ADOLESCENT MENTAL HEALTH IN PRIMARY CARE: A NEEDS ASSESSMENT FOR IMPROVING PRACTICE

by

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ABSTRACT

Background: Youth and young adults have the highest incidence and prevalence of mental health issues, and most do not receive the services they need. Mental health is an essential component of wellness, and primary care providers (PCPs) serve a critical role in promoting mental well-being, identifying problems, facilitating and coordinating services, and managing and monitoring mental health outcomes. Many barriers exist to incorporating mental health into routine primary care for adolescents, and little is known about the specific nature of the obstacles that impede the quality improvement process related to integrating mental and physical health and how to overcome them.

Objectives: The purpose of this DNP project was to gain insight into the PCP role, exploring perceptions, current practices, and barriers related to screening, identifying, and managing adolescent mental health needs, understand the challenges and opportunities, and guide future quality improvement projects that reflect and respond to the needs of adolescents in the local community in effective and sustainable ways.

Methods: The project was designed as a needs assessment, and conducted as an anonymous 20 question survey that was distributed to 13 local PCPs that routinely provide primary care services to the community's adolescent population.

Results: Nine of the surveys were completed and returned. Time constraints and competing demands were dominant concepts, reported as primary barriers to screening, collaboration with mental health professionals, and addressing mental health in general. The participants articulated the need for high-quality professional mental health involvement, improved collaboration, inter-professional development, and inter-agency cooperation to

successfully promote mental health and provide excellent care that improves outcomes. They also displayed an interest in innovative solutions and organizational restructuring to better coordinate mental health services.

Conclusion: This project offered preliminary insight into the challenges faced by PCPs addressing adolescent mental health in primary care, and generated ideas for further exploration to guide quality improvement initiatives designed to support the providers' capacity to incorporate mental health into routine care, and contribute to the community's efforts in promoting mental health for local youth. PCPs occupy esteemed roles in the community, and their perspectives and insight are invaluable.

CHAPTER I: INTRODUCTION

Background Knowledge

Youth mental health has become a critical health issue, both nationally and globally (Kieling et al., 2011; Stengard & Appelqvist-Schmidlechner, 2010). It is estimated that 20% of young people meet diagnostic criteria for a serious mental illness, and many more face mental health challenges that affect their well-being and functionality (Kieling et al., 2011; Murphey, Barry, & Vaughn, 2013; Stengard & Appelqvist-Schmidlechner, 2010; Youth.gov, 2016). Seventy-five percent of mental health problems originate prior to age 25, and more than half have their onset before age 14 (Coughlan et al., 2013; Murphey, Barry, & Vaughn, 2013; Sawyer et al., 2012; Swartz, King, & Rider, 2011; Youth.gov). Youth and young adults have the highest incidence and prevalence of mental health issues, but 70-90% do not receive the services they need (Coughlan et al., 2013; McGorry, Bates, & Birchwood, 2013; Murphey, Barry, & Vaughn, 2013; Murphey, Vaughn, & Barry, 2013; NAMI, 2017; Stengard & Appelqvist-Schmidlechner, 2010; Swartz, King, & Rider, 2011).

These unmet needs only become more difficult to treat with time. They can significantly impede the full developmental potential of youth (social, emotional, physical, cognitive, behavioral) as they transition into adulthood, and predispose individuals to long-standing impairments with wide-reaching consequences that interfere with future well-being and functionality, such as substance abuse, academic and vocational failure, disability, unemployment, social and relational problems, unstable housing, poverty, and incarceration (Coughlan et al., 2013; Erskine et al., 2015; Kieling et al., 2011; NAMI, 2017; Sawyer et al., 2012; Stengard & Appelqvist-Schmidlechner, 2010; Wissow, Genneken, Chandna, & Rahman,

2016). It is estimated that 70% of youth in the juvenile justice system have at least one mental health condition (Schwartz, 2009; NAMI, 2017). Mental health and substance use disorders are responsible for 7.4% of the global disease burden, more than HIV, tuberculosis, and diabetes, and they are a leading cause of disability (Erskine et al., 2015; Whiteford et al., 2013). These consequences can create a substantial burden not only on individuals and families, but whole societies (Coughlan et al., 2013; Insel, 2011; Kieling et al., 2011; National Alliance on Mental Illness, 2017; Sawyer et al., 2012; Wissow et al., 2016).

Mental health issues do not need to undermine the ability to live a healthy, successful, and fulfilling life, however, and can be successfully managed when met with appropriate, dignified, and timely support. Early identification is vital, and mental health must be promoted as a key component of overall health, development, and well-being, and therefore of critical importance in primary care across the lifespan (Kieling et al., 2011; Murphy, Vaughn, & Barry, 2013; Sawyer et al., 2012; Stengard & Appelqvist-Schmidlechner, 2010; Wissow et al., 2016). Many barriers exist, however, when it comes to incorporating mental health promotion into routine primary care including: societal stigma and lack of awareness surrounding mental health, missed opportunities to address mental health concerns, poor coordination of physical and mental health care services, concerns about labeling youth, and issues of availability and accessibility of services that are equitable, acceptable, effective, and involve youth in their care (Ambresin et al., 2013; Coughlan et al., 2013; Kramer & Garralda, 2015; Murphey, Barry, & Vaughn, 2013; Murphey, Vaughn, & Barry, 2013; Tylee et al., 2007). Access to mental health services is very limited in many areas, and this is particularly relevant for youth (Kramer & Garralda, 2015; Wissow et al., 2016). The responsibility is often placed on primary care

providers (PCPs), who may lack the capacity to effectively manage all of the mental health needs of a population in addition to their other obligations due to insufficient amounts of time, training, experience, and resources (Kramer & Garralda, 2015; Wissow et al., 2016).

PCPs are frequently the first point of contact for concerns about youth mental health, and mental health is one of the top reasons for seeking care (Healy et al., 2013). The PCP role is essential in the identification of a mental health problem, the facilitation and coordination of mental health services, and the ongoing management and integration of mental health into wellness care (Kramer & Barralda, 2015; Murphey, Vaughn, & Barry, 2013; Servilli, 2012). PCPs establish enduring, trusting relationships with youth and families, which is essential to promoting optimal physical and mental health and development, and they are in a unique position to understand and manage mental health through their broad access to youth, connections with families, and ability to provide continuity and reduce stigma (Kramer & Garralda, 2015; O'Brien, Harvey, Howse, Reardon, & Creswell, 2016; Servilli, 2012). Although they play an essential role in mental health, PCPs may not always feel prepared or supported in addressing and incorporating mental health into the care they provide, and youth may not always feel comfortable or confident in asking their providers for mental health assistance (Coughlan et al., 2013; Healy et al., 2013; Kramer & Garralda, 2015). On the other hand, PCPs most likely possess insight into the ways in which youth mental health needs could be better addressed, and how they could be fully supported in delivering quality care, particularly in ways that are relevant and responsive to local communities. This project aimed to explore local PCP perceptions and current practices related to identifying and managing adolescent mental health needs in primary care, and identify the obstacles that must be overcome in order to improve their

ability to incorporate mental health into routine care in ways that are patient-centered and youth-friendly.

Local Context

Youth mental health is a significant local and statewide issue. The New Mexico youth risk and resiliency survey (YRRS) is one measure of youth health issues, and is completed by middle and high school students every two years. According to Green, Penaloza, and FitzGerald (2016, 2014) the percentage of middle school youth that reported seriously considering suicide in the 2015 YRRS was 20.7% locally and 20.2% statewide (23.4 % & 20.9% in 2013), and the percentage of high school students was 21.5% locally and 16.5% statewide (14.7% & 15.6% in 2013). The percentages of reported suicide attempts in the 2015 YRRS were 5.5% (local) and 8.8% (state) of middle school students, and 9.1 % (local) and 9.4% (state) of high school students (Green et al. 2016). In 2015, 33.7% (local) and 32.5% (state) of high school youth reported persistent sadness or hopelessness, and 25.3% (local) and 20.5% (state) of them reported self-harm (Green et al., 2016). According to the New Mexico Department of Health (NM-IBIS, 2015), Emergency Room visit rates (per 100,000 population) for intentional self-injury from 2010-2014 were 206.7 locally and 162.7 statewide (all ages), and youth (ages 10-24) suicide rates (per 100,000 population) were 34.1 locally from 2009-2013, compared to 14.9 statewide and 8.1 nationally.

The population of the community is 17,785, and 23.3% of this population is under age 18 (United States Census Bureau, 2015). Racial composition of the county's residents is 89.0% white, 0.7% black or African American, 1.3% American Indian or Alaska Native, and 6.4% Asian; 16.7% of the population identifies as Hispanic (United States Census Bureau, 2015). Only

4.2 % of the population is in poverty, 5.3% are without insurance, and the median annual household income is $105,989 (United States Census Bureau, 2015). The community is demographically very different compared to the rest of the state of New Mexico, which is 41.4% White, 2.0% African American, 8.8% American Indian, 1.5% Asian, and 46.4% Hispanic (NM-IBIS, 2016), and has a median annual household income of $44,963, a poverty rate of 20.6%, and an uninsured rate of 12.8% under age 65 (United States Census Bureau, 2015). The demographics of the community also vary from those of the students attending the local schools, and the 2015 YRRS survey respondents were 72.4-79.7% White, 3.2-3.5% African American, 6.5-9.5% Native American, 5.8-8.2% Asian, 1.9-3.4% Hawaiian or Pacific Islander, and 33.3-34.3% Hispanic (Green, Pendaloza, & FitzGerald, 2016). The ranges represent the variation between middle and high school, and totals over 100% reflect the students' ability to select more than one race (Green et al., 2016).

Recently a mental health design team was established by a local school district to further explore youth mental issues, in order to conduct a mental health needs assessment and develop recommendations for a plan to improve mental health programs for students (Los Alamos Public Schools Mental Health Design Team, 2016). Data were collected through an initial community-wide survey; a secondary, more in-depth student-only survey (grades 7-12); and several focus groups with students and local youth resource advocates and youth activity leaders (Los Alamos Public Schools Mental Health Design Team, 2016). The team also collected data on Emergency Room visits for suicidal ideation and/or attempted suicide, and found that there were 79 visits/18,000 population in 2014, and 122 visit/18,000 population in 2015; approximately 1/3 of these were under age 18 (Los Alamos Public Schools Mental Health Design Team, 2016).

There were reports of high levels of stress at home and school, and concerns about excessive fatigue, hectic schedules, and unrealistic expectations (Los Alamos Public Schools Mental Health Design Team, 2016). There were high reports of anxiety and depression, and the majority of youth reported knowing someone that had been suicidal (Los Alamos Public Schools Mental Health Design Team, 2016). Barriers to seeking help included negative stigma in the community regarding mental health, inadequate availability of quality mental health services that are acceptable to youth, and poor utilization of the available services due to concerns about cost, privacy, confidentiality, and accessibility (Los Alamos Public Schools Mental Health Design Team, 2016). When asked about where they would seek help for mental health concerns, 70.48% reported they would consult their family doctor (Los Alamos Public Schools Mental Health Design Team, 2016).

Purpose and Study Questions

The purpose of this project was to gain insight into the role of PCPs in adolescent mental health by exploring perceptions, current practices, and barriers related to screening, identifying, and managing mental health needs in primary care. A needs assessment was conducted to guide future quality improvement projects and support the current community efforts to promote youth mental health. This study aimed to answer the following questions:

- What are the advantages, disadvantages, and barriers to screening and recognition of mental health concerns for adolescents in the primary care setting as perceived by PCPs?
- What are the system and organizational level obstacles that factor into integrating mental health into adolescent primary care?

- What tools are used by PCPs to screen for adolescent mental health problems and what is the value of these tools?
- How do PCPs proceed once they have identified a mental health concern, and what obstacles have they identified in adequately addressing and managing mental health needs of local adolescents?
- Do PCPs feel comfortable and confident in addressing mental health in their adolescent patients, and how do they perceive their role in adolescent mental health?
- What do PCPs need in order to ensure quality mental health care for their adolescent patients?

Theoretical Framework and Concepts

The theory of planned behavior is an extension of the theory of reasoned action, which argues that the intention to perform a behavior is influenced by beliefs and values toward performing that behavior (Madden, Ellen, & Ajzen, 1992; Millstein, 1996). These beliefs stem from personal attitudes (advantages, disadvantages, perceived benefit) and societal norms (what is acceptable, expected) that shape one's perception that the behavior will result in a particular outcome (Madden, Ellen, & Ajzen, 1992; Millstein, 1996; Perkins et al., 2007). The constructs of personal behavioral attitudes and subjective norms drive intentions, and intentions are generally strong predictors of behavior (Perkins et al., 2007).

The theory of planned behavior went a step beyond the theory of reasoned action to include the construct of perceived control as an additional meaningful influence on behavioral intention and achievement (Madden, Ellen, & Ajzen, 1992; Millstein, 1996; Perkins et al., 2007). It argues that even if the personal and normative beliefs support the positive value of performing

a behavior, the intention to perform that behavior will be subdued if the perception of control is low (Madden et al., 1992; Perkins et al., 2007). If the resources, familiarity, competence, and opportunities to successfully perform a behavior are lacking, the sense of control over one's ability to adequately achieve the optimal outcome is diminished (Madden et al., 1992; Perkins et al., 2007). Higher rates of perceived control and confidence in one's ability to successfully perform a behavior translate into improved rates of intention and increased frequency of the subsequent behavior (Millstein, 1996).

Using the theory of planned behavior as a foundational framework facilitated an understanding of the factors that influence the incorporation of mental health into routine adolescent primary care. The theory assisted in explaining that the value placed on screening, identifying, and addressing the mental health needs of adolescents, as well as the perceived self-efficacy of PCPs will determine the extent that adolescent mental health is incorporated into routine primary care. The theoretical framework also aided in identifying the external obstacles that interfere with PCPs' ability to address mental health in their adolescent patients, even when positive value, self-efficacy, and intention exists (Perkins et al., 2007). Identifying obstacles prior to the initiation of a future quality improvement plan may increase its chances for success.

PCPs are frequently overextended, and simply adding additional tasks without adequate understanding and support for their needs will not suffice, no matter how strong the evidence of effectiveness (Servilli, 2012). PCPs are being expected to manage increasingly complex health needs, including mental health, and the factors that contribute to, and detract from, their ability to meet the demands expected of them must be addressed. If PCPs are to adequately address and engage in a role in meeting the mental health needs of adolescents, the process must hold value,

and their needs must also be met (Perkins et al., 2007). They must perceive that they have the tools, resources, competence, and confidence to overcome barriers and accomplish the task (Perkins et al., 2007).

Definitions

The World Health Organization (2016) defines adolescence as the period after childhood and the onset of puberty to adulthood, and although variations exist in demarcating the specific age group, it can generally be described as the time between age 10 and 19 (World Health Organization, 2016). It is a time of great physical, psychological, cognitive, and social development, and a transitional journey toward physical, emotional, and economic independence. Mental health and mental illness lie on a continuum, and optimal mental health is “a state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community” (World Health Organization, 2014). Mental health needs can include any concerns or problems that impact healthy functioning. Screening and identification of mental health needs is an important component of preventive primary care, and involves recognizing potential problems in order to provide appropriate support and treatment. The management of mental health can be complex, and may include emotional and behavioral support interventions, medications, and coordination with other services to include mental health specialists and community resources.

The definition of primary care created by the Institute of Medicine in 1996 is stated as "the provision of integrated, accessible health care services by clinicians who are accountable for addressing a large majority of personal health care needs, developing a sustained partnership

with patients, and practicing in the context of family and community" (Agency for Healthcare Research and Quality, 2014). PCPs are essential to the overall well-being of populations, and in their role, are responsible for providing and coordinating health care, and supporting optimal outcomes for well-being. PCP perceptions include personal and professional beliefs about health and mental health, their patient populations, and the expectations and obligations of their practice. Current practices and behaviors refer to routine performance in caring for patients, and reflect not only personal and professional beliefs, but organizational factors and circumstances. Perceived benefits and barriers are the beliefs related to the value of roles and practices, and obstacles that hinder optimal role performance and practice expectations.

Synthesis of Evidence

The prevalence of mental health disorders in children and adolescents has increased significantly in the last two decades, and PCPs are usually the first, and often the only providers seen by youth with mental health needs (de la Osa, Ezpeleta, Granero, & Domenech, 2009; Heneghan et al., 2008; Husky, Miller, McGuire, Flynn, & Olfson, 2011; Olfson, Blanco, Wang, Laje, & Correll, 2014; Steele, Lochrie, & Roberts, 2010). As many as half of youth primary care visits are mental health related (Steele et al., 2010; Weitzman & Leventhal, 2006). Less than 2% of children and adolescents receive treatment from mental health professionals, but 97% have a PCP, and 75% visit their PCP regularly (de la Osa et al., 2009; Husky et al., 2011; Jonovich & Alpert-Gillis, 2014; Weitzman & Leventhal, 2006). PCPs recognize and embrace the significance of the mental health of their adolescent patients (detecting and identifying problems, facilitating access to resources, and coordinating treatment), and PCPs have increasingly taken on primary roles in meeting mental health needs (Heneghan et al., 2008; Horwitz et al., 2015;

Jonovich & Alpert-Gillis, 2014; Steele et al., 2010). PCPs consistently report an interest in being involved in improving mental health outcomes for their adolescent patients, but the burden can be substantial (Steele et al., 2010). Despite efforts that have resulted in overall improvements in the recognition of mental health problems in primary care, youth mental health concerns remain largely under-identified, and their needs fundamentally unmet (Brown & Wissow, 2010; Heneghan et al., 2008; Horwitz et al., 2015).

Mental health problems are often difficult to detect, diagnose, and treat, and attending to them in primary care is complicated (Steele et al., 2010). PCP barriers in addressing mental health include insufficient time and resources, inadequate training, experience, and confidence, poor access to mental health specialists competent in adolescent mental health, concerns about labeling youth, and challenges with reimbursement (Heneghan et al., 2008; Horwitz et al, 2015; Steele et al., 2010; Zenlea, Milliren, Mednick, & Rhodes, 2014; Pfefferle, 2007; Weitzman & Leventhal, 2006). Perceived patient and family barriers include lack of awareness and understanding of mental health, resistance to disclosure or diagnosis, and concerns related to negative stigma associated with mental health (Heneghan et al., 2008; Horwitz et al, 2015; Steele et al., 2010; Zenlea et al., 2014; Weitzman & Leventhal, 2006). Despite efforts by the American Academy of Pediatrics (AAP) to increase emphasis on pediatric mental health and improve training in medical schools and through continuing education, these barriers remain, and insufficient time and resources are reported as the greatest obstacles (Horwitz et al., 2015; O'Brien, Harvey, Howse, Reardon, & Creswell, 2016; Steele et al., 2010; Weitzman & Leventhal, 2006; Zenlea et al., 2014). Horowitz et al. (2015) also found that fewer pediatricians are interested in accumulating additional mental health training, and the mandatory behavioral

health residency now incorporated into medical education is probably insufficient to instill and sustain competence and confidence in addressing, identifying, diagnosing, and treating adolescent mental health issues. Providers consistently report low levels of preparedness in managing significant mental health problems in their adolescent patients (Pfefferle, 2007; Weitzman & Leventhal, 2006).

Steele et al. (2010) found that diagnosable disorders had not been detected in primary care in four out of five youth, and reported PCPs were less likely to recognize mental disorders that presented with less severe symptoms. This limits the potential to intervene early and alter the mental health trajectory of youth. A study by Ozer et al. (2009) found that discussions about mood and emotions were only occurring in 30% of visits between PCPs and adolescents, and that 70% of youth with symptoms of emotional distress did not discuss their concerns. It is argued that increasing the frequency of these discussions with adolescents, and capitalizing on every opportunity to promote mental and behavioral health may enhance disclosure of concerns and symptoms (Ozer et al., 2009; Steele et al., 2010; Weitzman & Leventhal, 2006). However, PCPs need more than training and skills to address adolescent mental health. They require organizational and workflow improvement, tools, resources, and professional support networks that enable their ability to adequately meet the mental health needs of their adolescent patients (O'Brien et al., 2016; Ozer et al., 2009; Pfefferle, 2007; Steele et al., 2010).

Mental health screening can facilitate the incorporation of mental health into adolescent primary care, and increase detection of actual and potential mental health concerns (Berger-Jenkins, McCord, Gallagher, & Olfson, 2012; Brown & Wissow, 2010; Gadomski et al., 2015; Jonovich & Alpert-Gillis, 2014; Weitzman & Leventhal, 2006). It can enhance adolescent

awareness and disclosure, and improve the efficiency and depth of communication between patient and PCPs (Berger-Jenkins et al., 2012; Dumont & Olson, 2012; Gadomski et al., 2015). Adolescents report higher rates of satisfaction when mental and behavioral health issues are included in both routine and episodic PCP visits, and screening is an effective and efficient way of prioritizing mental health (Brown & Wissow, 2010; Gadomski et al., 2015). Consistent use of validated, standardized screening, beginning in early adolescence, may be particularly useful in identifying subtle, developing problems, and for special groups whose mental health issues are often under-identified (Dumont & Olson, 2012; Ozer at al., 2009; Steele et al., 2010).

PCPs report low utilization of mental health screening, and have expressed concerns related to its usefulness and effect on quality care, as well as the impact on workflow (Brown & Wissow, 2010; Husky, 2010). Screening is feasible when implemented judiciously, and can enhance efficiency rather than detract from it by providing direction and allowing for further discussion with focused questions (de la Osa et al., 2008; Dumont & Olson, 2012; Gadomski et al., 2015; Jonovich & Alpert-Gillis, 2014; Weitzman & Leventhal, 2006). Haphazard selection and use of screening tools wastes time and energy, and the process of selection and implementation requires careful consideration and comprehensive planning. A vast array of screening tools exist, but the general recommendations are that they be reliable, developmentally and culturally appropriate, and easy to utilize and incorporate into routine use (Bevans, Diamond, & Levy, 2012; Brown & Wissow, 2012; Ozer et al., 2009; Weitzman & Leventhal, 2006). They should be comprehensive enough to cover a wide range of mental health issues, but not so extensive that they are burdensome, and they should be streamlined with the potential to

expand on indicators of emotional distress (Brown & Wissow, 2013; de la Osa et al., 2008; Ozer et al., 2009; Weitzman & Leventhal, 2006).

Screening should never replace patient-provider interaction, but should be used as a tool to initiate discussion and enhance that interaction (Weitzman & Leventhal, 2006). Screening without comprehensive assessment, planning, and follow-through is useless, and systems must be in place to accurately diagnose and effectively treat and manage identified mental health needs (Gadomski et al., 2015; Gardner, 2014; Jonovich & Alpert-Gillis, 2014). Although screening is advocated by multiple professional organizations and guidelines, it cannot stand alone. Barriers similar to the overall obstacles in addressing adolescent mental health also exist in the use of screening tools, including hesitation and poor disclosure, insufficient time and training, inadequate reimbursement, concerns about confidentiality, labeling, and stigma, and a lack of qualified mental health providers to refer patients in need of additional mental health support (Brown & Wissow, 2010; Husky et al., 2010; Zenlea et al., 2014).

Most PCPs desire involvement in managing the needs of their adolescent patients with mental health concerns, but little is understood about what happens after problems are identified (Steele et al., 2010). A study cited by Weitzman and Leventhal (2006) found that only 16% of positive screenings were referred to a mental health professional, and only half of this group actually met with a mental health provider. Of the group that actually connected with a mental health professional only 30% had one visit. An inadequate availability of mental health providers has long been an issue, particularly those who have expertise with adolescents, but both pediatricians and child and adolescent psychiatrists agree that specialist treatment is essential in most cases of significant mental health pathology (Heneghan et al., 2008; Steele et al., 2010;

Weitzman & Leventhal, 2006). Adolescents with mental health problems are under-referred, but this could be largely the result of a limited pool of providers to refer to. PCPs and Child and Adolescent Psychiatrists seem to have accordance on their roles, as well as the systemic problems of limited access (Heneghan et al, 2008). Patient and family resistance or inability to follow through with mental health professionals is also a concern, and can be related to cultural, personal, and economic barriers in addition to the issues of availability, access, and stigma (Heneghan et al., 2008; Jonovich & Alpert-Gillis, 2014).

Summary

Significant gaps have long existed between prevalence, detection, and treatment for adolescent mental health problems. Collaborative arrangements, such as the one between the AAP and the American Academy of Child and Adolescent Psychiatrists (AACAP), must continue to increase efforts to further and fully understand the barriers, gaps, disparities, and limitations involved in meeting adolescent mental health needs in order to support large-scale, innovative improvements (Heneghan et al., 2008; Weitzman & Leventhal, 2006; Zenlea et al., 2014). More research is needed, not just on provider practices, but the systems issues that are preventing the ability to meet adolescent mental health needs and improve outcomes in timely, coordinated, and appropriate ways (Heneghan et al., 2008; Weitzman & Leventhal, 2006). PCPs are enduring a significant share of detecting and managing the mental health needs of their adolescent patients, and they are considered by many to be the ideal persons for that role, but systems have to be in place to support PCPs that are willing to accept the responsibility (Gardner, 2014; Heneghan et al., 20008; Weitzman & Leventhal, 2006). This is especially relevant in rural and resource-poor areas with small primary care practices that lack strong

collaborative networks. Four out of five counties in the United States are designated as mental health service shortage areas, and less than half of rural counties have at least one outpatient facility for treating the mental health needs of youth (Cummings, Wen, & Druss, 2013). Additionally, mental health funding has been continuously cut in many states over the past several years, and inadequacies in access to mental health professionals are not improving (Cummings et al., 2013).

Despite the local area being the only county in New Mexico not considered a Health Professional Shortage Area (HPSA), multiple barriers remain in accessing mental health services, including availability, financial and insurance limitations, and concerns about confidentiality and youth-friendly services (Egan, 2015). Additionally, because the overall rates of poverty and uninsured are low, the community is lacking resources that are easily accessible to all, including federally qualified health centers, school based health centers, and community health/mental health centers (Egan, 2015). Those with lower incomes, those who lack insurance (or have insurance not accepted by local mental health providers) have limited options, and may have to travel out of town for services, which is particularly challenging for busy families (Egan, 2015). Fortunately, there are multi-provider pediatric practices which serve as primary care homes for the majority of local youth, which provides continuity, but most likely also places the burden of mental health issues largely on the PCPs, who may have limited resources compared to larger urban areas. This is common across the state, which is largely rural, and similar parts of the nation, where mental health specialists are often concentrated in larger, more metropolitan areas. Until these disparities are eliminated, PCPs at local, state, and national levels will continue to care for the mental health needs of a large percentage of adolescents, and it is imperative to

understand how to structure systems that support their ability to successfully identify and manage those needs.

While there seems to be ample research on effective screening tools, evidence-based interventions, and the prevalence, disparities, and barriers of families with mental health needs, what is lacking is in-depth inquiry into PCP perceptions of the processes of quality improvement efforts aimed at enhancing their capacity to integrate mental health into adolescent primary care. For example, we know that utilization of evidence-based screening tools is low, but we don't fully understand why. We are aware of the challenges related to limited time, resources, and training, workflow impediments, and financial complications, but we need to understand the specific nature of the obstacles and how to remove them, as well as provider perceptions, practices, and ideas on ways to systematically design effective and sustainable quality improvement that will actively transform our ability to truly integrate health and mental health in our own practices and communities. The American Academy of Pediatrics (AAP) created a task force on mental health in 2004, which has produced abundant information on collaborative practice models, mental health resources, toolkits and education, and competencies, guidelines, and algorithms for integrating mental health into primary care (Foy, Kelleher, & Laraque, 2010). This task force fully acknowledges, however, that we cannot simply expect providers to increase their own competencies without first focusing attention on improving and enhancing systems to be more conducive to the ability to actualize integrated care (Committee on Psychosocial Aspects of Child and Family Health & Task Force on Mental Health, 2009). The process and purpose of quality improvement and innovation has to have value and meaning, and therefore

must be designed with a full understanding of the specific challenges and goals of the local PCPs and population, in order to meet the relevant needs of the community.

CHAPTER II: METHODS

Design

This project was conducted as a needs assessment survey of local PCPs to guide future quality improvement efforts in meeting the mental health needs of adolescents in primary care.

Participants and Setting

The sampling strategy could be considered convenience and purposive, but was actually inclusive and not truly sampling at all, given the small pool of available participants and small size of the community. Although this can introduce bias, and can limit objectivity and generalizability, it is not inappropriate in a needs assessment or initial phase of improvement work (Polit & Beck, 2012; Terry, 2015). Additionally, the providers are probably not significantly heterogeneous, but the goal of this initial needs assessment was to explore their particular perceptions and needs in order to create opportunities for relevant improvement at the local level, not to create broad generalizability. All available providers that provide a substantial amount of primary care to local adolescents were included for interest and consideration in the improvement efforts, and the small pool of participants available is not particularly relevant, considering the size of the population and project purpose (Terry, 2015). Further projects would seek stronger evidence to guide the efforts involved in practice change improvements on a larger scale.

Recruitment of participants sought to include area healthcare providers (physicians, nurse practitioners, and physician assistants) that are currently actively practicing in the provision of primary care services for the local adolescent population. The setting for the project was a small New Mexico community, and the participants that were selected and that ultimately consented to

participate came from two group practices and one single-provider practice, which included eleven pediatricians (six male and five female), one female physician assistant, and one male nurse practitioner. A third group practice was approached, but the PI was unable to secure sufficient interest and permission in time to be included in the project. There are family practice clinics in the community, but these providers either do not accept pediatric patients, or do not see enough adolescents to be considered routine providers of care for this population. This considerably limits the amount of participants, but it would not be relevant to survey the providers who are not consistently seeing a significant portion of the local adolescent population.

Ethical Considerations

Approval was obtained from the University of Arizona College of Nursing Departmental Review and Institutional Review Board prior to beginning the project (Appendix A). Permission was requested in person by the PI, and granted by each of the primary care sites that were invited to participate. This project did not involve working directly with any vulnerable groups (the adolescents themselves), and no sensitive or personal information was requested from personal health records or provider recall. Questioning did not include information about the frequency or prevalence of mental health issues, nor did it involve obtaining any identifying information about the providers or the patient population. It was instead concerned with the PCPs' perceptions of their role in adolescent mental health, their concerns about the overall status and capacity of the local health care system in meeting adolescent mental health needs, and evaluation of their current practices and perceived obstacles in addressing adolescent mental health. Naturally the survey and each of these questions was voluntary. There was potential for response bias,

including social desirability response bias, based on the self-report survey design (Polit & Beck, 2012).

A primary concern was for PCP privacy. Respect for their professional integrity was of utmost importance. Full disclosure was a foundational piece of introducing the project and soliciting participation in an ethical way. The results of the project were not to be identifiable, or call attention to what is not being done, but only to identify ways in which PCPs might be able to improve self-awareness, enhance learning and growth, and identify opportunities for quality improvement. Central components of the informed consent process included:

- Description of the project design, purpose, and goals
- Description of the type of questions to be asked in data collection
- Assurance of anonymity and confidentiality, and commitment to purpose of benefit, not harm
- Voluntary nature of project
- Contact information for project author

The projected benefits included:

- Increase awareness and knowledge
- Improve the ability to communicate and collaborate
- Increase access to resources that PCPs may not be aware of or have access to

The potential risks included:

- Threats to professional autonomy and integrity
- Discomfort in answering questions about professional practice
- Inconvenience (will cost some amount of their time)

This project was designed as a need assessment, and intended to explore current practices and ideas to improve care processes. The intent was to provide benefit to the PCPs, and learn from them, through increasing awareness and sharing resources. The small size of the community and limited number of providers available to participate in this project necessitated careful consideration of privacy, beneficence and non-maleficence. The original plan for this project was to conduct the inquiry as part of a community-wide effort focused on youth mental health, but was restructured after considering these elements related to confidentiality, beneficence, and non-maleficence. The project author has worked with many of these providers, having lived and been employed in the community for nearly nine years, and the hope was that this familiarity and history of professional association would increase their willingness to participate. The author holds sincere respect for these providers as professionals, and carefully developed this project in order to convey that respect, as well as a genuine interest in understanding and identifying ways in which PCPs can be supported in their roles and effort of improving practices in adolescent mental health.

Request for participation was conducted in person by the project investigator (PI), and included a description of the project purpose, timeline, and contact information for the PI. Clear communication was provided at the onset to emphasize and ensure confidentiality, and no personal or identifiable information was required. Assurance was also given that the results of the project would not be used in a way that would jeopardize anonymity through disclosure of any sensitive or identifying information. A cover letter and disclosure statement was provided with each survey at distribution, which reiterated this information and included the contact

information for the PI (Appendix B). The PI was the sole investigator, responsible for ensuring privacy and protection of the data.

Data Collection

A customized survey was developed based on the project author's research and review of the literature and evidence on the topic, guided and refined by the particular questions this project is attempting to address. No existing survey was identified that adequately and comprehensively addresses the project purpose and questions, therefore an original survey was created using information and insight gained from research and professional experience. The survey was externally reviewed by three nurse practitioner experts for clarity of wording, ease and efficiency of use, and face validity, to ensure it would adequately address the constructs and concepts relevant to the project (Polit & Beck, 2012). The data collected focused on the questions of this project which included:

- current processes and practices of adolescent mental health screening and identification of needs, to include screening tools utilized in primary care
- the perceived value of these screening tools and barriers to using them
- perception of overall mental health in local adolescent population, and their role in addressing mental health concerns
- the processes and challenges associated with identification, referral, and management of mental health needs in the local adolescent population
- their perceived comfort in addressing and meeting adolescent mental health needs in the current primary care settings
- barriers and facilitators to incorporating mental health into adolescent primary care

The anonymous, self-administered, structured survey consisted of 20 items, which were predominantly closed-ended, multiple item response questions (Appendix C). Some questions asked respondents to select the best response, and others allowed them to select any and all responses that applied. Closed-ended questions are more amenable to participants and data analysts, but they must be constructed carefully (Polit & Beck, 2012). There were also a limited number of open-ended questions and feedback opportunities to solicit further explanation and insight that may be missed by relying exclusively on the author's closed-ended questions, and were designed to allow for feedback that could potentially enhance the data and improve understanding.

The survey was provided in paper format. Electronic surveys are convenient and may enhance feelings of anonymity, but traditional pen and paper questionnaires may have better response rates, and can eliminate the potential for technologic difficulties. Additionally, paper formatted questionnaires were selected because they could easily be hand-delivered, and included an incentive for participation (gift card). Considering the characteristics and proximity of the PCPs selected, it was argued that paper format would be more acceptable to the local providers, and would result in more convenient follow up and a higher response rate. Follow up at week one coincided with the completion of all surveys that would ultimately end up being completed. The project director's familiarity with the local providers and residence in the community facilitated ease of follow up and collection of the surveys.

Data Analysis

The ordinal level quantitative data from the closed-ended questions were reviewed for completeness, and organized into frequency tables by the PI. Descriptive statistics were used to

examine and demonstrate frequencies and percentages of responses to each of the multiple choice items. Microsoft Excel was utilized to input, analyze, and display the quantitative data. The small amount of qualitative data from the limited open-ended response options were reviewed and transcribed, and were summarized in paragraph form to supplementing the results.

CHAPTER III: RESULTS

Outcomes

Data Collection

The surveys were distributed and collected between March 8, 2017 and March 15, 2017. The PI hand-delivered a sealable envelope to each provider, which contained the survey, disclosure letter, and a $5 Starbucks gift card thanking the providers for their participation. The office manager at each clinic was given a larger sealable envelope, labeled with the PI's name and contact information, to secure the providers' sealed, completed surveys until the PI could collect them.

Sample

Nine of the 13 distributed surveys were completed and collected, providing a response rate of 69%. In an attempt to preserve anonymity in a small sample and small community, demographic data were not collected by the survey to describe the provider population (gender, age, race, ethnicity, length or specific nature of practice). The gender distribution of the providers that were given the survey was 46% female and 54% male, but because this information was not measured by the survey itself, the actual distribution of the group that completed the survey is not known. All but two (a nurse practitioner and a physician assistant) of the providers surveyed were pediatricians, but it is unclear exactly who completed the surveys.

Provider perceptions related to adolescent mental health and their role.

When asked about the overall mental health status and needs of the local adolescent population, the providers reported being very concerned (55.6%) or moderately concerned (44.4%). More than half (55.6%) of PCPs described their role in addressing adolescent mental

health needs as moderately significant, while 22.2% reported their role as highly significant, and another 22.2% reported their role as not very significant (Figure 1). The range of responses for the question that addressed their comfort in discussing, identifying, and managing adolescent mental health needs was 22.2% very comfortable, 44.4% moderately comfortable, 22.2% somewhat uncomfortable, and 11.1% very uncomfortable (Figure 2).

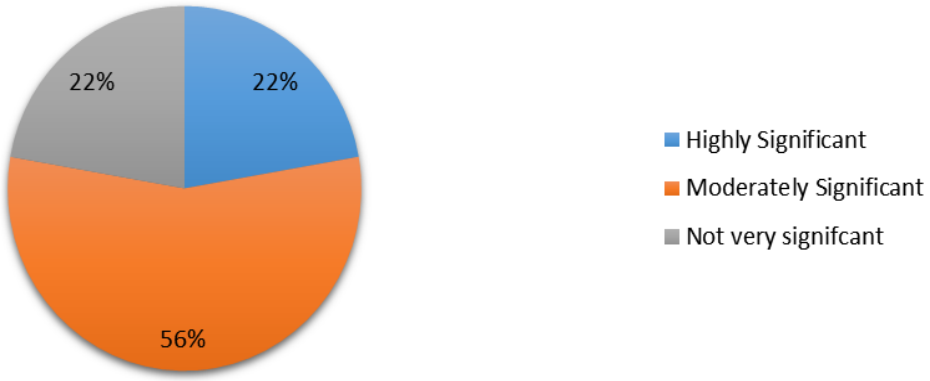

FIGURE 1. Significance of Role in Adolescent Mental Health

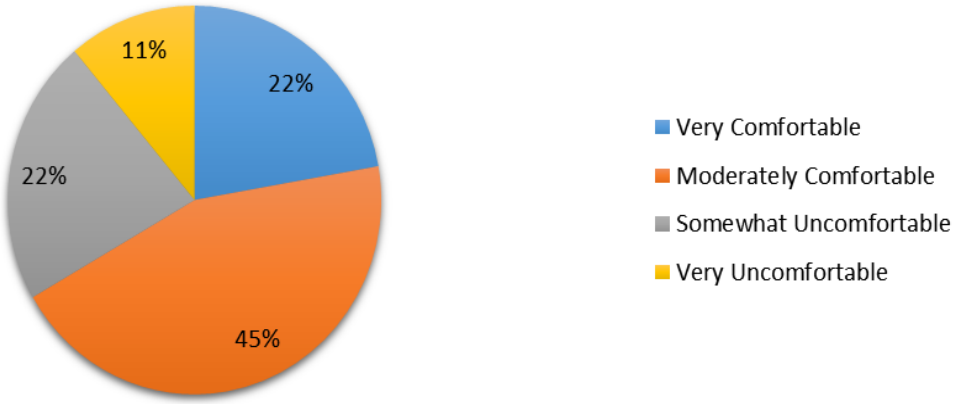

FIGURE 2. Comfort with Adolescent Mental Health Needs

When asked about the education and training related to adolescent mental health issues that they had received during their degree program, 11.1% of PCPs reported none, 44.4% described it as minimal, and 44.4% reported it as a moderate amount (Figure 3). None of the providers reported receiving extensive education on adolescent mental health. When questioned about whether or not more time and emphasis should be allowed for the subject matter in medical and nursing education, 33.3% strongly agreed, 44.4% somewhat agreed, and 22.2% somewhat disagreed (Figure 4). The majority (77.8%) of PCPs surveyed were neutral when asked if there was adequate support (easily accessible resources, tools, and continuing education) available for PCPs to enhance their confidence and competence in addressing adolescent mental health needs. Of the remaining two providers that did not select neutral, one respondent somewhat agreed (11.1%) and the other somewhat disagreed (11.1%).

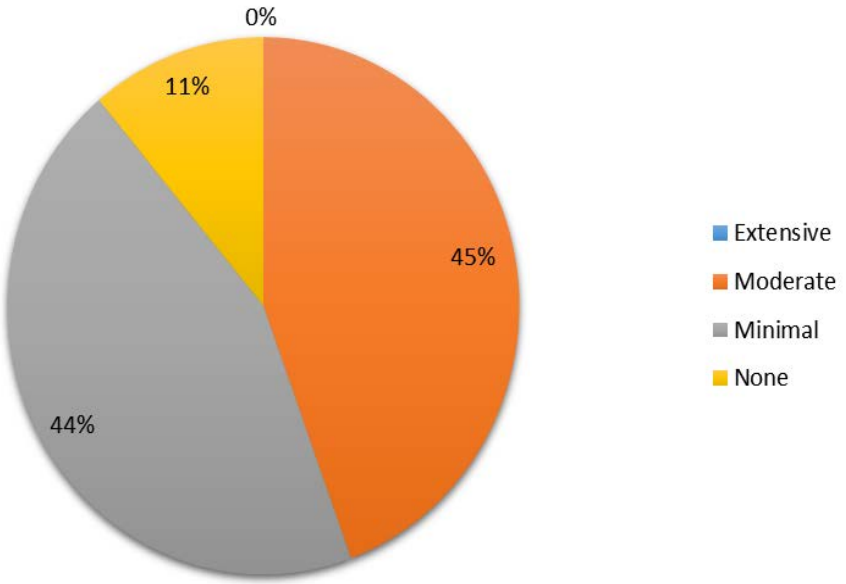

FIGURE 3. Adolescent Mental Health Education and Training

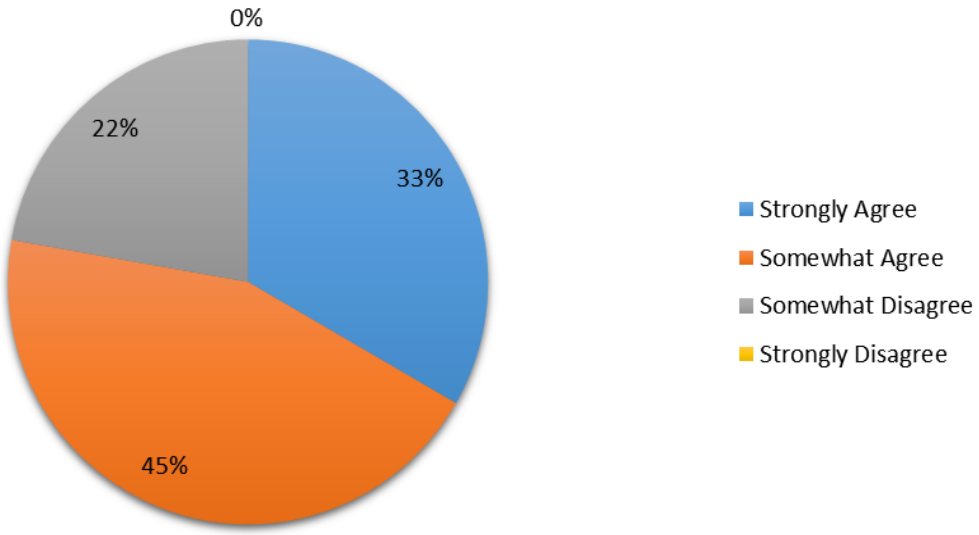

FIGURE 4. Should Emphasis on Adolescent Mental Health Education Be Increased?

Provider perceptions and practices related to adolescent mental health screening.

When asked if they routinely screen for mental health problems in the adolescent population, all but one respondent selected yes (88.9%). The question about when screening occurs allowed the participants to select any and all that apply. All respondents but one (88.9%) selected all of the options available (at well-child/preventive visits, upon disclosure of a mental health concern by the adolescent, upon disclosure of a mental health concern by the parent, and when a mental health concern is suspected. One respondent (11.1%) selected only well-child/preventive visits and other, and commented, “It is difficult to incorporate screening into all well child visits due to time pressures”.

All of the providers (100%) reported that screening is somewhat effective. Approximately two-thirds (66.7%) of PCPs selected both interview and standardized paper/pencil screening forms and tools when asked how they screen for adolescent mental health problems. Two participants (22.2%) reported using non-standardized paper/pencil forms developed by self or colleagues, and no respondents reported using standardized computerized screening tools. One provider (11.1%) selected the option of other, and wrote in "referral." When asked about which standardized screening tools they have used, the providers were able to select any and all from a list, and the responses are depicted in the Table 1. The screening tool selected most frequently by the participants was the Kutcher Adolescent Depression Scale (KADS).

TABLE 1. *Use of Standardized Screening Tools*

Screening Tool	Number of Responses
Patient Health Questionnaires (PHQ)	2
Beck Depression Inventory (BDI)	1
Child Depression Inventory (CDI)	1
(Short) Mood and Feelings Questionnaire (SMFQ)	1
Bright Futures Questionnaires	2
Guidelines for Adolescent Preventive Services (GAPS)	0
Pediatric Symptom Checklists (PSC)	0
Strengths and Difficulties Questionnaire	0
Ages and Stages Questionnaire-Social Emotional (ASQ-SE)	3
Spence Children's Anxiety Scale	0
Kutcher Adolescent Depression Scale (KADS)	7
Center for Epidemiological Studies Depression Scale (CES-D)	0
Columbia Diagnostic Interview Schedule (DISC)	0
Columbia Impairment Scale (CIS) / Columbia Adolescent Wellness Assessment (CAWA)	0
Children's Global Assessment Scale (CGAS)	0
HEADSSS	1
CRAFFT	1
SAD-PERSONS	0
SCARED	0
COMMENTS (Vanderbilt was written in by one participant)	1

The most frequently reported barriers to screening were time constraints and competing demands (Figure 5). Other options that were not selected by any of the participants included: cumbersome, inconsistency in use of tools, difficulty or uncertainty related to scoring and interpreting the tools.

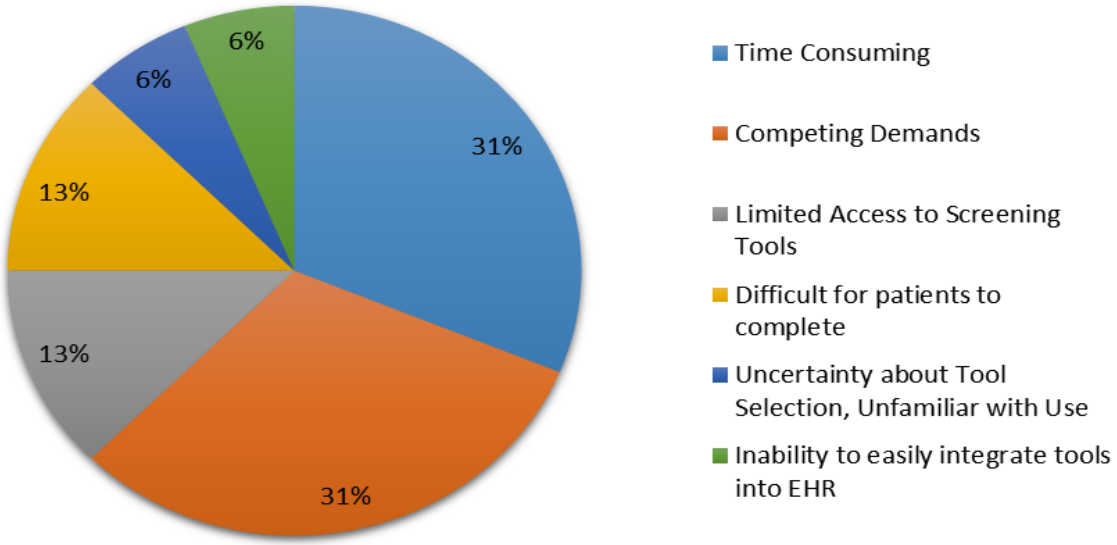

FIGURE 5. Barriers to Screening

Provider perceptions related to adolescent mental health resources.

When asked about usual procedures after identifying a mental health concern, the providers were able to select any and all applicable responses (Figure 6). The most frequently reported practice was to refer directly to a mental health professional. This question also had an open feedback opportunity, which generated the following responses: “monitor but not manage,” and “depends on kind of med.” Two-thirds (66.7%) of participants reported that adolescent

patients follow through with referrals about half of the time, and 33.3% reported the follow through as most of the time.

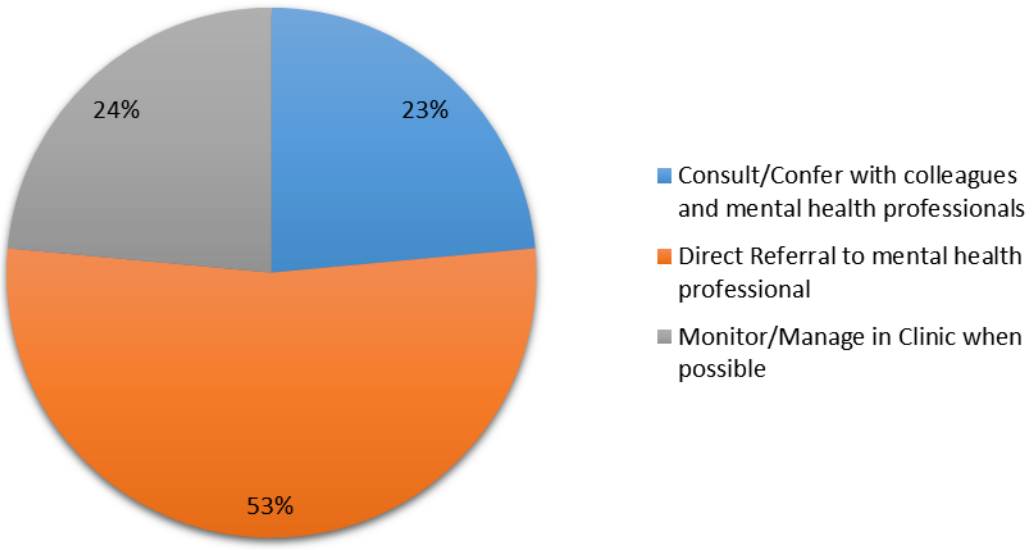

FIGURE 6. Process upon Identifying a Mental Health Concern

Just over half (55.6%) of participants disagreed that the supply and availability of mental health professionals that are trained and comfortable with adolescent mental health issues is adequate in the community, while 22.2% strongly disagreed, and another 22.2% agreed that the supply and availability was adequate (Figure 7). The most frequently reported barrier to consultation and collaboration with mental health professionals was time constraints (reported by 55.6% of participants), and the second most frequently reported barrier was lack of effective and secure communication pathways (reported by 44.4%). Patient and family preferences, as well as lack of inter-professional working relationships/collaborative associations were also listed as barriers but less frequently (33.3% and 11.1% respectively) (Figure 8). This question also had an

open feedback option, which solicited several comments, including: “hard to connect due to busy practices,” “waiting list for pediatric psychiatry,” “local ER uncomfortable with suicidal teens and doesn’t have good peds training for mental health issues,” and “patients not from Los Alamos and patients with Centennial Medicaid Insurance.”

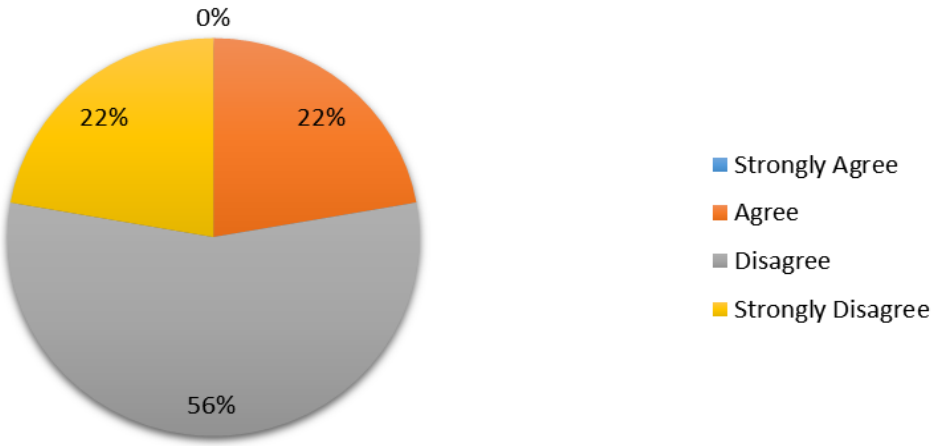

FIGURE 7. Adequacy of Mental Health Professionals

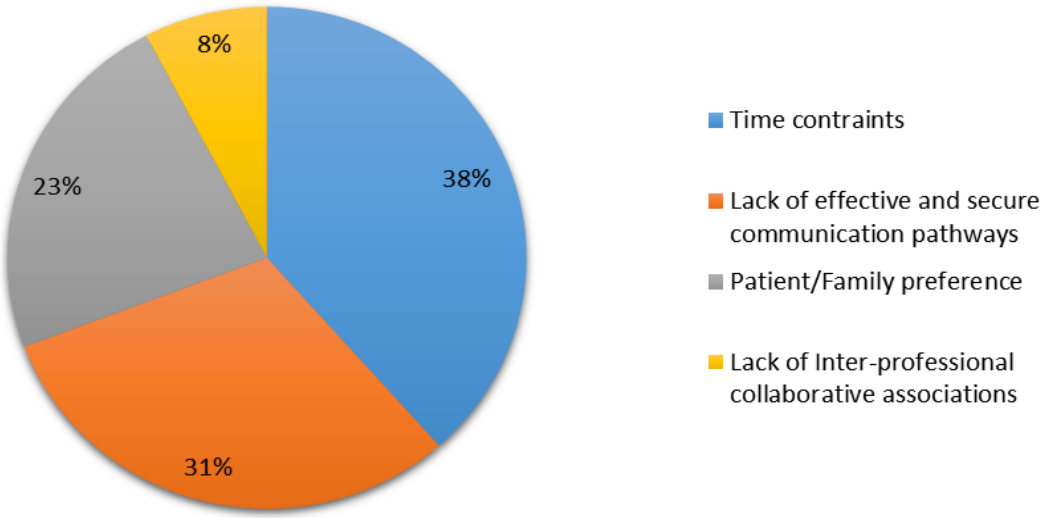

FIGURE 8. Barriers to Consultation and Collaboration with Mental Health Professionals

When asked if informational material to promote mental health awareness and provide education was easily seen and readily available in their clinic for adolescent patients and their families, 66.7% of PCPs said somewhat, 22.2% said not really, and 11.1% said not at all (Figure 9). The providers were also asked how difficult it is to find reliable and acceptable sources of information, education, and support to offer adolescent patients. Just over half (55.6%) responded by saying it is moderately difficult, 11.1% said moderately easy, 22.2% selected very easy, and 11.1% said they were unsure, or had no opinion (Figure 10).

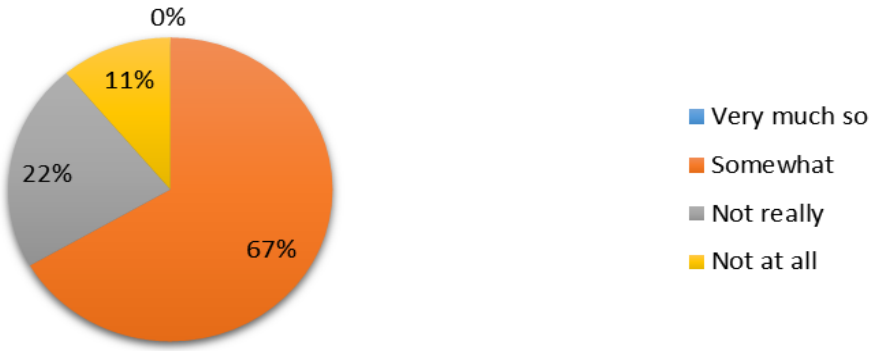

FIGURE 9. Availability of Educational Materials in Practice Setting

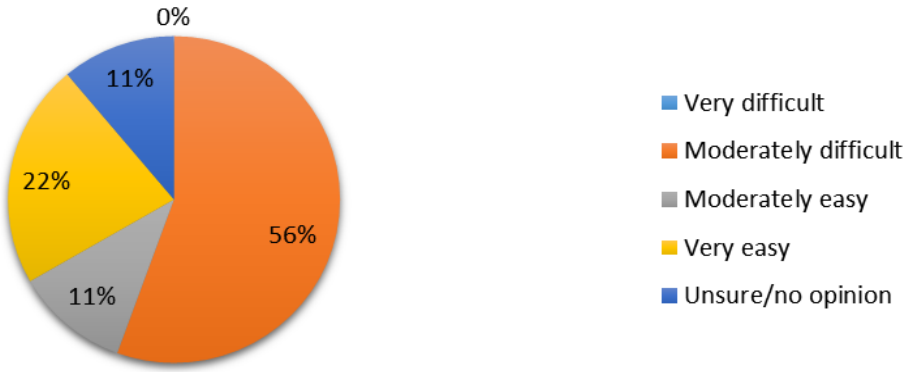

FIGURE 10. Difficulty Finding Reliable Sources of Information and Support for Adolescents

Provider perceptions of barriers to addressing adolescent mental health in primary care.

The most frequently reported barriers to addressing adolescent mental health in primary care were insufficient time, competing demands, and access/availability of mental health professionals (Figure 11). Supplemental free text responses included “many mental health professionals do not accept Medicaid,” and “mental health is an ongoing process…difficult to see in an office setting…meds are special with lots of side effects…we prefer they have psych on board to Rx.” The providers were also asked for their perceptions and needs to overcome these barriers, and the two most frequently selected options were: 1) opportunities for enhanced collaboration with mental health professionals to improve continuity of care and adolescent mental health outcomes; and, 2) improved knowledge of and access to resources to enhance the ability to promote mental health awareness in the community and educate youth and families. Just under half (44.4%) of the providers also selected the following three responses: 1) opportunities for inter-professional development activities; 2) opportunities for inter-agency collaborative efforts to promote adolescent mental health; and, 3) opportunities to improve ability to implement innovative solutions such as tele-mental health, co-location of mental health professional in primary care setting, chronic care models, and multi-disciplinary team practices (Figure 12). This inquiry also involved an invitation for supplemental free text responses, which included: “mental health is a team effort-primary care can identify, which we do, but often treatment is not followed with qualified therapist, psychiatry for med management, and family therapy;” “patients on psychiatric meds should be managed by specialist in that field;” and “too many patients looking for easy fix to complex mental health issues with a pill.”

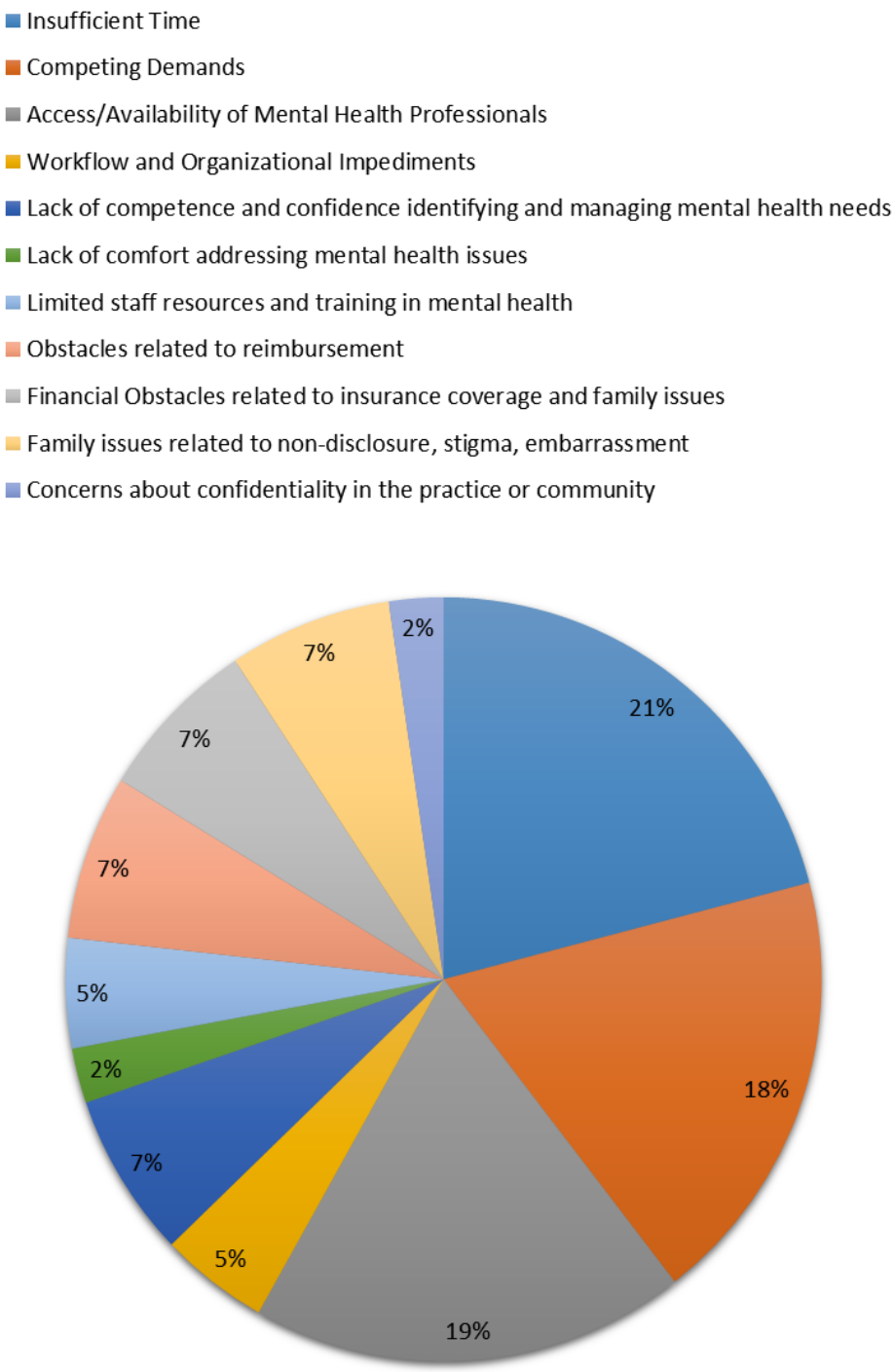

FIGURE 11. Barriers to Addressing Adolescent Mental Health in Primary Care

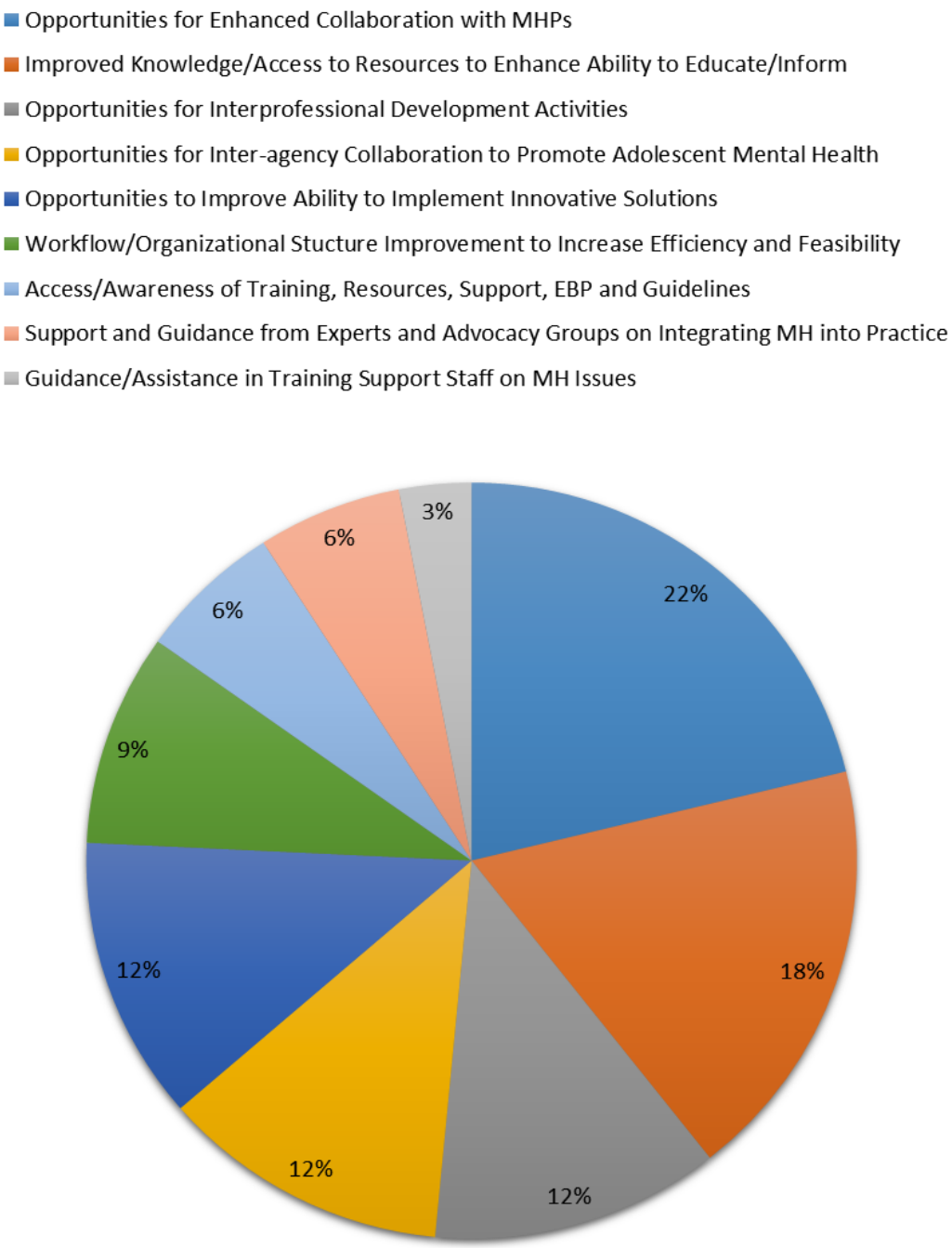

FIGURE 12. Overcoming Barriers to Addressing Adolescent Mental Health

CHAPTER IV: DISCUSSION

Summary of Findings and Relationship to Evidence

All of the PCPs surveyed reported they were either moderately concerned or very concerned about the overall mental health of the local adolescent population, and the majority perceived their role in adolescent mental health to be at least moderately significant. These findings are consistent with the evidence on PCP perceptions of mental health and its impact on overall health and well-being, as well as the interest that PCPs have expressed in having an active role in the mental health issues of their adolescent patients (Heneghan et al., 2008; Horowitz et al., 2015; Jonovich & Alpert-Gillis, 2014; Kramer & Garralda, 2015; Murphy et al., 2013; Servilli, 2012; Steele et al., 2010). The participants in this project also emphasized the importance of having mental health professionals involved in order to best address and meet the mental health needs of adolescent patients and their families. This was particularly notable in the opportunities that were taken by some of the PCPs to provide unstructured commentary, as much of this feedback revolved around the need for mental health specialist involvement and interdisciplinary team approaches to best manage mental health issues in adolescents.

Concerns about the complexity of mental health issues and their treatment were stressed (family issues, uniqueness of psychiatric medications and their side effects, and the need for accurate diagnosis, follow through, and specialty therapies not normally provided in primary care). Supplementary free-text responses from the survey suggested the PCPs wanted to be involved in monitoring their adolescent patients' mental health needs, treatment, outcomes, medications, but not solely responsible for managing the mental health component of their care. This is also congruent with the evidence, which argues that the inherent challenges in detecting,

diagnosing, and treating mental health issues are even more complicated in the primary care setting, which is complex in itself (Steele et al., 2010). PCPs need mental health professionals not only for their expertise and resource potential, but because PCPs and systems are often not adequately prepared or designed to deliver the full spectrum of appropriate treatment for many mental health issues (Committee on Psychosocial Aspects of Child and Family Health & Task Force on Mental Health, 2009; Gardner, 2014; Heneghan et al., 2008; Horowitz et al., 2015; Kramer & Garralda, 2015; O'Brien et al., 2016; Ozer et al., 2009; Pfefferle, 2007; Steele et al., 2010; Weizman & Leventhal, 2006; Wissow et al., 2016).

Although the responses were mixed when PCPs were asked about their comfort, competence, and confidence in addressing adolescent mental health, and the need for more emphasis in nursing and medical programs related to adolescent mental health, the majority responded that they had received either minimal or moderate amounts of education related to adolescent mental health, and that lack of competence and confidence were reported as barriers to addressing mental health. Most of the providers were neutral, however, when asked about the adequacy of support (resources, tools, continuing education) available to PCPs for enhancing their confidence and competence in addressing and meeting adolescent mental health needs. These findings argue the need to consider the evidence that despite efforts by the AAP to promote and increase mental health training in degree programs and continuing education, pediatric providers continue to convey that they are not completely prepared to manage mental health issues, and few pediatric primary care providers seek additional training related to mental health, but report insufficient time and resources as the biggest obstacles (Horwitz et al., 2015;

O'Brien et al., 2016; Pfefferle, 2007; Steele et al., 2010; Weitzman & Leventhal, 2006; Zenlea et al., 2014).

The majority of PCPs either disagreed or strongly disagreed that the supply and availability of mental health professionals for the adolescent population was adequate, and free text responses offered some insight into the problem (waiting lists, mental health providers that do not accept Medicaid patients), but the extent and nature of all of the factors that contribute to their perception that the supply and availability are inadequate was not fully explored in this project. Mental health provider access and availability was one of the top three barriers reported in the question on challenges associated with addressing adolescent mental health in primary care, and this is a persistent challenge frequently mentioned in the literature (Cummings et al., 2013; Kramer & Garralda, 2015; Wissow et al., 2016). It is also notable that inadequacy of quality mental health services that are acceptable to youth was a significant barrier reported by local youth in the research study that was recently conducted in the community, as well as poor utilization of the current services because of cost, accessibility and concerns about privacy (Los Alamos Public Schools Mental Health Design Team, 2016). The PCPs described the frequency of follow through with mental health professionals as either "most of the time" or "about half of the time", but details were not provided and exploratory questions were not asked concerning the factors that contribute positively or negatively to rates of follow through.

All but one of the respondents reported routine mental health screening in their adolescent patients, and all described screening as "somewhat effective." The majority of PCPs reported screening not only at well child/preventive visits, but any time there is a reason for concern on the part of the adolescent, family member, or provider. Most of the providers

reported using a combination of interviewing and standardized screening tools, and none of them reported using computerized screening tools. The Kutcher Adolescent Depression Scale was by far the most widely selected tool, and none of the other options received more than three selections. The data from the other survey questions suggested that access, awareness, and familiarity with screening tools could be improved, and increasing the ability to more easily and efficiently integrate useful, usable, and evidence-based screening tools into the EHR and organizational structure would be beneficial. Time constraints and competing demands were the most frequently reported barriers to screening, and this is persistent in the literature, along with uncertainty about usefulness and impact on care and workflow (Brown & Wissow, 2010; Husky et al., 2010; Zenlea et al., 2014). Utilization of screening tools is reportedly low (Brown & Wissow, 2010; Husky et al., 2010), according to the literature, and these responses could provide some insight into why.

It is recommended that screening tools be comprehensive enough to identify a range of potential problems, but not so exhaustive that they are difficult to complete or integrate into routine care (Brown & Wissow, 2010; de la Osa et al., 2008; Ozer et al., 2009; Weitzman & Leventhal, 2006). Specific questions about the frequency of screening, as well as consistency in use of tools among individuals and providers in a practice were not asked, and there were no responses to the option to provide open feedback on any of the screening tools. According the study by Ozer et al. (2009), discussions about moods and emotions only occur in 30% of visits, and 70% of youth avoid bringing up the subject matter, despite evidence that suggests as many as half of visits are mental health related (Steele et al., 2010; Weitzman & Leventhal, 2006). Screening is argued to promote incorporation of mental health into care, facilitate discussion,

enhance disclosure, and improve communication and efficiency (Berger-Jenkins et al., 2012; Brown & Wissow, 2010; de la Osa et al., 2008; Dumont & Olson, 2012; Gadomski et al., 2015; Jonovich & Alpert-Gillis, 2014; Weitzman & Leventhal, 2006), but screening without the ability or intent to follow through, and without systems in place to accurately and adequately diagnose, treat, and manage mental health problems is impractical and ineffective (Gadomski et al., 2015; Gardner, 2014; Jonovich & Alpert-Gillis, 2014).

Opportunities for enhanced collaboration with mental health professionals was the most frequently selected option when asked about ways to overcome barriers to addressing adolescent mental health needs in practice; but the issue of time constraints and competing demands of busy practices, as well as the lack of effective, secure communication pathways were the most frequently reported barriers to this collaboration. One provider commented that having more mental health professionals within primary care practices would be beneficial, and both opportunities for inter-professional development activities, and opportunities to improve the ability to implement innovative solutions (tele-mental health, co-location of mental health providers, interdisciplinary team practices, chronic care models) were frequently selected options for overcoming barriers to addressing adolescent mental health in primary care. Respondents also frequently selected opportunities for inter-agency collaboration, and improved knowledge and access to resources to enhance their ability to educate and promote mental health in the community, as ways to overcome barriers. One respondent discussed the lack of training and preparedness of other members of the local health care professional community in assisting adolescents with mental health issues, and the ideas of inter-professional development and inter-agency collaboration may be valuable avenues to explore.

More than half of the PCPs reported that it was moderately difficult to find reliable sources of information, education, and support to offer adolescent patients, and endorsed improved awareness and access to training, resources, and guidance from advocacy groups as ways of overcoming barriers. Most of the providers described the amount of readily visible and available material in their clinic to educate adolescents and families on mental health awareness as "somewhat." The PCPs also selected the following means of overcoming obstacles to addressing mental health: 1) improving their ability to address stigma and provide education in patients, families, and the community; 2) improving workflow design and organizational structure; and, 3) enhancing mental health competence in support staff (awareness, sensitivity, confidentiality). Although it wasn't discussed in the question on overcoming obstacles, challenges related to reimbursement, and a mismatch between insurance coverage and the financial policies of local mental health professionals were identified as barriers. These findings resonate with the literature, and suggest the need for further exploration into means of addressing them (Ambresin et al., 2013; Coughlan et al., 2013; Heneghan et al., 2008; Horwitz et al, 2015; Kramer & Garralda, 2015; Murphey, Barry, & Vaughn, 2013; Murphey, Vaughn, & Barry, 2013; Steele et al., 2010; Tylee et al., 2007; Weitzman & Leventhal, 2006; Wissow et al., 2016; Zenlea et al., 2014).

Relationship of Findings to Project Framework and Study Questions

The purpose and aims of this project involved attempting to gain insight into the perceptions and practices of PCPs addressing adolescent mental health in primary care, and identify barriers and needs to inspire opportunities for creating quality improvement efforts that support and enhance PCPs' efforts and capacity for incorporating mental health into routine care

and improving outcomes. Although there is a substantial amount of evidence on what the many barriers are to addressing adolescent mental health in primary care, little is known about PCPs' perceptions of the specific and detailed nature of the obstacles, how to overcome them, the processes of quality improvement, and how to design system improvement projects in ways that truly create meaningful and sustainable change. This needs assessment is only a beginning step of the quality improvement process to enhance PCPs' capacity to improve mental health outcomes for their adolescent population, but it attempted to identify and understand the perceptions of the local provider population, in order to work on creating ideas for improvement that will be relevant and reflective of the needs and values of the community.

The project intended to emphasize the importance of the PCP, not only as trusted health care professionals with sound knowledge and experience in caring for local youth and families, but also as respected members and leaders of the community, that should be supported and strengthened in their ability to positively influence the community's effort to promote positive adolescent mental health. Between two-thirds and three-quarters (70.5%) of the youth surveyed in the recent community project said they would seek help from their family doctor if they had a mental health concern, and this signifies the value placed on these providers (Los Alamos Public Schools Mental Health Design Team, 2016). Their input is essential in identifying opportunities and potential for innovative solutions. The theory of planned behavior was used as a conceptual foundation for this project because it highlights the relevance of perceived control as a critical factor involved in the intention of behaviors necessary to adequately achieve outcomes. Without a sense of control and impact over the situation and one's ability to accomplish the goal of improving adolescent mental health, it is difficult to see how transformation is possible, even if

norms and beliefs support the PCPs' intentions to incorporate mental health into routine care, and even with the appropriate knowledge, skill, and confidence (Madden et al., 1992; Millstein, 1996; Perkins et al., 2007). The PCPs need to be regarded and included as valuable team members with esteemed insight into how the community could improve its youth mental health support system.

Strengths and Limitations

The sample size of 13 was small and purposive, but the response rate was moderately high (69%). This small sample size and lack of heterogeneity are not necessarily limitations because the project design was not intended to create any broad generalizations, but rather serve as an initial needs assessment for a small community of providers and capture data representative of a specific set of providers. The surveys were all complete with no missing data, and even included some supplementary comments and feedback, which enhanced the results and overall understanding of the providers' perspectives. The data offered specific local insight that is relevant to the providers and population of interest, and conveyed insight into opportunities for further exploration to guide future quality improvement. There was the potential for response bias, particularly related to social desirability, but the anonymity provided by refraining from collecting any personal or identifying information may have alleviated some of this risk. The PI's familiarity and professional association with the providers most likely strengthened the response rate, as well as in-person request for participation, introduction to the project, and survey delivery.

In an attempt to alleviate additional burden related to completing the survey, and to increase the likelihood of a strong response rate, many questions that were initially created were

eliminated from the final survey. There were many areas of interest that the PI wanted to explore more deeply, but it was argued that these would be better suited for subsequent inquiries and future projects. For example, no questions were asked about the frequency or types of adolescent visits, and it is unknown how much of the patient population are adolescents. Demographic information about the providers was also omitted for anonymity, so the years of time in practice and length of time in the community is not known. The PI developed the survey for this project, and although it was reviewed for face validity, it was not tested prior to the project.

Implications for Clinical Practice and Further Study

This project provided a starting point for understanding the perspectives and needs of local PCPs addressing adolescent mental health in the primary care setting. The results have stimulated additional questions, and can serve to inform future activities and inquiries geared toward guiding quality improvement initiatives that are sincere, appropriate, and well-constructed. It would be worthwhile to conduct additional surveys, interviews, and focus groups with the providers for further exploration through more refined questioning and brainstorming. Ideas for further inquiry include the following.

- Specific issues related to screening tools:
    - What makes them only somewhat effective?
    - What makes some better than others?
    - What would make a screening tool more easily and efficiently incorporated into routine practice and the electronic health record?
- Specific issues related to the exact nature of the time constraints and competing demands that are reported as resounding obstacles:

    - Is there anything that can be done about this (restructuring appointments and workflow)?
    - Is there a need to invest in additional staff or providers?
    - Can we utilize technology to mitigate any challenges (computerized screening tools via secure portal, communication pathways for inter-professional collaboration, tele-mental health)?
- Specific issues related to mental health professionals in the community:
    - What is nature of the reported inadequacy (quantity, quality, hours and availability, insurance, youth friendly), and what can we do about?
    - Is there a serious desire and indication to explore other options (tele-mental health, co-location, interdisciplinary practice), and what would it take (investment)?
    - What can we do to improve collaboration and brainstorming with the existing mental health professionals?
- Specific issues related to workflow and organizational redesign, resources and guidance for improving the ability to integrate mental health into primary care:
    - Would it be valuable and worthwhile to invest in expert support and additional staff for a quality improvement initiative?
    - What about the resources available from AAP, SAMHSA-what is available?

The AAP is deeply invested in supporting providers and organizations toward enhancing the integration of mental health into primary care and understands the complexity associated with innovations that transform the way we provide care (Foy et al., 2010). Their Committee on

Psychosocial Aspects of Child and Family Health has developed policy statements, recommendations, tools, and resources that can be targeted and adapted for any practice to be used toward the ideal of the integrated mental health medical home (Foy et al., 2010). The chronic care model concept is central to this ideal, and has many variations, depending on the needs, goals, and preparedness of the population and organization (Foy et al., 2010). It involves a considerable amount of collaborative effort, including the above mentioned opportunities and ways of overcoming obstacles.

Because collaboration among professionals and agencies was reported as an opportunity to overcome obstacles, and given that this is supported by evidence, more insight from the PCPs could direct efforts to arrange interdisciplinary and interagency focus groups to build support and forge professional connections. Efforts focused on promoting and improving adolescent mental health are already underway in the community through the school district, and it seems logical and advantageous to build solidarity and strength for the advancement of shared interests and greater benefit. It may not be feasible to solve all of the barriers related to accessing and receiving mental health assistance, but perhaps the community can identify innovative approaches with collaborative, cooperative efforts. Opportunities worth exploring include developing a community task force that involves inter-agency and inter-professional networking for unifying objectives and identifying opportunities and sources of support and guidance, collaborative approaches to promoting mental health awareness and education in the community to reduce stigma, and cooperative fund-raising approaches for investment in inter-professional development and practice improvement initiatives. The results of this project will be summarized and made available to the participating providers, but will not be disseminated further (including

the community taskforce) without the permission of the PCPs, as the study itself was a needs assessment intended for their benefit. If they are interested in conducting further projects, and collaborating activities with other agencies in the future, the dissemination of these results would be at their discretion.

Conclusion

This DNP project offered preliminary insight into the challenges faced by PCPs addressing adolescent mental health in primary care, and generated ideas for further exploration to guide quality improvement initiatives designed to support the providers' capacity to incorporate mental health into routine care, and contribute to the community's efforts in promoting mental health for local youth. It will be important to explore opportunities that not only enhance the capacity of the primary care provider in improving the quality of care, but also identify ways and means of transforming systems that align with the objectives of multiple agencies working toward the same goals and investment in our youth, and seek opportunities for coordination and cooperation. PCPs occupy esteemed roles in the community, not only as trusted professionals, but as community leaders and advocates, and their perspectives and insight are invaluable.

APPENDIX A:

IRB APPROVAL

Human Subjects
Protection Program

1618 E. Helen St.
P.O.Box 245137
Tucson, AZ 85724-5137
Tel: (520) 626-6721
http://rgw.arizona.edu/compliance/home

Date:	March 07, 2017
Principal Investigator:	Sara Elizabeth McEvers
Protocol Number:	1703253776
Protocol Title:	Adolescent Mental Health in Primary Care: A Needs Assessment for Improving Practice
Determination:	Human Subjects Review not Required

The project listed above does not require oversight by the University of Arizona because the project does not meet the definition of 'research' and/or 'human subject'.

- **Not Research as defined by 45 CFR 46.102(d):** As presented, the activities described above do not meet the definition of research as cited in the regulations issued by the U.S. Department of Health and Human Services which state that "research means a systematic investigation, including research development, testing and evaluation, designed to contribute to generalizable knowledge".
- **Not Human Subjects Research as defined by 45 CFR 46.102(f):** As presented, the activities described above do not meet the definition of research involving human subjects as cited in the regulations issued by the U.S. Department of Health and Human Services which state that "human subject means a living individual about whom an investigator (whether professional or student) conducting research obtains data through intervention ***or*** interaction with the individual, or identifiable private information".

Note: Modifications to projects not requiring human subjects review that change the nature of the project should be submitted to the Human Subjects Protection Program (HSPP) for a new determination (e.g. addition of research with children, specimen collection, participant observation, prospective collection of data when the study was previously retrospective in nature, and broadening the scope or nature of the research question). Please contact the HSPP to consult on whether the proposed changes need further review.

The University of Arizona maintains a Federalwide Assurance with the Office for Human Research Protections (FWA #00004218).

APPENDIX B:

DISCLOSURE FORM

Dear Provider,

I am conducting this needs assessment survey for my doctoral project to complete the requirements for graduation with the degree of Doctor of Nursing Practice from the University of Arizona. As a future Family Nurse Practitioner with a long-standing interest in youth mental health, I wanted to develop a project that would not only increase my understanding and ability to incorporate mental health into primary care, but guide further efforts that benefit young people by strengthening and supporting primary care providers' capacity to promote youth mental health, and creating innovative solutions to the problems they encounter in addressing and meeting mental health needs. The objective of this project is to gain insight into the role of PCPs in adolescent mental health by exploring perceptions, current practices, barriers, and potential in screening, identifying, and managing mental health needs in primary care. It is designed to serve as a needs assessment for local PCPs, to increase understanding and inspire ideas that may assist in guiding future quality improvement projects. The intent is not to call attention to what is or isn't being done, but instead to recognize the valued perspective of the primary care provider, who plays a critical role in the care of our youth, and use these perspectives to better understand how to create meaningful improvements.

The survey and its results will be anonymous, only to be used for the duration of this project. It will require no personal, sensitive, or identifying information. I have utmost respect for provider privacy and professional integrity, and will ensure that the confidentiality of the surveys will be maintained by me, and that the information obtained will not be used beyond the purposes of the project to abate any risks to anonymity. The study is voluntary, of course, and will take less than 20 minutes to complete. I truly respect the demanding nature of your practice, and sincerely appreciate your willingness to take time out of your busy day to complete this survey. Your professional experience, expertise, and insight are valuable, and highly regarded, and I thank you for assisting me in not only meeting the requirements to complete my program, but enhancing my knowledge and understanding. Upon completion of the project, a summary of the results will be available upon request, as this needs assessment is intended to benefit the PCPs. The results of this needs assessment project are not intended to create generalizations at any level, but instead simply explore perspectives of some of the PCPs working with local youth that might assist them in developing future needs assessment and quality improvement projects in their practicesc.
Many thanks,

Sara McEvers
505-500-7375
saramcevers@email.arizona.edu

APPENDIX C:

PROVIDER SURVEY

1. How concerned are you about the overall mental health status and needs of the local adolescent population? Please select one.

- o Very concerned
- o Moderately concerned
- o Minimally concerned
- o Unsure, no opinion

2. How significant is your role in addressing adolescent mental health needs? Please select one.

- o Highly significant
- o Moderately significant
- o Not very significant
- o Unsure, no opinion

3. How comfortable are you in discussing, identifying, and managing mental health needs in your adolescent population? Please select one.

- o Very comfortable
- o Moderately comfortable
- o Somewhat uncomfortable
- o Very uncomfortable

4. What are the barriers to addressing mental health that you have identified in yourself or your practice? Please select any/all that apply.

- o Insufficient time
- o Competing demands
- o Workflow and organizational impediments
- o Lack of competence/confidence in identifying and managing mental health needs of adolescents
- o Lack of comfort addressing mental health issues with adolescents
- o Limited staff resources and/or training related to mental health
- o Limited access to, or knowledge of, informational resources
- o Inadequate or cumbersome screening tools
- o Technology problems or inadequacies
- o Obstacles related to reimbursement
- o Financial obstacles related to insurance coverage/economic burden on families
- o Concerns about labeling youth
- o Family issues (non-disclosure, concerns about stigma/embarrassment/privacy)
- o Access/availability of mental health professionals
- o Concerns about confidentiality in the practice and/or community
- o Other, please explain

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5. What do PCPs need to overcome these barriers? Please select any/all that apply.

- o Access to and awareness of available training, resources, and support on adolescent mental health needs, screening tools, and evidence-based treatments and interventions
- o Assistance in improving workflow and organization structure to make the process of incorporating mental health into primary care more efficient and feasible
- o Guidance/assistance training office staff on issues related to mental health (awareness, confidentiality, sensitivity)
- o Opportunities for enhanced collaboration with mental health professionals to improve continuity of care and adolescent mental health outcomes
- o Opportunities for inter-professional development activities to enhance providers' ability to address and meet adolescent mental health needs
- o Opportunities for inter-agency collaborative efforts to promote adolescent mental health
- o Opportunities to improve ability to implement innovative solutions, such as telemental health, co-location of mental health professionals in primary care, chronic care models for youth with mental health, multi-disciplinary team practices.
- o Improved knowledge of and access to resources to enhance the ability to promote mental health awareness in the community, and educate youth and families
- o Support and guidance from advocacy groups on concrete ways to integrate mental health into routine primary care in tangible and feasible ways
- o Other, please explain

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6. Do you routinely screen for mental health problems in your adolescent population? Please select one.

- o Yes
- o No

7. When do you screen adolescents for mental health problems? Please select any/all that apply.

- o Well-child/preventive care visits
- o Upon disclosure of a mental health concern by the adolescent
- o Upon disclosure of a mental health concern by the parent/guardian
- o When a mental health concern is suspected
- o Other, please explain

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8. How do you screen for adolescent mental health problems? Please select any/all that apply.

- o Interview
- o Paper/Pencil form developed by self/colleagues for clinic use
- o Standardized paper/pencil screening forms/tools
- o Standardized computerized screening tools
- o Other, please explain

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9. How effective is screening for mental health problems? Please select one.

- o Very effective
- o Somewhat effective
- o Not very effective
- o Not effective at all
- o Unsure, no opinion

10. What are the barriers to screening? Please select any/all that apply.

- o Time consuming
- o Cumbersome
- o Competing Demands
- o Limited access to screening tools
- o Unsure of which tools to select for use/unfamiliar with options and use
- o Inconsistency in selection/use of screening tools in practice
- o Inability to easily integrate tools into EHR
- o Too difficult to score and interpret
- o Unsure of best process to deliver/score/interpret
- o Difficult for patients to complete
- o Others, please explain

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11. If you use standardized screening tools, which ones have you used? Please select any/all that apply, and feel free to comment on their value and usability.

- o Patient Health Questionnaires (PHQ)
- o Beck Depression Inventory (BDI)
- o Child Depression Inventory (CDII)
- o (Short) Mood and Feelings Questionnaire (SMFQ)
- o Bright Futures Questionnaires
- o Guidelines for Adolescent Preventive Services (GAPS)
- o Pediatric Symptom Checklists (PSC)
- o Strengths and Difficulties Questionnaire
- o Ages and Stages Questionnaire-Social Emotional (ASQ-SE)
- o Spence Children's Anxiety Scale
- o Kutcher Adolescent Depression Scale (KADS)
- o Center for Epidemiological Studies Depression Scale (CES-D)
- o Columbia Diagnostic Interview Schedule (DISC)
- o Columbia Impairment Scale (CIS) / Columbia Adolescent Wellness Assessment (CAWA)
- o Children's Global Assessment Scale (CGAS)
- o HEADSSS
- o CRAFFT
- o SAD-PERSONS
- o SCARED
- o Comments_____

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12. How do you usually proceed once you have identified a general mental health concern? Please select any/all that apply.

- o Consult/confer with local mental health professionals and/or colleagues
- o Refer directly to mental health professional
- o Monitor/manage in clinic when possible
- o Other, please explain

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13. Is there adequate supply and availability of mental health professionals in the community that are trained and comfortable with adolescent mental health issues?

- o Strongly agree
- o Agree
- o Disagree
- o Strongly disagree
- o Unsure/no opinion

14. How often do adolescents follow through with referrals to mental health professionals? Please select one.

- o Almost all of the time
- o Most of the time
- o About half of the time
- o Less than half of the time
- o Rarely

15. What are the barriers to consultation and collaboration with mental health professionals? Please select any/all that apply.

- o Confidentiality policies
- o Lack of inter-professional working relationships/ collaborative associations
- o Patient/family preferences
- o Time constraints
- o Lack of effective and secure communication pathways
- o Others, please explain

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16. Do you have informational material in your practice that is easily seen and readily available that promotes mental health awareness and education? Please select one.

- o Yes, very much so
- o Somewhat
- o Not really
- o Not at all

17. How difficult is it to find reliable and acceptable sources of information, education, and support to offer adolescent patients? Please select one.

- o Very difficulty
- o Moderately difficult
- o Moderately easy
- o Very easy
- o Unsure/no opinion

18. How much education and training did you receive related to adolescent mental health issues during your degree program? Please select one.

- o Extensive
- o Moderate
- o Minimal
- o None

19. Do you think more time and emphasis should be allowed for these issues in medical and nursing education? Please select one.

- o Strongly agree
- o Somewhat agree
- o Somewhat disagree
- o Strongly disagree
- o Unsure/no opinion

20. Is there adequate support (easily accessible resources, tools, and continuing education) available to PCPs for enhancing their confidence and competence in addressing adolescent mental health needs? Please select one.

- o Strongly agree
- o Somewhat agree
- o Neutral
- o Somewhat disagree
- o Strongly disagree

Do you have any additional insight or feedback that you would like to share?

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Thank you!

APPENDIX D:

EVIDENCE APPRAISAL TABLE

Authors and Title	Research Purpose and Framework	Study Design, Sample, and Setting	Data Sources, Measurement, and Analysis	Findings and Recommendations, Limitations
Berger-Jenkins et al. (2012). Effect of routine mental health screening in a low-resource pediatric primary care population.	To evaluate the effect of mental health screening on identification and management of mental health needs in areas with scarce, over-burdened providers.	Implementation of mental health screening as a component of quality improvement project conducted by Columbia University Medical Center on a low-resource pediatric primary care practice associated with Children's Medical Hospital of New York. Practice serves mostly minority youth in Central Harlem and Washington Heights neighborhoods. Providers are both faculty and residents. Study took place over a six month period, one third of patients seen for WCCs were screened with PSC.	Medical records were examined to analyze the effect of newly implemented screening practice on 3 outcomes: identification of mental health issues, management of mental health problems, and changes in referral patterns and burden on mental health specialists. Multivariate logistic regression used to examine/identify associations between screening and identification, management, and referral practices.	Findings demonstrated and increased frequency of parental disclosure, provider workup for mental health concerns, but referrals to mental health specialists actually decreased. The argument was that screening may help to facilitate disclosure and increase provider attention to mental health concerns, but did not place unnecessary burden on mental health professionals. Limitations: small sample, historical controls used, no random assignment, short study with no long-term follow through on outcomes. Recommendations: Further studies to examine the long-term effects of screening on mental health treatment and outcomes, particularly in low-resource settings
Bevans et al. (2012). Screening for adolescents' internalizing symptoms in primary care: Item response theory analysis of the behavior health screen depression, anxiety, and suicidal risk	Hypothesized that multi-dimensional behavioral screening tools are more comprehensive, efficient, useful. Item Response Theory (IRT)	Further evaluation and validation of tool development for symptom measurement. 415 adolescents aged 12-21recruited from primary care offices in Philadelphia area.	55 core items address anxiety, depression, and suicidal ideation, 41additional and further- probing items. Descriptive statistics and psychometric analysis,	Tools that universally screen for multi-dimensional and co-occurring MH issues are feasible, and more practical and useful for clinicians

scales.		66.5% female, 77.5% African American, 10.7% Caucasian, 9.7% Hispanic.		
Brown & Wissow (2010) Screening to identify mental health problems in pediatric primary care: Considerations for practice	Hypothesized that screening would improve identification of mental health issues in pediatric PCPs.	Descriptive study using data from larger study evaluating a mental health communication training intervention for PCPs. 53 PCPs (44 MDs, 9 NPs) and 767 parent-child dyads under age 18. Rural and urban primary care practice sites in upstate NY, Baltimore, MD, and Washington, DC.	Data extrapolated from larger study compared mental health screening results from Strengths and Difficulties Questionnaire (SDQ) with percentages of mental health problems identified by PCPs.	Screening is argued to significantly increase identification of mental health problems, particularly for minorities and moderate mental health issues (argued that it would double identification of moderate mental health problems, facilitating early intervention). Providers identified 55.1% of patients whose SDQ scores demonstrated moderate mental health problems, and 77.7% of those who scored highly for mental health problems. PCPs identified problems in 76.8% of patients who had mental health problems associated with functional impairment. PCPs were participating in training program, so may have been more attentive to mental health issues
De la Osa et al. (2008). Brief mental health screening questionnaire for children and adolescents in primary care settings.	Evaluate validity of brief screening tool in detecting mental health problems in high risk group youth with the goal of identifying tools that can be most effectively and efficiently utilized by PCPs. The nature of the study was also intended to identify critical ages for screening.	Longitudinal study (3 years) of two cohorts. 151 children in a densely populated industrial city in Spain that is predominantly of low socioeconomic status with many social problems and disparities. Recruitment and conduction of the study was performed through a	Data were collected annually, beginning at age 9. Results from the screening questionnaire were compared against data collected through semi-structured interviews used to evaluated psychological functioning. These interviews were conducted by psychology specialists using DSM-IV diagnostic criteria, Children Global Assessment Scale (CGAS), and Child	Brief, well-designed questionnaires are useful in identifying mental health problems, but screening must be coupled with the ability to effectively support an identified mental health concern. Developing tools that help PCPs routinely incorporate mental health into primary care is important, and must be done in a way that does not create provider resistance or

		primary care facility.	Behavior Checklist.	impedance of workflow. Small changes in routine may more effectively accomplish the goal of increasing focus on mental health needs.
Dumont & Olson (2012) Primary care, depression, and anxiety: Exploring somatic and emotional predictors of mental health status in adolescents.	Purpose was to describe associations between physical and emotional complaints, protective and risk factors in adolescents that screen positive for anxiety or depression; evaluate practicality of electronic screening tool used in primary care prior to preventive health visits.	Cross-sectional study of adolescents 11-21 (n=2535) receiving preventive care from 13 pediatric and family medicine practices in Vermont and New Hampshire.	Data collected from an electronic questionnaire, "Healthy Teens Screener", that contains 60-90 questions covering symptoms of anxiety and depression, protective factors, and substance use. Data analyzed for comparisons and associations between symptoms/positive anxiety/depression screening, somatic symptoms, family and social support.	Symptoms of anxiety and depression can coexist, somatic complaints are often associated with presence of anxiety and depression symptoms, and support factors can influence their impact on adolescent health. Utilizing tools before visits can facilitate enhanced communication on patient and provider ends, and increase time available to discuss concerns.
Gadomski et al. (2015)	The purpose was to evaluate an adolescent pre-visit screening tool and its impact on patient provider interaction during annual well-child visits.	Quasi-experimental study. Two study groups examined differences in visits with and without integration of screening tool (providers served as their own control group, 37 usual care visits followed by 35 visits using pre-visit tool). 7 pediatric PCPs (all MDs) from 2 pediatric primary care practices (1 rural, 1 urban) in Baltimore, MD and upstate NY. 72 adolescents, ages 15-19, being seen for routine annual well-child visits.	DartScreen: tablet-based screening tool with 60-65 core questions covering 9 domains (nutrition, exercise, school, safety, reproductive health, drugs, alcohol, tobacco, and psychosocial). Additional mental health screening tools incorporated into DartScreen (PHQ, GAD and Suicide Behavior Questionnaire). Positive questions on alcohol use and mental health resulted in further questioning. Visit interactions were audiotaped, coded with Roter Interaction Analysis System (RIAS). Dialogue and discussion compared between groups.	Use of screening tool correlated with increased information provided by adolescents, improved provider responsiveness and engagement, enhanced discussion of mental health topics. Provider interviews suggested use of screening tool improved efficiency and organization in visits, enhanced incorporation of mental health into visit but not at expense of other health needs. More research is needed to replicate findings of this study, and to enhance provider capacity beyond screening in improving mental health outcomes.

			PCP interviews upon completion, audio-recorded, transcribed, inductive thematic analysis	
Heneghan et al. (2008) Pediatricians' role in providing mental health care for children and adolescents: Do pediatricians and child and adolescent psychiatrists agree?	The purpose of this study was to examine and compare primary care pediatricians (PCPs) and child and adolescent psychiatrists (CAPs) opinions on role of PCP and barriers in identifying, referring, and treating mental health disorders in children	Exploratory study conducted through mailed survey. Final sample included 132 PCPs and 31 CAPs in Ohio.	Survey was created by study authors and included demographic, practice, patient characteristics as well as Likert scale responses for questions related to PCP responsibilities and barriers (organizational issues, training, patient issues, availability of mental health services). Data analyzed using multivariable logistic regression models, weighted linear regression analyses, Rao-Scott.	PCPs and CAPs differed in their beliefs on identification of children with anxiety and depression, but agreed on importance of mental health referral for these youth (may have been limitations due to unclear differentiation between identification and diagnosis). PCPs and CAPs varied in their perceptions of barriers, but agreed on the disparity of inadequate access to mental health services. Both PCPs and CAPs agreed that ADHD is primarily in the realm of the PCP. Recommendations are that further research and collaboration is essential to put effective, comprehensive systems in place to ensure needs are met in timely, appropriate, coordinated ways.
Horwitz et al. (2015) Barriers to the identification and management of psychosocial problems: Changes from 2004 to 2013	Purpose was to examine impact of increased AAP attention to mental health problems on perceived barriers in caring for children with mental health needs	Randomly selected practicing AAP members were nationally surveyed in 2004 (n=832) and 2013 (n=594)	Questionnaire developed by AAP. Survey questions included demographics and practice information, training in mental health, interest in further training/education, local availability of mental health specialists, and 7 barriers in identifying, managing, and referring mental health issues. Weighted descriptive and logistic regression analyses	Barriers included lack of confidence and training in identifying, diagnosing, and treating mental health issues as well as barriers associated with inadequate time and reimbursement. Less barriers were reported in 2013 compared to 2004, but time, training, and confidence still strongly significant. Limitations include low survey response rates, potential bias (those

				interested in issue more likely to respond), barriers potentially under-reported
Husky et al. (2010). Mental health screening of adolescents in pediatric practice	The study examined routine mental health screening scores and compared them against medical records to identify associations between screening and mental health interventions and/or referrals.	Designed to explore associations between screening results, documented mental health conditions and medications, disposition of patients receiving or referred for mental health treatment. Computer mental health screening protocol already in place in a pediatric health center in a Wisconsin suburb. 483 records were reviewed for adolescent groups ages 13-17. 216 were screened with the tool, 267 were not.	Study compared rates of screening acceptance and positive screening rates, used adjusted odds ratios and confidence intervals using logistic regression to examine acceptability of screening, frequency of mental health problems, risk identification via screening, treatment and referral to mental health specialist. Screening tool (TeenScreen) utilizes Diagnostic Predictive Scales-8 to identify wide range of mental health difficulties in adolescents ages 9-18 (suicidal ideation/attempts, anxiety and panic, social phobia, depression, substance use). Scores symptoms and impairment.	Patients with positive screening results were significantly more likely to receive mental health specialty referral, but follow through (receipt of the specialist services) was not included in this study.
Jonovich & Alpert-Gillis (2014). Impact of pediatric mental health screening on clinical discussion and referral for services.	This study was conducted to examine the effect of mental health screening in pediatric primary care on identification, management, referral, and discussion of mental health needs and concerns. Hypothesized that screening would increase likelihood of referral and involvement in mental health services, as	Post-intervention study on group of 11 year olds completing screening (n=146) with comparison group of 12 year olds not receiving screening (n=146). Screening period of 2 years from large pediatric practice within University of Rochester Medical Center, Rochester, NY.	Chart review compared groups: demographics, discussion of mental health concerns, mental health referrals/attendance, prescription of medications, and follow up with PCP. Frequency analysis of demographic characteristics, x^2 or Fisher's exact to compare outcome variables, logistic regression to evaluate screening impact on outcomes. Pediatric Symptoms Checklist, both youth and parent	Completion of the mental health screening was associated with increased likelihood of referral and attendance of mental health specialty services. Screening also correlated with increased discussion of mental health concerns, and addition of parent version of screening is believed to further complement the positive potential of screening.

	well as enhance immediate and long-range communication of mental health concerns.		versions, were used as they had been implemented as part of a QI project.	Well conducted study within a university setting with strong resources, may not be easily generalized to areas with limited access and resources.
O'Brien et al. (2016). Barriers to managing child and adolescent mental health problems: A systematic review of primary care practitioners' perceptions.	Purpose was to synthesize data from studies on PCP perceptions to better understand the barriers they encounter in managing child and adolescent mental health needs.	Systematic review of qualitative (n=13) and quantitative (n=30) studies conducted in US (n=22), UK (n=9), Canada (n=4), Australia (n=4), Ireland (n=2), South Africa (n=2), Malta (n=1), and Puerto Rico (n=1)	Did not exclude studies based on quality, but rather rated them as high, medium, and, low quality. Data were extracted, categorized, analyzed, and synthesized based on barriers and facilitators in four categories: recognition and diagnosis, management and treatment, specialist referral, and undifferentiated group.	Most highly endorsed barrier in all categories was lack of providers and resources, other dominant barriers included: confidence, time, knowledge reimbursement, lack of adequate insurance coverage, long wait times, patient/family issues and barriers. Limitations: wide variability in study designs and quality, required significant interpretation, all data from studies was self-report. Recommendations: further research needed on specific challenges related to barriers and obstructions in processes, better measurement of barriers. Mixed methods research recommended to allow for quantitative measurement/analysis as well as deeper exploration into perceptions and experiences/meaning
Ozer et al. (2009). Are adolescent being screened for emotional distress in primary care?	Purpose was to evaluate rates of provider screening for adolescent emotional distress symptoms.	The study used data from two large datasets along with telephone surveys. First sample included data from adolescent patient surveys (ages 13-17, n=1089) as part of a larger	Measures included provider screening rates (frequency that providers discussed mood and emotional well-being in recent visits) and measure of depressive symptoms which is a component of the statewide survey.	Frequency rates of provider discussion of mood and emotional distress were very similar among datasets (~1/3 of visits included discussion). Rates of emotional distress and depressive symptoms averaged 26.7%, which is very close

		intervention study within a managed care organization in California (86 providers) upon leaving well-child exams. Second sample used data from portions of a routine statewide survey of adolescents ages 12-17 (n=899), California.	Weighted logistic regression analysis for association between prevalence of screening, variation in screening when factoring in positive symptoms of depression.	to state and national averages. Only 30% of this group reported discussions related to emotional symptoms with their provider. Wording of questions, recollection of visit, self-report may limit generalizability, but data seem representative when compared to larger population-level studies. More research on finding ways to improve frequency of routine incorporation of mental health into adolescent visits is needed (even brief standardized assessments).
Pfefferle (2007). Pediatrican perspectives on children's access to mental health services: Consequences and potential solutions.	Purpose was to study the perspectives of pediatricians on factors that help/hinder mental health, screening, access, and care coordination for children.	Qualitative descriptive study of 190 pediatricians from 6 states. States were selected based on mental health services and education initiatives.	Survey elicited information on organizational practice characteristics, mental health screening and care coordination practices and barriers. Qualitative data analyzed using ATLAS and Proc surveylogistic. Descriptive statistics used for demographic data. Likert scale analyzed with SAS.	Thematic Analysis yielded four primary categories of factors that impact access to mental health services: poor access to and availability of mental health specialists, insurance obstacles and mismatch between coverage and acceptance by MH providers, state mental health systems-policies, pediatricians' efforts (treating children themselves, hiring MH providers. Providers also disclosed efforts and intentions to advance their knowledge, skills, and abilities, use telemedicine, use integrated/co-located models of care. Limitations: findings are qualitative, and not generalizable. Purposive sampling was intentional based on state-specific factors, but did include

				6 different states. Voluntary and pediatrician-only participation narrows perspective. Recommendations: Increase/improve pediatric residency training and collaborative learning/consult opportunities, resolve reimbursement issues and insurance disparities, improve opportunities for telemedicine, increase web-based resources for evidence-based information/guidelines.
Steele et al. (2010). Physician identification and management of psychosocial problems in primary care	Purpose was to examine patterns of practice in identifying, referring, and managing mental, behavioral, and developmental issues (mild versus more severe) in pediatric patients as well as attitudes and beliefs related to mental health in their pediatric populations	Questionnaire randomly distributed, completed by pediatricians and family practice physicians across the country. 116 participants completed the survey. preparation in managing mental health, their role in mental health, and their thoughts on available treatments.	Descriptive statistics, chi-square analyses, ANOVA to determine differences in evaluating vignettes, severity ratings, patterns of projected management of cases. Questionnaire contained vignettes (adapted from DSM-IV cases) to evaluate how providers would consider and manage the cases in their primary care settings. Additional questions to evaluate beliefs on effectiveness of their educational Physician Belief Scale was used to measure attitudes and barriers.	Providers were less likely to identify mental health problems that were less severe in presentation. Overall providers responded favorably toward mental health, and desired to have active roles in managing needs of their patients, even when referral was indicated, but verbalized barriers in practice that included inadequate time and training, concerns about stigma associated with labeling patients with mental health problems, organizational systems incongruent with complex needs of patients with mental health needs. Less than half of providers reported using screening tools in their practices.
Webb et al., (2016). Does screening for and intervening with multiple health	Purpose was to examine effectiveness of mental health screening and interventions provided in	Systematic literature review of nine published studies examining various screening and intervention	Predominantly narrative description due to wide variability in study design and outcome measurements, but all	Many limitations that reduce ability to compare results, generalize findings: small sample sizes, self-selection, insufficient follow

compromising behaviours and mental health disorders amongst young people attending primary care improve health outcomes?	primary care on health outcomes for youth under age 25.	tools/methods geared multiple mental and behavioral health issues relevant to youth: 2 RCTs, 1 pilot RCT, 2 clustered RCTs, 1 randomised study with multiple interventions and no control, 1 cluster RCT with two study arms, 1 longitudinal study, 1 pre-post study. Most studies conducted in pediatric primary care settings, others in general private practice, university affiliated primary care, hospital affiliated HIV primary care clinics US (n=7), UK (n=1), Australia (n=1)	studies examined different combinations of general mental health indicators and health-compromising behaviors. All studies reported some improvements in varying amounts and measures of health, mental health, behavioral health outcomes, just in different combinations. Some areas of notable positive outcomes were: substance use, sexual behaviors, stress and coping, safety, general health habits (diet, sleep, exercise)	through, sizeable attrition, wide variety of screening tools, interventions, and varying combinations of outcomes makes it difficult to identify exactly what was effective. Overall this review made it very difficult to analyze and synthesize data, but provided reasonably good insight into studies that are being conducted on a wide-range of comprehensive youth mental health issues. Recommendations include further research and improved ways of measuring and compiling/analyzing data that covers a wide range of outcome measurements over more extensive periods of time.
Zenlea et al. (2014). Depression screening in adolescents in the united states: A national study of ambulatory office-based practice.	Purpose was to examine frequency of screening for depression in adolescents seen in outpatient pediatric and general primary care settings, and factors that may be involved in order to inform recommendations to promote screening. Authors hypothesized that providers would be more likely to screen during wellness exams.	Cross sectional study using national level data from National Ambulatory Medical Care and National Hospital Ambulatory Medical Care Surveys conducted between 2005 and 2010. These surveys use multistage clustered probability sampling to study office practices across the country . Data were limited to office visits to pediatric and general family medicine for adolescents aged 12-18	Descriptive statistics, chi square, and multivariable logistic regression models were used to analyze data from 46,347 office visits. Frequency of depression screening was 0.2%. Screening was 9.1 times more likely to occur in the northeastern U.S than in the west, and 6.1 times more likely if the adolescent had not been seen in the past 12 months. Hispanic youth were less likely to be screened compared to non-hispanic (adjusted odds ratio 0.2%).	Significant gap between frequency of depression screening and perceived responsibility in identifying adolescent depression in primary care suggests barriers still significant. Pediatricians with on-site or collaborating mental health professionals and team-based practice approaches more likely to have better approaches to screening, identifying, and managing adolescent mental health. AAP-ACAP collaboration needs to continue focus on supporting integration of mental and behavioral health into primary care for children

		without a documented diagnosis of depression.		and adolescents. Limitations: data reflect isolated office visits, not reflective of entirety of care for a patient.
Olfson et al. (2014). National trends in the mental health care of children, adolescents, and adults by office-based physicians.	The purpose of this study was to evaluate patterns of mental health diagnosis and care	Nationally representative sample of outpatient visits to physicians in outpatient practice settings in the United States. Data obtained from National Ambulatory Medical Care Surveys from 1995-2010 (n=446,542 surveys).	Data studied included visits resulting in mental health diagnosis, rates of prescription of psychotropic medications, psychotherapy services, and visits to psychiatrists. Data were compared between youth and adults, children and adolescents. Population-based proportions compared over time, logistic regression models to examine trends and probability.	New diagnoses for youth and psychiatry visits have increased significantly compared to adults. Comparable rates of increase in psychotropic medication prescribing. Psychotherapy visits increased for youth, and decreased for adults. Mental health care for youth is predominantly provided by non-psychiatric providers. Significant increases in prevalence of youth mental health issues and reliance on non-psychiatric providers calls for further evaluation and improvement of collaborative systems for mental health care.

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