this IR that description was followed, and the search ended when the search strategy was modified by adding relevant terms pertinent to citations related to the topic. Additional searches yielded no new or exclusive results and a search of authors considered experts on the topic revealed no new citations.

Sources of Bias

Performing an appraisal of the collected evidence offers an opportunity for the researcher to detect biases within the collection of literature. As bias is minimized, the quality of the studies increases (Toronto & Remington, 2020). The researcher examined each study for potential sources of bias, as this issue may appear at any stage during the research process. A professional librarian was utilized in the search phase of this IR to help minimize the chance of bias.

Internal Validity

Internal validity is attributed to how reliable the study results are found to be. When biases are present, the internal validity can be questioned, which may deem the study not useful. Different biases can occur during a study. Careful consideration must be made when selecting studies; reviewing the type of research utilized, limitations, and potential bias help in determining if the study is adequate.

For this IR the reviewer selected studies based on the problem statement and clinical review questions. Unfortunately, each of the selected studies did not entirely address the problem statement; therefore, the reviewer was required to conceive conclusions based on the clinical questions. From those conclusions the following themes were born: (1) provider perspectives on SDOH, (2) impact of SDOH on health outcomes, and (3) and how SDOH are integrated into prescriptive practice.

Appraisal Tools

A recommendation for a specific method of quality appraisal has not been made for IR (Toronto & Remington, 2020). Although quality appraisal is extensively inconsistent, many methods are frequently used in healthcare. Melnyk's Level of Evidence pyramid was utilized for this IR (Appendix D), thus assisting in organizing the literature into categories. The literature matrix (Appendix A) displays the quality appraisal.

Reporting Guidelines

The writer utilized the PRISMA guidelines for reporting of the literature search. This guideline reduces biases and focuses on the IR evidence pieces instead of individually (Toronto & Remington, 2020). The PRISMA guideline narrows published data on the selected topic to a practicable amount of data for analysis, and is used to increase quality and offers confidence to the reviewer that the proper evidence was used for the IR. A PRISMA Flow Diagram documents the flow of the literature search and can be visualized in Appendix C.

Applicability of Results

The nature of the IR is to increase the knowledge on what is already understood about a topic, then to create solutions after the application of the results (Whittemore & Knafl, 2005). The themes for this IR were found within the studies then analyzed for result application. The main themes were: (1) provider perspectives on SDOH, (2) impact of SDOH on health outcomes, and (3) and how SDOH are integrated into prescriptive practice. These three themes were recurrent within the literature and are applicable to current health care efforts to improve the lives of individuals negatively affected by SDOH, improve health outcomes, and in doing so improve the health of the world.

Provider Perspectives on SDOH

The IR supported the insight that pediatric provider perspective plays a role in the care they give. Personal perspective reflects what ideas are based on, and through education that provides a wide range of experiences, personal perspectives may be altered or adjusted (DeBonis et al., 2020). Along with support for education on SDOH and poverty, the IR also suggests the use of an initiative to increase care providers awareness on inequalities related to SDOH (Holm et al., 2017). Furthermore, Coppa and Barcelos Winchester (2020) found that an advanced

practice education is needed to address SDOH and cultural fluency along with diverse clinical experiences. A pediatric provider who was privileged enough to not experience poverty or know someone personally who lived in poverty is more likely to lack empathy towards patients who screen positive for SDOH. Through education, perceptions can be altered to increase awareness of SDOH and ultimately improve the health of patients.

The IR also acknowledged providers with positive attitudes and their impact on screening SDOH in patients (Garg et al., 2019). Comfortability reflects attitude. Lax et al. (2021) assessed perceptions of primary care physicians and subspecialists of screening and referring practices for SDOH the authors found that 88% felt comfortable caring for low-income children, 28% felt comfortable screening for SDOH and 34% felt comfortable referring to community services. Supporting providers through offering modalities to broaden their mindset will offer benefits to patients that reach beyond traditional treatments. Brammer et al. (2021) studied the use of VRS to educate providers and results were promising; the providers scored the simulation high on likeability and usability, and felt the tool made them more empathetic towards patients. In a different study Murray et al. (2022) found that simulations may be beneficial for providers in understanding poverty, but more research is needed. SDOH have been extensively researched and a plethora of data exists on SDOH and how they affect individuals, while limited information is available on ways to counteract the devastating impact, especially in pediatric patients.

Sokol et al. (2021) found that providers support the need for screening but were deterred by barriers, and in a different study Shah et al. (2019) found that there is an interruption between a provider's desire to screen for SDOH and their actual involvement in screening. Pediatricians also believed SDOH screening was important but not practical, especially when a limited number

of patients have financial issues and when a staff member was not available to help connect the family to community support (Garg et al., 2019).

Impact of SDOH on Health Outcomes

The impact that SDOH have on health outcomes can be detrimental to families, especially those with young children. The IR supports the importance of assessing SDOH of pediatric patients and their families, as this assessment is essential in revealing pertinent information such as income level. Knowledge of financial circumstances helps influence future policy for community resources (Nasol et al., 2019). Assessing financial status also helps determine a family's capability to afford and maintain health insurance. The lower socioeconomic status families typically qualify for Medicaid/ Medicare benefits, and families who have adults making an adequate income and working in jobs that offer benefits often opt for private insurance. However, many families are left in the predicament of making too much money for Medicaid and not enough to purchase private insurance, placing their family at risk. Jones et al. (2019) found that there is connection between insurance status and injury severity in pediatric patients. To improve health outcomes of children and decrease mortality rates, assessment of SDOH must become commonplace.

Improving health outcomes does not solely rely on pediatric providers; multiple agencies need to become involved to adequately address the issues that SDOH present. McCrae et al. (2021) found that partnerships are needed with community agencies to reduce the effects of toxic stress on pediatric patients, and protective factors, such as loving, trusting, and nurturing relationships, safe home environment, and opportunities to thrive are needed to mitigate the effects of ACEs (Srivastav et al., 2019). Opportunities both inside and outside the healthcare setting are essential in improving the health of vulnerable populations. The IR also supported

improving the quality of primary care to improve health outcomes in African American and low-income children (Koschmann et al., 2021). Often children of African American and low-income families are not afforded the healthcare they deserve. This lack can be contributed to many factors including biases among healthcare professionals and limited available services due to an overwhelming need. A review of literature recommended more research to improve primary care quality for African American children (Koschmann & Hooke, 2019). Improving quality of care leads to better outcomes for children, thus improving the health of an individual over their lifetime.

SDOH Integrated into Prescriptive Practice

Treatment of patients is done by assessment of their physical and mental well-being; the assessment of their social status should be included to offer care that is truly holistic. Auger et al. (2017) suggested that families affected by socioeconomic hardship could possibly benefit from SDOH screening. Adding SDOH screening as a regular practice norm allows families a chance to receive help that they otherwise would likely go without. A QI initiative positively impacted well-child care in young children in multiple ways: (1) a formal process was created; (2) positive screening warranted immediate action of the provider, thus decreasing long term health risks; (3) spotlights a need in the community; (4) demonstrated how easy and effective simple SDOH screening and community referral can be in a rural health clinic (Higginbotham et al., 2019). The QI project was led by a NP and validated the feasibility of screening for SDOH. In a different study, Swamy et al. (2020) determined providers agree that SDOH screening is a valuable tool, and more research is needed on caregiver perspective on social screening.

In young, Black, adolescents, changes in neighborhood adversity predicted diabetes related outcomes (Ellis et al., 2021). This demonstrated the importance of screening for SDOH,

as the neighborhood a patient lives in have a major impact on their health, especially in vulnerable populations and children. Families left wondering where their next meal is coming from also places a significant burden on health. FI affects health, yet South et al. (2019) indicated more research is needed to determine how much FI affects health disparities.

SECTION FIVE: QUALITY APPRAISAL AND SYNTHESIS

Data analysis is when primary sources are impartially interpreted, and synthesis of the evidence occurs (Whittemore & Knafl, 2005). The analysis stage encompasses the steps of data reduction, display, and comparison. The following themes were identified: (1) provider perspective on SDOH; (2) impact of SDOH on outcomes; and (3) SDOH integrated into prescriptive practice. This analysis and synthesis provided a foundation to address pediatric provider awareness of SDOH.

Data Analysis Methods

First, the goal of the IR is reviewed which is to develop a better understanding of an issue (Toronto & Remington, 2020). This is the step in the IR process where new concepts are formed for better comprehension of the phenomenon of interest. Data analysis is the activity that generates more knowledge on the issue. The method utilized to examine the data closer was constant comparison, themes were identified that support the subject thus contributing to a greater knowledge base.

For this IR the reviewer utilized a data matrix to organize and exhibit the citation, study purpose, sample characteristics, methods, study results, level of evidence, study limitations, and reason on if the evidence supports a change (Appendix A). Examination of the study characteristics revealed themes that were common throughout the literature. The most prevalent themes that were identified include provider attitude and perceptions, SDOH and screening,

SDOH and health outcomes, SDOH and chronic disease, and educating providers (see Figures 1 & 2).

Synthesis

The development of new information is the result of the synthesis of different sources and is considered as an innovative and complex process (Toronto & Remington, 2020). This IR's purpose and review questions guided the synthesis of the results to progress into themes. The identified themes for this review include provider attitude and perceptions, SDOH and screening, SDOH and health outcomes, SDOH and chronic disease, and educating providers. The strength of the research is low as 20% of studies were rated at a level three on Melnyk's Level of Evidence Pyramid (Appendix A). The results of this IR support the need for pediatric provider assessment of SDOH to improve health outcomes. The results further reveal limited research on the topic exists, which further supports the importance of this IR to encourage stronger evidence.

Provider Perspectives on SDOH

Educational Experiences. Many pediatric providers fail to assess for SDOH because of a lack of awareness. Educational experiences are available all over the country, and some providers may miss out on valuable learning experiences depending on the location and available opportunities. To increase a provider's awareness to assess, educational experiences must be offered that focus on SDOH, poverty, and cultural fluency (Brammer et al., 2021; Coppa & Barcelos Winchester, 2020; DeBonis et al., 2020; Holm et al., 2017; Murray et al., 2022). DeBonis et al. (2020) discussed a study on the evaluation of providers and staff on poverty-related information following a 2-hour educational program and found that those who engaged in the study showed significant positive changes on perceptions and knowledge. The staff recommended that the education become a requirement and acknowledged that this competency

has not been adequately addressed in the past. Also, DeBonnis et al. showed that a relatively short educational program can have significant effects on the staff, thus improving care for patients.

Holm et al. (2017) discussed a curriculum to increase awareness of inequalities related to SDOH in participants and results determined that the educational exercises were strong learning tools and would likely enhance the other different equity and diversity related trainings. Participants detailed understanding an increased personal awareness of their own societal position, a realization that the experiences of their peers were unequal or unjust, a better understanding of societal structure and how privilege is unequally distributed, and developed personal initiative to use their privilege to address disparities. Coppa and Barcelos Winchester (2020) discussed a project to evaluate the concept mastery and clinical application of cultural fluency and SDOH competencies in NP students. Coppa and Barcelos Winchester also found that final evaluation scores improved from mid evaluation scores, and non-academic clinical partnerships performed better than academic clinical partnerships. An adequate and complete education of a health-care worker in primary care, especially vulnerable populations, must encompass the mastery of SDOH and cultural fluency.

In a study by Brammer et al. (2021), VRSs were developed to decrease the unconscious bias and increase empathy related to SDOH in health care providers (HCP); results indicated the tool was easy, useful, promoted empathy, and participants were satisfied with their experience. The VRS was a positive learning experience and participants were better able to identify SDOH and improve their interactions with patients. The authors indicated a need for more research on the education of providers with other learning methods and with larger sample sizes. Murray et al. (2022) examined the impact of a poverty simulation on clinicians was evaluated and they

found that scores improved following the event, positively impacting attitudes towards poverty. Follow up data indicate the positive effect may be temporary. To decrease provider stigma and discrimination towards low-income patients, education focused on how individuals experience poverty is essential. This education should be ongoing to truly effect change by reducing disparities in at-risk patients.

Provider Attitude. Caring for patients can often become an arduous task. The rate of provider burnout is at an all-time high and the feelings and attitude that providers have are often reflected in their work. To increase the likelihood that pediatric providers screen for SDOH changes must be made to improve the attitudes of the providers (Garg et al., 2019; Lax et al., 2021). Garg et al. (2019) found that pediatricians were more likely to screen for SDOH if they had a positive attitude. Lax et al. (2021) discussed a study that assessed perceptions and attitudes of providers who care for low-income children and assesses the differences between primary care physicians and subspecialists in SDOH screening and referring practices. Lax et al. found that 88% of participants reported feeling comfortable caring for low-income children, 28% felt comfortable screening for social and financial needs, and 34% were comfortable referring to community services. Also, PCPs more commonly referred than subspecialists. Offering providers professional development opportunities on the topic of SDOH may help change the current practice.

Barriers to Screening. Patients who are affected by SDOH are often burdened with obstacles when it comes to accessing healthcare services. Providers who care for these patients are also afflicted with obstructions when attempting to assess and treat vulnerable populations. To allow providers to adequately assess for SDOH, barriers need to be eliminated (Garg et al., 2019; Lax et al., 2021; Shah et al., 2019; Sokol et al., 2021). Garg et al. (2019) it discussed a

survey that was issued by the AAP to determine pediatrician practice of screening and referring for SDOH, reporting that 61.6% felt screening was important, 20.2% were prepared to screen and 39.9% felt screening was feasible. Garg et al. also found that pediatricians were more likely to screen if they reported more patients with financial hardships and had access to a staff member responsible for connecting the patient to community resources. The data in this study was collected in 2015, prior to AAP's policy statement on Poverty and Child Health, which recommends SDOH screening. It appears that limits on time and staffing may prevent pediatricians from screening for SDOH. Lax et al. (2021) also mentioned that although providers determined a desire to offer care that encompassed screening and assessing for SDOH they felt limited by barriers.

Sokol et al. (2021) discussed a study one to assess pediatric providers' perspectives on incorporating SDOH into practice. Sokol et al. found that although the providers recognize the need for SDOH screening, barriers were present that impede the process and reduce effectiveness. Sokol et al. suggested integrating SDOH screening into the EHR, simply giving families referral info may be beneficial, consider remote patient navigators, and establish optimal times for screening. Shah et al. (2019) examined public health employees' desire to impact health equity and outcomes and found that although the employees wanted to be involved, they were not active in such efforts. Shah et al. discusses how policy and practice initiatives to improve health equity may be beneficial and the use of educational programs for employees.

Impact of SDOH on Health Outcomes

Assessment of SDOH. This IR supports the importance in assessing for insurance coverage in pediatric patients (Jones et al., 2019; Nasol et al., 2019). Nasol et al. (2019) discussed how socioeconomic status correlates with the financial burden of ADHD and

disparities in children with untreated ADHD; results show that 44.3% of the children with ADHD felt adverse family financial impact and 11.6% needed treatment for ADHD but did not receive it. Nasol et al. discussed how unmet needs were significantly higher in non-English speaking households and how families from non-English speaking cultures may not recognize the need for treatment of ADHD. Screening for SDOH may help decrease unmet needs for ADHD treatment. Jones et al. (2019) discussed in an article on NAT it is suggested that a higher rate of mortality extends into adulthood and affects future generations. It is recommended that studies should be performed on the systems and circumstances to insure uninsured children, with improvement in coverage for children it is likely that there will be a decrease in mortality in children who suffer from NATs.

While it is important for pediatric providers to assess and treat for SDOH, this task cannot be done alone. Partnerships are needed to thoroughly address SDOH and improve health outcomes (McCrae et al., 2021). McCrae et al. (2021) discussed the need to apply different methods to increase screening of SDOH and offer support to families of infants that addresses toxic stress.

Providing care that is focused on value has become a priority in many health institutions. This type of care should also be a goal when treating individuals who screen positive for SDOH, by improving the quality of care to improve health outcomes in vulnerable populations (Koschmann & Hooke, 2019; Koschmann et al., 2021). Koschmann and Hooke (2019) discussed a review of literature on pediatric primary care relationships with African American families that identified multiple factors that would strengthen the parent- provider relationship, in doing so parents will then be more likely to share psychosocial information. Providers must develop a rapport with parents to treat with SDOH patients efficiently and effectively. Koschmann et al.

(2021) discussed how providers must communicate effectively, especially in low-income and African American families.

SDOH Integrated into Prescriptive Practice

This IR supports the concept that pediatric providers have enough awareness to screen for SDOH to improve the health outcomes in their pediatric patients (Auger et al., 2017; South et al., 2019). Auger et al. (2017) looked to determine a connection between neighborhood-level socioeconomic data and family-reported hardships. Auger et al. discussed how children living in poor neighborhoods were generally found to be at a disadvantage, and assessment of neighborhood data in a social or environmental history will allow for better allocation of services. SDOH screening that includes determining patients' neighborhoods based off their address, all of which occurs when patient gives their demographic information, will help to identify at-risk families. South et al. (2019) that sought to determine a correlation between FI and high blood pressure in children and adolescents the authors discussed how FI is linked, not only to children with high blood pressure, but also linked to adverse emotional, behavioral, and academic outcomes, and increased hospitalization during early childhood. This correlation reveals the importance of screening for SDOH, more specifically, FI in pediatric patients, to reduce the incidence of a variety of poor outcomes.

SECTION SIX: DISCUSSION

To reiterate, the purpose of this IR was to determine if SDOH awareness by pediatric providers improves the chance for better health outcomes in patients. The cost of healthcare in the United States is rising, and a contributing factor to this increase is SDOH. In 2020, healthcare spending accounted for 4.1 trillion dollars (CMS, 2021). SDOH places a burden on many families and puts them at risk for developing disease that they otherwise would not have if their

social circumstances were better. This reason alone supports the IR, and the current issues surrounding SDOH prove the necessity of the IR to address gaps in knowledge and practice.

This IR integrated the data to answer the following questions:

1. What are pediatric care providers' perspectives on SDOH?
2. What is the impact of SDOH on pediatric health outcomes?
3. How best are SDOH integrated into prescriptive practice?

Provider Perspectives on SDOH

The IR revealed that for pediatric providers to assess for SDOH they must first be educated to do so; these educational experiences should be tailored to emphasize SDOH, poverty, and cultural fluency (Brammer et al., 2022; Coppa & Barcelos Winchester, 2020; DeBonis et al., 2020; Holm et al., 2017; Murray et al., 2022). The reviewer found that pediatric providers with positive attitudes were more likely to screen for SDOH (Garg et al., 2019; Lax et al., 2021), and barriers to screening should be eliminated so the providers could adequately screen their young patients (Garg et al., 2019; Lax et al., 2021; Shah et al., 2019). The perspective of the providers greatly influenced the frequency and thoroughness of their SDOH screening. Providers who were well educated on SDOH and the factors that surround individuals living in poverty were more open to screening. These programs did not have to be particularly long, as it was found that staff benefited from short educational sessions (DeBonis et al., 2020). Not only does this education improve the health of individuals, it also improves the healthcare workforce.

Attitude of the providers also played a major role in the care the patients received. Programs that offer benefits to clinicians who take patients covered by Medicaid may counteract the poor attitude and job dissatisfaction. Patients who receive state insurance are often given

incentives, while providers are often paid at a lower rate for Medicaid/Medicare patients. Offering providers better incentives may help to increase the quality of care for patients. This IR supports the use of social workers or specially trained staff for the use of community outreach in patients who are at a social disadvantage. Fostering positive relationships between providers and families starts with improving relationships between providers and the communities they serve.

Impact of SDOH on Health Outcomes

The IR proves that there is importance in assessing for insurance coverage in pediatric patients (Jones et al., 2019; Nasol et al., 2019). Striving to reach a goal of providing insurance to uninsured individuals first starts with assessing individuals at high risk for insurance coverage. Determining insurance coverage is a task commonly done with each healthcare encounter; offering additional support to patients without coverage helps to decrease the incidence of unmet needs within the pediatric population. It was also evident that improving the quality of care also improved health outcomes in vulnerable populations (Koschmann & Hooke, 2019; Koschmann et al., 2021). The literature supports providers establishing trusting relationships with parents in order to effectively and adequately treat children who screen positive for SDOH. Through better communication and the development of trusting relationships, families can feel more comfortable talking about their problems, and providers are able to offer a higher quality of care.

SDOH Integrated into Prescriptive Practice

The reviewer discovered most importantly, pediatric providers must have a certain amount of awareness to screen for SDOH in order to improve health outcomes (Auger et al., 2017; South et al., 2019). SDOH screening encompasses gathering a large variety of social factors from the patient. Collecting this information gives a better perspective on a pediatric patients' health and potential health outcomes. Pediatric providers are then better equipped to

intervene with treatment plans better catered to individuals who screen positive for SDOH.

Implications for Practice

The IR showed adequate evidence to change the way pediatric providers practice to support the screening of SDOH to improve health outcomes. Administrators and providers must consider the detrimental impact that screening positive for SDOH has on health outcomes. Protocols that require regular screening of pediatric patients must be implemented to counteract the effects that negative social factors can have on one's life.

The reviewer discovered various points of discussion for dissemination:

1) Access to educational experiences that focus on SDOH, poverty, and cultural fluency for pediatric providers and their staff.
2) Institutional support for providers in the workplace to improve their attitudes and increase the likelihood of SDOH screening.
3) Elimination of barriers to SDOH screening.
4) Importance of assessing for insurance in pediatric patients.
5) Improving health outcomes in pediatric patients is directly related to that provider's awareness of SDOH.

Future Work

Additional research is necessary to fully understand the impact SDOH has on pediatric patients. Development of policies that support not only at-risk patients but also the providers caring for them needs to be further explored as well. Involvement of key stakeholders is essential in developing a better understanding of provider awareness of SDOH in pediatric patients and impact on health outcomes.

Dissemination

Dissemination of the results is the last step of the scholarly project, although plans should be carefully made prior to the end of the project (Melnyk & Fineout-Overholt, 2018). Publication of the findings can be dispersed in methods that are comprehensible to invested parties and stakeholders. The ability of the reviewer to effectively communicate results allows for new or renewed outlooks on the topic. This encourages the development of new policy and further investigations.

The guideline for dissemination of findings is based on the knowledge translation process (Gagnon, 2011). Knowledge dissemination and exchange components present in this process include synthesis, dissemination, exchange, and application of knowledge to improve health and health systems. Reardon et al. (2006) developed a knowledge transfer planning guide based on five questions that should be considered during knowledge dissemination. What is the message? Who is the audience? Who is the messenger? What is the transfer method? What is the expected outcome? The dissemination plan also considers what possible outcomes may arise (Gagnon, 2011). Reardon et al. recognized three possible impacts: indirect use, direct use, or tactical use.

Findings

The findings of the IR are to be disseminated and include providers' perspectives and how they affect SDOH; how SDOH impact health outcomes in pediatric patients; and how SDOH integrate into prescriptive practices.

Objectives

The goal of dissemination is to successfully exchange findings from the reviewer to knowledge users (Gagnon, 2011). The objectives answer the question, 'What is the message?'. The objectives of the IR include describing the importance of pediatric provider awareness of SDOH and the impact that awareness has on health outcomes. The reviewer notifies pediatric

providers and the communities they serve on the importance of SDOH and how the trajectory of an individual's life can be changed by a single interaction through the IR.

Audience

The second question in Reardon et al.'s knowledge transfer planning guide is, 'Who is the audience?' (Gagnon, 2011). The primary audience that has interest in this topic includes health care systems, pediatric providers, and the patients and their families; each are impacted in a different way. Pediatric providers, include physicians, nurse practitioners, physician associates, nursing staff, and all ancillary staff involved in patient care. Everyone who has direct contact with patients can benefit from this IR. At any point during a healthcare visit, a patient or a family member may divulge information regarding their SDOH. Individuals involved in patient care have a responsibility to the families they serve to intervene.

The cost associated with treating pediatric patients who have poor health outcomes can be a burden on the healthcare system. This burden affects healthcare administrators and financial officers as they are then tasked with recovering these costs. The indirect cost associated with healthcare costs often falls in the laps of taxpayers who fund state provided insurance and the politicians who decide when and where funds are to be allocated. The trickle-down effect that occurs from a pediatric provider not being aware of a young patient's SDOH affects whole communities and ultimately the entire nation.

User Needs

The third question, 'Who is the messenger?', is answered while determining the user needs (Gagnon, 2011). First, the user must hear the message from someone who is qualified and passionate on the topic, the message can be amplified when being delivered by someone credible. The knowledge translation is tailored to the targeted audience; this required a detailed

explanation of the IR or a summary depending on the audience member. It was particularly important to customize the IR for pediatric providers; a conciliatory approach was necessary as this topic tends to be difficult for providers with innate or explicit bias preventing them from gaining a full impression of the IR.

Methods

The methods used to disseminate information to the audience include face-to-face meetings, written reports, or presentations (Gagnon, 2011). What is the transfer method? For this IR, the results are to be disseminated through a presentation at annual nursing conferences and potentially through a blog series. Public presentation will need approval from the local community-based healthcare system. Disseminating the results of the IR engages stakeholders such as pediatric providers and individuals who see an opportunity to make a change that will benefit the youth of their communities.

Resources

Dissemination of findings requires resources. These resources may be simple or complex. A simple resource may be a posterboard for a presentation; a complex resource may be large amount of money. Determination of resources and funding sources for dissemination must be acknowledged and obtained.

Barriers

Barrier assessment occurs to produce favorable practice outcome (Moran et al., 2019). The identified barrier is lack of support. This barrier can present itself at multiple levels to include lack of support from pediatric providers and/or key stakeholders. Topic sensitivity may become a barrier as pediatric providers may need to reassess their core values. It is important to disseminate the research findings in a way that garners support for the involved entities.

Conclusion

The emerging topic of SDOH is well understood as a major factor in the medical field. The AAP (2022) and AAFP (2019) have formally expressed their recommendations to pediatricians and family physicians on the importance and understandings of SDOH. Unfortunately, treating patients who have negative SDOH requires a complex solution. Clearly there is a gap in what is being recommended and what is being done. Although there is enough research to support SDOH, gaps have been identified on the pediatric providers' awareness of SDOH, thus endorsing a call to action.

This IR reviewed the findings on why it is important for pediatric providers to be aware of SDOH affecting their patients and the impact SDOH have on health outcomes. This is especially important in the setting of health disparities, considering the relationship between SDOH and health outcomes. Working to increase the awareness of pediatric healthcare providers and to improve health outcomes in patients with SDOH, this IR starts a pathway that leads to change. The IR encourages additional research to help close the gap between recommendations and practice. This review also reinforces a need to educate and support pediatric providers. Additional research is needed on methods to screen for SDOH in the pediatric population. The long-term effects of SDOH on health outcomes and a way to counteract negative outcomes also need to be studied further. Lastly research is needed to examine different ways healthcare providers can successfully and efficiently screen for SDOH. Clinicians' ability to assess individuals and communities for SDOH will allow them to offer better treatment plans that provide interventions benefitting patients and decreasing the likelihood of poor outcomes, offering a solution to the call for action.

References

Ashbrook, A., Essel, K., Montez, K., Bennett-Tejes, D. (2021, January). *Screen and intervene: A Toolkit for pediatricians to address food insecurity.* Food Research & Action Center. 2021. https://frac.org/wp-content/uploads/FRAC_AAP_Toolkit_2021.pdf

American Academy of Family Physicians. (2019). *Advancing health equity by addressing the social determinants of health in family medicine.* https://www.aafp.org/about/policies/all/social-determinants-health-family-medicine-position-paper.html

American Academy of Pediatrics. (2022). 2022 recommendations for preventive pediatric health care. *Pediatrics., 150*(1), e2022058044. https://doi.org/10.1542/peds.2022-058044

American Association of Nurse Practitioners. (2021, May). *NP fact sheet.* AANP. https://www.aanp.org/about/all-about-nps/np-fact-sheet

Asfaw, E. K., Guo, E. S., Jang, S. S., Komarivelli, S. R., Lewis, K. A., Sandler, C. B., & Mehdipanah, R. (2020). Students' perspectives: How will COVID-19 shape the social determinants of health and our future as public health practitioners? Health Education & Behavior, 47(6), 850–854. https://doi.org/10.1177/1090198120963117

Auger, K. A., Kahn, R. S., Simmons, J. M., Huang, B., Shah, A. N., Timmons, K., & Beck, A. F. (2017). Using address information to identify hardships reported by families of children hospitalized with asthma. *Academic Pediatrics, 17*(1), 79–87. https://doi.org/10.1016/j.acap.2016.07.003

Bleich, S. N., Jarlenski, M. P., Bell, C. N., & LaVeist, T. A. (2012). Health inequalities: Trends, progress, and policy. *Annual Review of Public Health, 33*(1), 7–40. https://doi.org/10.1146/annurev-publhealth-031811-124658

Bowen, F. R., Lewandowski, L. A., Snethen, J. A., Childs, G., Outlaw, F. H., Greenberg, C., Burke, P. J., Sloand, E., Gary, F., & DeSocio, J. (2022). A schema of toxic stress informed by racism, transgenerational stress, and disadvantage. *Journal of Pediatric Health Care*, *36*(2), 79–89. https://doi.org/10.1016/j.pedhc.2021.08.005

Brammer, S. V., Regan, S. L., Collins, C. M., & Gillespie, G. L. (2021). Developing innovative virtual reality simulations to increase health care providers' understanding of social determinants of health. *Journal of Continuing Education in the Health Professions, 42*(1), 60–65. https://doi.org/10.1097/ceh.0000000000000400

Braveman, P. (2017, June 22). *A new definition of health equity to guide future efforts and measure progress*. Health Affairs. https://www.healthafairs.org/do/10.1377/hblog20170622.060710/full/

Bruner, C. (2017). Ace, place, race, and poverty: Building hope for children. *Academic Pediatrics, 17*(7S), S123–S129. https://doi.org/10.1016/j.acap.2017.05.009

Centers for Disease Control and Prevention. (2020a, July 27). *Tools for putting social determinants of health into action*. Social determinants of health. https://www.cdc.gov/socialdeterminants/tools

Centers for Disease Control and Prevention. (2020b, September 10). *Infant mortality.* CDC. https://www.cdc.gov/reproductivehealth/maternalinfanthealth/infantmortality.htm

Centers for Medicare & Medicaid Services. (2021, December 15). *National health spending in 2020 increases due to impact of COVID-19 pandemic.* Newsroom. https://www.cms.gov/newsroom/press-releases/national-health-spending-2020-increases-due-impact-covid-19-pandemic

Committee on Community Health Services. (2005). The pediatrician's role in community pediatrics. (2005). *PEDIATRICS*, *115*(4), 1092–1094. https://doi.org/10.1542/peds.2004-2680

Committee on Hospital Care and Institute for Patient- and Family-Centered Care. (2012). Patient- and family-centered care and the pediatrician's role. *PEDIATRICS*, *129*(2), 394–404. https://doi.org/10.1542/peds.2011-3084

Condon, E. M., Sadler, L. S., & Mayes, L. C. (2018). Toxic stress and protective factors in multi-ethnic school age children: A research protocol. *Research in Nursing & Health*, *41*(2), 97–106. https://doi.org/10.1002/nur.21851

Cooper, H. M. (1989). *Integrating research: A guide for literature reviews* (2nd ed). Sage Publications.

Coppa, D., & Barcelos Winchester, S. (2020). Content evaluation of social determinants of health and cultural fluency to measure nurse practitioner application in clinical situations. *International Journal of Health Promotion and Education*, *58*(3), 124–136. https://doi.org/10.1080/14635240.2020.1719863

DeBonis, R. S., Meyer, J. R., & Brodersen, L. D. (2020). An educational initiative to affect poverty and social determinants of health-related knowledge and attitudes in primary care settings. *Journal of Health Care for the Poor and Underserved*, *31*(2), 756–766. https://doi.org/10.1353/hpu.2020.0059

Economic Research Service. (2022). *Food security in the U.S.* U.S. Department of Agriculture. https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/key-statistics-graphics.aspx#children

Ellis, D. A., Cutchin, M. P., Templin, T., Carcone, A., Evans, M., Weissberg-Benchell, J., Buggs-Saxton, C., Boucher-Berry, C., Miller, J. L., Al Wazeer, M., Gharib, J., Mehmood, Y., & Worley, J. (2021). Effects of family and neighborhood risks on glycemic control among young black adolescents with type 1 diabetes: Findings from a multi-center study. *Pediatric Diabetes*, *22*(3), 511–518. https://doi.org/10.1111/pedi.13176

Ely, D., & Driscoll, A. (2020). Infant mortality in the United States, 2018: Data from the period linked birth/infant death file. *National Vital Statistics Reports*, *69*(7), 1-18. https://pubmed.ncbi.nlm.nih.gov/32730740/

Fontenot, K., Semega, J., & Kollar, M. (2018). *Income and poverty in the United States: 2017.* United States Census Bureau. https://www.census.gov/content/dam/Census/library/publications/2018/demo/p60-263.pdf

Freeman, B. K., & Coker, T. R. (2018). Six questions for well-child care redesign. *Academic Pediatrics*, *18*(6), 609–619. https://doi.org/10.1016/j.acap.2018.05.003

Gagnon, M. L. (2011). Moving knowledge to action through dissemination and exchange. *Journal of Clinical Epidemiology*, *64*(1), 25–31. https://doi.org/10.1016/j.jclinepi.2009.08.013

Galea, S., Tracy, M., Hoggatt, K. J., DiMaggio, C., & Karpati, A. (2011). Estimated deaths attributable to social factors in the United States. *American Journal of Public Health*, *101*(8), 1456–1465. https://doi.org/10.2105/ajph.2010.300086

Garg, A., Cull, W., Olson, L., Boyd, A., Federico, S. G., Dreyer, B., & Racine, A. D. (2019). Screening and referral for low-income families' social determinants of health by us pediatricians. *Academic Pediatrics, 19*(8), 875–883. https://doi.org/10.1016/j.acap.2019.05.125

Healthy People 2030. (2020). *Social determinants of health.* U.S. Department of Health and Human Services. https://health.gov/healthypeople/priority-areas/social-determinants-health

Higginbotham, K., Davis Crutcher, T., & Karp, S. M. (2019). Screening for social determinants of health at well-child appointments. *Nursing Clinics of North America, 54*(1), 141–148. https://doi.org/10.1016/j.cnur.2018.10.009

Holm, A. L., Rowe Gorosh, M., Brady, M., & White-Perkins, D. (2017). Recognizing privilege and bias: An interactive exercise to expand health care providers' personal awareness. *Academic Medicine, 92*(3), 360–364. https://doi.org/10.1097/acm.0000000000001290

Institute for Healthcare Improvement. (2021). *The IHI triple aim.* http://www.ihi.org/Engage/Initiatives/TripleAim/Pages/default.aspx

Institute of Medicine, Committee on Quality of Health Care in America. (2001). *Crossing the quality chasm: A new health system for the 21st century*. National Academies Press. https://nap.nationalacademies.org/catalog/10027/crossing-the-quality-chasm-a-new-health-system-for-the

Jones, R., Babb, J., Gee, K. M., & Beres, A. L. (2019). An investigation of social determinants of health and outcomes in pediatric nonaccidental trauma. *Pediatric Surgery International, 35*, 869–877. https://doi.org/10.1007/s00383-019-04491-4

Keith, V. M., Nguyen, A. W., Taylor, R. J., Mouzon, D. M., & Chatters, L. M. (2017). Microaggressions, discrimination, and phenotype among African Americans: A latent class analysis of the impact of skin tone and BMI. *Sociological Inquiry, 87*(2), 233–255. https://doi.org/10.1111/soin.12168

Koschmann, K. S., & Hooke, M. C. (2019). Pediatric primary care relationships with African American families: A critical review. *Journal of Pediatric Health Care, 33*(6), 639–652. https://doi.org/10.1016/j.pedhc.2019.03.004

Koschmann, K. S., Peden-McAlpine, C. J., Chesney, M., Mason, S. M., & Hooke, M. C. (2021). Urban, low-income, African American parents' experiences and expectations of well-child care. *Journal of Pediatric Nursing, 60*, 24–30. https://doi.org/10.1016/j.pedn.2021.01.022

Krugman, S. (2019, March 22). Addressing social determinants of heath: Challenges and opportunities in a value-based model. *AAP Journal Blogs*. https://aap2.silverchair-cdn.com

Lax, Y., Bathory, E., & Braganza, S. (2021). Pediatric primary care and subspecialist providers' comfort, attitudes and practices screening and referring for social determinants of health. *BMC Health Services Research, 21*(956), 1–7. https://doi.org/10.1186/s12913-021-06975-3

McCrae, J. S., Robinson, J. L., Spain, A. K., Byers, K., & Axelrod, J. L. (2021). The mitigating toxic stress study design: Approaches to developmental evaluation of pediatric health care innovations addressing social determinants of health and toxic stress. *BMC Health Services Research, 21*(71), 1–14. https://doi.org/10.1186/s12913-021-06057-4

MacLeod, L. (2016). Mission, vision and values statements: The physician leader's role. *Physician Leadership Journal, 3*(5), 18–25. https://pubmed.ncbi.nlm.nih.gov/30571868/

Melnyk, B. M. (2004). Integrating levels of evidence into clinical decision making. *Pediatric Nursing, 30*(4), 323–325. https://pubmed.ncbi.nlm.nih.gov/15511051/

Melnyk, B. M., & Fineout-Overholt, E. (2018). *Evidence-based practice in nursing & healthcare: A guide to best practice* (4th ed.). Wolters Kluwer Health.

Moher, D., Liberati, A., Tetzlaff, J., & Altman, D. G. (2009). Preferred reporting items for systematic reviews and meta-analysis: The PRISMA statement. *PLoS Med 6*(7), e1000097. https://doi.org/10.1371/journal.pmed.1000097

Moran, K. J., Burson, R., & Conrad, D. (2019). *The doctor of nursing practice project* (3rd ed.). Jones & Bartlett Learning.

Murray, P. M., Sepulveda, A., & Baird, J. (2022). Longitudinal impact of a poverty simulation on healthcare practitioners' attitudes towards poverty. *Journal of Pediatric Nursing, 64*, 24–30. https://doi.org/10.1016/j.pedn.2022.01.016

Nasol, E., Lindly, O. J., Chavez, A. E., & Zuckerman, K. E. (2019). Unmet need and financial impact disparities for US children with ADHD. *Academic Pediatrics, 19*(3), 315–324. https://doi.org/10.1016/j.acap.2018.09.001

Oxford University Press. (2022). *Oxford English Dictionary.* https://www.oed.com/

Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., & McGuinness, L. A. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *British Medical Journal*, *372*(71). https://doi.org/10.1136/bmj.n71

Perez, N. P., Ahmad, H., Alemayehu, H., Newman, E. A., & Reyes-Ferral, C. (2021). The impact of social determinants of health on the overall wellbeing of children: A review for the pediatric surgeon. *Journal of Pediatric Surgery*. 57(4), 587–597. https://doi.org/10.1016/j.jpedsurg.2021.10.018

Perrin, J. M., Lu, M. C., Geller, A., & DeVoe, J. E. (2020). Vibrant and healthy kids: Aligning science, practice, and policy to advance health equity. *Academic Pediatrics, 20*(2), 160–162. https://doi.org/10.1016/j.acap.2019.11.019

Reardon, R., Lavis, J., & Gibson, J. (2006). *From research to practice: A knowledge transfer planning guide.* Institute of Work and Health.

Shah, G. H., Yin, J., Young, J. L., & Waterfield, K. (2019). Employee perceptions about public health agencies' desired involvement in impacting health equity and other social determinants of health. *Journal of Public Health Management and Practice, 25*(2), S124–S133. https://doi.org/10.1097/phh.0000000000000908

Sokol, R. L., Ammer, J., Stein, S. F., Trout, P., Mohammed, L., & Miller, A. L. (2021). Provider perspectives on screening for social determinants of health in pediatric settings: A qualitative study. *Journal of Pediatric Health Care, 35*(6), 577–586. https://doi.org/10.1016/j.pedhc.2021.08.004

South, A. M., Palakshappa, D., & Brown, C. L. (2019). Relationship between food insecurity and high blood pressure in a national sample of children and adolescents. *Pediatric Nephrology, 34*, 1583–1590. https://doi.org/10.1007/s00467-019-04253-3

Srivastav, A., Spencer, M., Strompolis, M., Thrasher, J. F., Crouch, E., Palamaro-Munsell, E., & Davis, R. E. (2020). Exploring practitioner and policymaker perspectives on public health approaches to address adverse childhood experiences (aces) in South Carolina. *Child Abuse & Neglect, 102*, 104391. https://doi.org/10.1016/j.chiabu.2020.104391

Suleman, S., Ratnani, Y., Stockley, K., Jetty, R., Smart, K., Bennett, S., Gander, S. & Loock, C. (2020). Supporting children and youth during the COVID-19 pandemic and beyond: A rights-centered approach. *Paediatrics & Child Health, 25*(6), 333–336. https://doi. 10.1093/pch/pxaa086

Swamy, P., Monterrey, A. C., Wood, M. S., Troisi, C. L., & Greeley, C. S. (2020). Caregiver and pediatric health care provider views on social needs identification. *Journal of Primary Care & Community Health, 11*, 1–7. https://doi.org/10.1177/2150132720923085

Toronto, C. E., & Remington, R. (2020). *A step-by-step guide to conducting an integrative review*. Springer. https://doi.org/10.1007/978-3-030-37504-1

U.S. Bureau of Labor and Statistics. (2022, March 31). *Occupational employment and wage statistics*. U.S. Department of Labor. https://www.bls.gov/oes/current/oes291221.htm

Wennerstrom, A., Silver, J., Pollock, M., & Gustat, J. (2020). Action to improve social determinants of health: Outcomes of leadership and advocacy training for community residents. *Health Promotion Practice, 23*(1), 137–146. https://doi.org/10.1177/1524839920956297

Whittemore, R., & Knafl, K. (2005). The integrative review: Updated methodology. *Journal of Advanced Nursing, 52*(5), 546-553. https://doi.org/10.1111/j.1365-2648.2005.03621.x

Wilensky, G. R. (2021, November 30). *Physician payment and SDoH challenges loom large on nation's path to value.* Healthcare Financial Management Association. https://www.hfma.org/topics/hfm/2021/december/physician-payment-and-sdoh-challenges-loom-large-on-nation-s-pat.html

World Health Organization. (2022a). *Social determinants of health*. https://www.who.int/health-topics/social-determinants-of-health#tab=tab_1

World Health Organization. (2022b). *Teams: Social determinants of health*. https://www.who.int/teams/social-determinants-of-health

Wu, Y. P., Herbert, L. J., Walker-Harding, L. R., & Tercyak, K. P. (2019). Introduction to the special issue on child and family health: The role of behavioral medicine in understanding and optimizing child health. *Translational Behavioral Medicine, 9*, 399–403. https://doi.org/10.1093/tbm/ibz056

Yearby, R. (2020). Structural racism and health disparities: Reconfiguring the social determinants of health framework to include the root cause. *Journal of Law, Medicine & Ethics, 48*(3), 518–526. https://doi.org/10.1177/1073110520958876

TABLE 1

Table 2

Inclusion and Exclusion Criteria

Inclusion	Exclusion
Publications from 2017-2022	Publications prior to 2017
Pediatric population less than 18 years of age	Adult patient population 18 years and greater
Peer reviewed, gray literature (newspaper articles, conference papers, guidelines, etc.)	Non-research articles (editorials, fact sheets, etc.)
Articles written in the English language	Articles written in non-English languages
Full-text articles	Abstracts only

Appendix A

Article Critique and Leveling Matrix

Article	Auger, K. A., Kahn, R. S., Simmons, J. M., Huang, B., Shah, A. N., Timmons, K., & Beck, A. F. (2017). Using address information to identify hardships reported by families of children hospitalized with asthma. *Academic Pediatrics, 17*(1), 79–87. https://doi.org/10.1016/j.acap.2016.07.003
Study Purpose	Determine the relationship between neighborhood-level socioeconomic data and family-reported hardship.
Sample Characteristics	The caregivers of 774 children that were in the hospital for asthma.
Method	Cross-sectional data analysis; observational.
Study Results	Neighborhood poverty was related to financial strain; vehicle access was weakly correlated with and predictive of primary care access.
Level of Melnyk	Level 4: Correlational Design
Limitations	Limited to a single center in one region, mostly financially poor participants, only English speaking and reading participants, and differing cut off points were used for income requirement
Would Evidence Support a Practice Change	Yes. Awareness of a child's address may help to identify whether their family is experiencing socioeconomic hardship, and this can be used as a tool by clinicians to help allocate resources.

Article	Brammer, S. V., Regan, S. L., Collins, C. M., & Gillespie, G. L. (2021). Developing innovative virtual reality simulations to increase health care providers' understanding of social determinants of health. *Journal of Continuing Education in the Health Professions, 42*(1), 60–65. https://doi.org/10.1097/ceh.0000000000000400
Study Purpose	To develop two virtual simulations as a way to each healthcare providers to identify and manage SDOH and to decrease unconscious bias and raise awareness by the experience of life through the patients' perspective.
Sample Characteristics	Eight NPs and five MDs.
Method	Qualitative data
Study Results	Participants were satisfied with the virtual reality simulation and found the tool easy to use and promoted empathy for patients.
Level of Melnyk Limitations	Level 6: Descriptive Study An evaluation tool was not piloted for the development process and the convenience sample limited generalizability of the virtual reality simulation (VRS) to Medicaid providers and patients.
Would Evidence Support a Practice Change	Yes. Participants were able to identify relevant SDH after the learning experience and make them better aware and give a better understanding of situations that can significantly impact health such and SDOH.

Article	Coppa, D., & Barcelos Winchester, S. (2020). Content evaluation of social determinants of health and cultural fluency to measure nurse practitioner application in clinical situations. *International Journal of Health Promotion and Education*, *58*(3), 124–136. https://doi.org/10.1080/14635240.2020.1719863
Study Purpose	To evaluate concept mastery, clinical application of SDOH, and cultural fluency in NP students.
Sample Characteristics	99 NP students from FNP and AGNP programs at the University of Rhode Island, College of Nursing.
Method	Prospective, quasi-experimental, pre-post study
Study Results	Final evaluations of students were better in SDOH and cultural fluency.
Level of Melnyk Limitations	Level 3: Controlled Trial None listed
Would Evidence Support a Practice Change	Yes. It is important for the NP student's curriculum to include evaluation education on SDOH and cultural competency to support use of the skills in future clinical situations. The information from this study gives evidence that most providers are not competent in SDOH and cultural concerns.

Article	Ellis, D. A., Cutchin, M. P., Templin, T., Carcone, A., Evans, M., Weissberg-Benchell, J., Buggs-Saxton, C., Boucher-Berry, C., Miller, J. L., Al Wazeer, M., Gharib, J., Mehmood, Y., & Worley, J. (2021). Effects of family and neighborhood risks on glycemic control among young black adolescents with type 1 diabetes: Findings from a multi-center study. *Pediatric Diabetes*, *22*(3), 511–518. https://doi.org/10.1111/pedi.13176
Study Purpose	To investigate the relationship between family conflict, neighborhood adversity, and health outcomes, and to determine if neighborhood adversity plays a role in the relationship between family conflict and glycemic control.
Sample Characteristics	128 young, black, adolescents with type I diabetes from two major US cities.
Method	Cross-sectional study using questionnaires
Study Results	A lack of consistency in neighborhood adversity predicts diabetes related health outcomes in young AA adolescents with type I diabetes
Level of Melnyk Limitations	Level 4: Correlational Design Generalizability, and family conflict was reported by the parent and not the adolescent and their perspectives of conflict may differ.
Would Evidence Support a Practice Change	Yes. This article provides evidence that care providers should perform SDOH screening due to adversities that may impact the ability of the patient to maintain a healthy status thus supporting the need of the provider to be aware of social circumstances.

Article	DeBonis, R. S., Meyer, J. R., & Brodersen, L. D. (2020). An educational initiative to affect poverty and social determinants of health-related knowledge and attitudes in primary care settings. *Journal of Health Care for the Poor and Underserved, 31*(2), 756–766. https://doi.org/10.1353/hpu.2020.0059
Study Purpose	To evaluate the poverty-related knowledge and attitudes of providers and staff after receiving education on poverty and SDOH
Sample Characteristics	55 participants
Method	Descriptive posttest
Study Results	58% of the participants completed the survey- ratings for perceptions of preparedness and knowledge of poverty and SDOH were significantly higher after the education was provided
Level of Melnyk Limitations	Level 3: Controlled Trial Posttest design only. Low response rate. Sampling bias.
Would Evidence Support a Practice Change	Yes. The positive results support an educational initiative to improve the perceptions of providers about poverty and being prepared to treat patients who screen positive for SDOH. Support for better provider awareness is supported by the difference in the testing after the education was given.

Article	Garg, A., Cull, W., Olson, L., Boyd, A., Federico, S. G., Dreyer, B., & Racine, A. D. (2019). Screening and referral for low-income families' social determinants of health by us pediatricians. *Academic Pediatrics*, *19*(8), 875–883. https://doi.org/10.1016/j.acap.2019.05.125
Study Purpose	To determine how often US pediatricians report screening and referring for social needs and identify predictors for screening and referral
Sample Characteristics	732 Pediatricians via AAP Periodic survey for October 2014 to March 2015
Method	Random selection survey
Study Results	Pediatricians are more likely to screen if they had a positive attitude towards the importance of screening, were prepared to screen and help, and had adequate support staff to assist families in need.
Level of Melnyk Limitations	Level 6: Descriptive Design Only AAP members were included in the screening, possibility of limited generalizability due to screening for low income, different interpretation of 'screening' (interview vs. tool), and results cannot determine the impact of the assistance from staff members
Would Evidence Support a Practice Change	Yes. This article found that most Pediatricians had awareness of SDOH and believed SDOH screening is important but did not screen due to attitude or preparedness to treat a positive screen.

Article	Holm, A. L., Rowe Gorosh, M., Brady, M., & White-Perkins, D. (2017). Recognizing privilege and bias: An interactive exercise to expand health care providers' personal awareness. *Academic Medicine, 92*(3), 360–364. https://doi.org/10.1097/acm.0000000000001290
Study Purpose	To raise awareness of personal privilege and improve the understanding of how privilege affects lived experiences of oneself and others.
Sample Characteristics	300 healthcare employees from various professions and background.
Method	Qualitative feedback
Study Results	It was found that the awareness- raising activities/ training showed good potential as a learning experience to understand privilege and affect change to health inequities.
Level of Melnyk Limitations	Level 6: Descriptive Design The exercise was embedded in a workshop, and it was difficult to isolate the effects, results were purely quantitative, the authors' biases and privileges influenced the design of the Privilege and Responsibility Curricular Exercise (PRCE) and the interpretation of its results.
Would Evidence Support a Practice Change	Yes. This study recommends that health care workers need an increased awareness of privilege and bias, once this occurs, they will be better equipped to screen and treat patients' positive for SDOH

Article	Higginbotham, K., Davis Crutcher, T., & Karp, S. M. (2019). Screening for social determinants of health at well-child appointments. *Nursing Clinics of North America*, *54*(1), 141–148. https://doi.org/10.1016/j.cnur.2018.10.009
Study Purpose	Assess and address the needs of young children who are seen in a rural health clinic.
Sample Characteristics	83 children between the ages of one week to five years
Method	QI project using the Model for Improvement—implement a screening for housing and food insecurity.
Study Results	63% of the children were screened, 16.9% positive for food insecurity, 18.8% screened positive for housing insecurity. 85% of the positive families were given a resource guide.
Level of Melnyk Limitations	Level 3: Controlled Trial Number of missed screening opportunities due to human error, and unable to follow up on whether needs were met due to limited length of time in the study
Would Evidence Support a Practice Change	Yes. The project identified a significant number of children with unmet needs, supporting the fact that clinicians must be aware of SDOH to properly treat their patients. Without screening many children and their families are put at high risk for health problems.

Article	Jones, R., Babb, J., Gee, K. M., & Beres, A. L. (2019). An investigation of social determinants of health and outcomes in pediatric nonaccidental trauma. *Pediatric Surgery International, 35*, 869–877. https://doi.org/10.1007/s00383-019-04491-4
Study Purpose	Determine if a patient's socioeconomic status will correlate with their outcomes.
Sample Characteristics	337 patients
Method	Retrospective observational study
Study Results	Uninsured patients were eight times more likely to die in the hospital than those with insurance in nonaccidental traumas (NAT).
Level of Melnyk Limitations	Retrospective Observational Study Retrospective data and inclusion of patients from a single center; unable to follow up; and bias from patients that were transferred to long term care facilities. Also, specifics on injuries were not obtained.
Would Evidence Support a Practice Change	Yes. Insurance status is considered a SDOH and according to this study not having insurance placed a patient at higher risk for death. Insurance status is usually available to providers, they should be aware that these patients are at higher risk for health problems.

Article	Koschmann, K. S., & Hooke, M. C. (2019). Pediatric primary care relationships with African American families: A critical review. *Journal of Pediatric Health Care*, *33*(6), 639–652. https://doi.org/10.1016/j.pedhc.2019.03.004
Study Purpose	Evaluate the importance of the parent-provider relationship for African American patients
Sample Characteristics	277 studies
Method	Data extraction and qualitative synthesis
Study Results	Identification of factors affecting the parent-provider relationship and recommendation for best practice and future research to improve the quality of care given by pediatric providers to African American patients.
Level of Melnyk Limitations	Level 6: Descriptive Design Generalizability due to cross-sectional studies being associated instead of causal. Use of quantitative data to explain relationship between providers and AA parents. No identification of the experiences of the providers, and geographic location and provider role- underrepresentation of pediatric nurse practitioners in the studies used in the review.
Would Evidence Support a Practice Change	Yes. This article recommends that providers develop and enhance skills to increase trust with the patients. In doing so a provider will not only become more aware of the social needs of the patient but will also allow the family to feel safe in disclosing sensitive social information.

Article	Koschmann, K. S., Peden-McAlpine, C. J., Chesney, M., Mason, S. M., & Hooke, M. C. (2021). Urban, low-income, African American parents' experiences and expectations of well-child care. *Journal of Pediatric Nursing*, *60*, 24–30. https://doi.org/10.1016/j.pedn.2021.01.022
Study Purpose	To develop an understanding of African American (AA) parents' experience and expectations when their child is being seen for a well-child visit, and to use this information to improve the quality of care and strengthen the provider relationship with AA parents
Sample Characteristics	35 Caregivers
Method	Qualitative focus group
Study Results	AA parents were more likely to say that their provider does not support their parenting needs and identified parent-provider relationship challenges such as longitudinally, trust, and family-centeredness care.
Level of Melnyk Limitations	Level 4: Correlational Design Results may not apply to all AA parents, parents may have held back information that they thought might be shared with their provider, and unable to compare results to other patient populations.
Would Evidence Support a Practice Change	Yes. This article spotlights the impact that SDOH have on overall health, and it gives support to the provider awareness to assess for SDOH to battle the complex and systemic issues that affect vulnerable populations

Article	Lax, Y., Bathory, E., & Braganza, S. (2021). Pediatric primary care and subspecialist providers' comfort, attitudes and practices screening and referring for social determinants of health. *BMC Health Services Research, 21*(956), 1–7. https://doi.org/10.1186/s12913-021-06975-3
Study Purpose	Determine provider perception and attitudes toward providing care for urban, low-income children, and differences in PCP and specialists assessment and interventions of social and financial needs of low-income children
Sample Characteristics	85 Primary care providers
Method	24 item survey
Study Results	88% were comfortable care for low-income children, 28% were comfortable assessing social and financial needs, and 34% were comfortable referring to resources. PCPs were more comfortable than specialists.
Level of Melnyk Limitations	Level 4: Correlational Design Generalizability, participation bias, shared records of PCPs and specialists may have mitigated the need to address social and economic problems, recall and social desirability bias, research was done in 2016
Would Evidence Support a Practice Change	Yes. Identifies current attitudes of health care providers and spotlights the fact that not all providers have awareness of the importance of social determinants of need.

Article	Murray, P. M., Sepulveda, A., & Baird, J. (2022). Longitudinal impact of a poverty simulation on healthcare practitioners' attitudes towards poverty. *Journal of Pediatric Nursing, 64*, 24–30. https://doi.org/10.1016/j.pedn.2022.01.016
Study Purpose	To evaluate the impact of a simulated poverty experience and how it effects personal characteristics on clinicians' attitude toward poverty
Sample Characteristics	Convenience sample of clinicians
Method	Prospective longitudinal mixed-methods study
Study Results	Attitudes towards poverty (ATP) mean scores were higher post simulation in the categories of stigma and structural perspective
Level of Melnyk Limitations	Level 3: Controlled Trial Participant attrition, bias related to attitudes toward poverty, social-desirability bias, differences in interpretation of ATP statements and scores, and the population may not have represented the full spectrum of practitioners.
Would Evidence Support a Practice Change	Yes. For providers to have enough awareness and screen patients for SDOH that affect health needs the provider must eliminate barriers related to stigma and discrimination that they may have.

Article	McCrae, J. S., Robinson, J. L., Spain, A. K., Byers, K., & Axelrod, J. L. (2021). The mitigating toxic stress study design: Approaches to developmental evaluation of pediatric health care innovations addressing social determinants of health and toxic stress. *BMC Health Services Research, 21*(71), 1–14. https://doi.org/10.1186/s12913-021-06057-4
Study Purpose	Examine two approaches to changes in the pediatric health being made within the US to mitigate conditions related to early childhood exposure to adversity and the absence of protective factors.
Sample Characteristics	Five communities and nine pediatric health clinics.
Method	Multi- component study and developmental evaluation method to describe how changes were experienced.
Study Results	Insufficient evidence that innovations to address social needs and reduced toxic stress will cause improved health.
Level of Melnyk Limitations	Level 4: Correlational Design Generalizability to underserved populations, EHR differences made it difficult to address questions across multiple states, communities and clinic, and the study ended when children were under two years.
Would Evidence Support a Practice Change	Yes. More research is needed to determine if innervations will help improve outcomes, support is needed from health care payers to implement methods to mitigate the impact of toxic stress. The awareness and documentation of providers could offer the proof needed to prove that more research should be done.

Article	Nasol, E., Lindly, O. J., Chavez, A. E., & Zuckerman, K. E. (2019). Unmet need and financial impact disparities for US children with ADHD. *Academic Pediatrics, 19*(3), 315–324. https://doi.org/10.1016/j.acap.2018.09.001
Study Purpose	Assess how measures of socioeconomic status relate with adverse family financial impact of ADHD and disparities in families with children who were not treated for ADHD
Sample Characteristics	Sample of US children between the ages of 8 and 17 years, 2,406 children.
Method	Secondary analysis of a survey
Study Results	44.3% of the children with an ADHD diagnosis experienced an adverse family financial impact for ADHD, and 11.6% had unmet need for ADHD treatment
Level of Melnyk Limitations	Level 4: Correlational Study Limitations include cross-sectional design of NS-DATA, socioeconomic status of the sample did not mirror the US population, and health determinants from the physical and environmental categories were not included in the survey.
Would Evidence Support a Practice Change	Yes. It will be important for the provider to assess for SDOH especially socioeconomic status to determine if a child with ADHD is at higher risk for going without treatment.

Article	Shah, G. H., Yin, J., Young, J. L., & Waterfield, K. (2019). Employee perceptions about public health agencies' desired involvement in impacting health equity and other social determinants of health. *Journal of Public Health Management and Practice, 25*(2), S124–S133. https://doi.org/10.1097/phh.0000000000000908
Study Purpose	To examine the amount of public health employees that desire to impact health equity and SDOH; and the impact of employee characteristics and awareness of health policy and their desirability to impact.
Sample Characteristics	Nationally representative sample of 47, 604 public health employees.
Method	Cross-sectional observational study.
Study Results	It was found that gaps exist in public health workers perceived desirability for their agencies to be active in supporting health equity and combatting SDOH.
Level of Melnyk Limitations	Level 4: Correlational Design Typical self- reporting bias
Would Evidence Support a Practice Change	Yes. This article supports the fact that there are still many people working in public health who do not realize the impact of SDOH and health equity, although this is not specific to pediatric providers.

Article	Srivastav, A., Spencer, M., Strompolis, M., Thrasher, J. F., Crouch, E., Palamaro-Munsell, E., & Davis, R. E. (2020). Exploring practitioner and policymaker perspectives on public health approaches to address adverse childhood experiences (aces) in South Carolina. *Child Abuse & Neglect, 102*, 104391. https://doi.org/10.1016/j.chiabu.2020.104391
Study Purpose	To examine the perspectives of child and family serving professionals (CFSP) and policymakers on protective factors to help formulate policy and program recommendations to address adverse childhood experiences.
Sample Characteristics	23 CFSPs and 24 state policymakers
Method	Semi-structured, in-depth interviews
Study Results	CFSPs and policymakers had differing opinions on how involved the state government should be in primary prevention of ACEs. Three protective factors emerged and the importance of recognition of these factors will protect children and buffer the effects of ACEs.
Level of Melnyk Limitations	Level 6: Descriptive Design Limited to South Carolina, participating policymakers may have had more interest in children's needs than those who chose not to participate, and limited to broad recommendations
Would Evidence Support a Practice Change	Yes. Broad recommendations can guide future research. Awareness of the provider of the three protective factors (SDOH) will help to keep children safe.

Article	Sokol, R. L., Ammer, J., Stein, S. F., Trout, P., Mohammed, L., & Miller, A. L. (2021). Provider perspectives on screening for social determinants of health in pediatric settings: A qualitative study. *Journal of Pediatric Health Care*, *35*(6), 577–586. https://doi.org/10.1016/j.pedhc.2021.08.004
Study Purpose	To evaluate if and how providers integrate the patients' SDOH into practice, and to find out the providers' perspectives about benefits, barriers and unintended consequences of asking about SDOH.
Sample Characteristics	Thirteen providers from ten clinics.
Method	Semi structured interviews
Study Results	Identification of seven themes including structural limitations, implementation concerns, unique role of the Pedi provider for child health and well-being, provider comfort, patient considerations, relational health importance, and unintended consequences.
Level of Melnyk Limitations	Level 4 and 5: Correlational and Descriptive Design Generalizability as providers were selected from a convenience sample, provider characteristics were not considered in the generation themes, and no information on specific SDOH screening process that occurred in the different systems.
Would Evidence Support a Practice Change	Yes. The importance of provide awareness to assess for SDOH if noted, although there are structural issues that identified as significant barriers to assessment.

Article	South, A. M., Palakshappa, D., & Brown, C. L. (2019). Relationship between food insecurity and high blood pressure in a national sample of children and adolescents. *Pediatric Nephrology, 34*, 1583–1590. https://doi.org/10.1007/s00467-019-04253-3
Study Purpose	To determine the correlation between food insecurity and high blood pressure.
Sample Characteristics	7,125 children aged 8-17 years.
Method	Cross-sectional analysis of a NHANES survey
Study Results	20.3% has FI and 12.8% hand high blood pressure, High BP was more common in FI vs. food-secure subject
Level of Melnyk Limitations	Level 4: Correlational Design The cross-sectional study design prevents causal inferences, residual unmeasured confounding, and measurement error; not able to define complex behavioral and inherited factors relevant to HTN; self-reported race.
Would Evidence Support a Practice Change	Yes. Household and child FI increase the likelihood of high blood pressure thus supporting the need for provider awareness of SDOH and assessment.

Article	Swamy, P., Monterrey, A. C., Wood, M. S., Troisi, C. L., & Greeley, C. S. (2020). Caregiver and pediatric health care provider views on social needs identification. *Journal of Primary Care & Community Health, 11*, 1–7. https://doi.org/10.1177/2150132720923085
Study Purpose	Aims to identify the SDOH that are not met within a group of patients, and to understand the perspective of the provider when it comes to screening for SDOH.
Sample Characteristics	110 caregivers, 22 residents, and 21 staff/ faculty.
Method	Cross-sectional survey
Study Results	Caregivers listed healthcare access, childcare, school, and immigration status as SDOH concerns. Residents and faculty/staff also identified healthcare access as a major concern. Staff/faculty and residents determined that SDOH affect a child's health status and screening is essential during the patient encounter.
Level of Melnyk Limitations	Level 6: Descriptive Design Written survey and responses may have been limited by literacy level, drug use and violence as options on caregiver survey only, response rate was not collected for caregivers due to clinic flow issues, social desirability bias, and caregivers reported individual preferences while staff/faculty reported population-based data.
Would Evidence Support a Practice Change	Yes. It was agreed among staff/ faculty and residents that screening in important, this gives support that prior to screening a provider must be aware of the importance of SDOH.

Appendix B

PRISMA Checklist

Removed to comply with copyright

Appendix C

PRISMA 2020 Flow Diagram

Removed to comply with copyright

Appendix D

Melnyk Levels of Evidence

Removed to comply with copyright

Appendix E

CITI Program Certificate

Appendix F

IRB Letter

LIBERTY UNIVERSITY.
INSTITUTIONAL REVIEW BOARD

August 15, 2022

Whitney Dowd
Dana Woody

Re: IRB Application - IRB-FY22-23-70 The Importance of Pediatric Provider Awareness of Social Determinants of Health and the Impact on Health Outcomes: An Integrative Review

Dear Whitney Dowd and Dana Woody,

The Liberty University Institutional Review Board (IRB) has reviewed your application in accordance with the Office for Human Research Protections (OHRP) and Food and Drug Administration (FDA) regulations and finds your study does not classify as human subjects research. This means you may begin your project with the data safeguarding methods mentioned in your IRB application.

Decision: No Human Subjects Research

Explanation: Your study is not considered human subjects research for the following reason: It will not involve the collection of identifiable, private information from or about living individuals (45 CFR 46.102).

Please note that this decision only applies to your current application, and any modifications to your protocol must be reported to the Liberty University IRB for verification of continued non-human subjects research status. You may report these changes by completing a modification submission through your Cayuse IRB account.

If you have any questions about this determination or need assistance in determining whether possible modifications to your protocol would change your application's status, please email us at irb@liberty.edu.

Sincerely,

G. Michele Baker, MA, CIP
Administrative Chair of Institutional Research
Research Ethics Office