

PROVIDER PERCEPTIONS OF A MATURE SCHOOL-BASED HEALTH
CENTER'S EFFECT ON ADOLESCENT HEALTH AND
WELLNESS: A CASE STUDY

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by
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WELLNESS: A CASE STUDY

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University of Missouri-Kansas City, 2013

ABSTRACT

School-based health centers (SBHCs) have emerged as a model of care that enhances utilization of health care services for U.S. adolescents. Staffed by interdisciplinary teams, physicians play a largely supervisory role in these centers, where nurses and Nurse Practitioners play a critical role. Yet the school-based health center model is unfamiliar to many nurses. The passage of comprehensive national health care reform included dedicated funding for school-based health centers, so this model is expected to expand in the near future. The aims of this study were: (1) To explore how a mature SBHC functions to impact the health and well-being of adolescents; and (2) To explore how adolescent health care providers in a mature SBHC perceive the effect of its utilization on the health and well-being of adolescent users. The research question was: How does a SBHC affect the health and well-being of its adolescent users, as perceived by providers in a mature school health center? The study used a single case study methodology and employed multiple methods of

data collection, including interviews with the providers, staff and historians of the center, document review, descriptive epidemiologic data, and limited observation. An adaptation of Bronfenbrenner's ecological model of multiple influencers as the theoretical framework guided interviews and data analysis. Findings included the themes of: easy access, providers as connectors, and care of the whole adolescent. This SBHC was able to construct a robust nexus of care that fit the needs of adolescent users, creating a complex network of internal and external partnerships with the school and local community.

APPROVAL PAGE

The faculty listed below, appointed by the Dean of the School of Nursing have examined a dissertation titled “Provider Perceptions of a Mature School-Based Health Center’s Effect on Adolescent Health and Wellness: A Case Study” presented by Beth Amy Blacksin, candidate for the Doctor of Philosophy degree, and certify that in their opinion it is worthy of acceptance.

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CHAPTER 1

INTRODUCTION

School-based health centers (SBHCs) are a health resource that provide a full range of age appropriate health services, including primary care, mental health care, family outreach, and chronic illness management, without concern for the student's ability to pay and located in a school or on school grounds. School-based health centers have proliferated as a model of care for U.S. adolescents (Lear, 2007; Morone, Kilbreth, & Langwell, 2001). They have existed since the late 1960s and early 1970s. The first centers were started by Dr. Phillip Porter, a Cambridge pediatrician, with the support of CATCH, a community grants program of the American Academy of Pediatrics. The second group of school-based health centers opened in Minneapolis and Dallas. Beginning in 1978, the Robert Wood Johnson Foundation (RWJF) funded a national demonstration project to expand the model. State level funding further supported model expansion. In 1995, federal funding contributed to the building of new centers using funds from the Health Resources Services Administration's Healthy Schools-Healthy Communities grants (Frederico, Marshall, & Melinkovich, 2011; Gustafson, E.M., 2005; Lear, Gleicher, St Germaine, & Porter, 1991). The Affordable Care Act (section 4101(a)) set aside \$200 million over fiscal years 2010 through 2013 for construction, renovation, and equipment needs for school-based health centers (SBHCs). As of December 2011, the Health Resources Services Administration had released \$109 million in awards to 323 SBHCs sponsors--covering 866 new and existing health centers around the nation. In December of 2012, an additional \$80 million was distributed to 197 school-based programs (www.sbh4all.org, 2013).

Today 1,930 SBHCs provide care nationwide and serve approximately two million children. The majority of centers are in high schools (29.8%), but increasingly, centers are located in elementary and middle schools. The majority of centers are located in urban centers (54.2%), but there are large numbers in suburban (18.0%) and rural (27.8%) areas (Lofink et al., 2013).

Despite the proliferation of SBHCs and the important role of nurses and nurse practitioners staffing such centers, many nurses are unfamiliar with the model. Passage of comprehensive national health care reform (Pear & Herszenhorn, 2010) and increased dedicated funding for SBHCs has resulted in significant expansion of the model. SBHC expansion presents opportunities for public health nurse and nurse practitioner employment, as well as participation in advocacy for improved access to services for children and adolescents. The purpose of this literature review is to familiarize nurses with the SBHC model. Chapter 1 will present a brief overview of U.S. adolescent health status, a description, history of and rationale for the school-based health center model, and a summary of the impact of SBHCs on selected health outcomes. Lastly, Chapter 1 will address implications for future research, public health nursing and public policy.

Adolescent Health Status in the United States

The population of U.S. adolescents has made little progress meeting the health objectives of the Healthy People 2010 (U.S. Department of Health and Human Services, 2005). As part of Healthy People 2010, a national consensus panel identified the following critical areas for adolescent health: mortality, unintentional injury, violence, mental health and substance use, reproductive health, and prevention of adult chronic disease. Of these,

only reproductive health and prevention of chronic disease have demonstrated improvement (Park, Brindis, Chang, & Irwin, 2008). In the area of reproductive health, overall, 68 pregnancies occurred per 1,000 women aged 15–19 in 2008. The 2008 rate was a record low and represented a 42% decline from the peak rate of 117 per 1,000, which occurred in 1990. But despite this decline, the U.S. teen pregnancy rate continues to be one of the highest in the developed world. It is more than twice as high as rates in Canada (28 per 1,000 women aged 15–19 in 2006) and Sweden (31 per 1,000) (Guttmacher Institute, 2012).

In terms of overall health outcomes, low-income and minority families experience the worse outcomes. These poorer outcomes may be intensified among the most marginalized and disadvantaged groups, for example among Lesbian gay bisexual and transgender (LGBT) persons, the homeless, and ethnic minority youth (Flaskerud, 1998). Adolescents access primary care less than any other age group, and often do not seek services even when they might benefit from care. When adolescents seek services, they tend to use acute or specialty care like reproductive health care, and do not obtain them from a regular primary care source (National Research Council [NRC] and Institutes of Medicine [IOM]), 2009).

Adolescents also experience one of the highest rates of under/uninsurance of all groups (NRC & IOM, 2009; Brindis & Sanghvi, 1997). Factors influencing access to care include health insurance, cost, difficulty navigating the health care system, concerns about confidentiality, lack of comprehensive services at a single location, and demographic factors such as age, gender and ethnicity (Brindis & Sanghvi 1997; Britto, Klosterman, Bonny, Altum, & Hornung, 2001; Elser, Jorosik, VanGeest, & Fleming, 2006). Since high risk behaviors and the formation of adult habits are initiated during adolescence, improvements in

health status and access to services assume particular importance (Crosby, Santelli, & DiClemente, 2009; Park, Mulye, Adams, Brindis, & Irwin, 2006). Current adolescent health status, insurance status, inability to gain access to health services are factors that strongly suggest the need for a different model of care for this population.

SBHC Model of Care

Ninety percent of U.S. children attend publically funded schools (Richardson & Juszczak, 2008). Since school is the one institution where adolescents consistently spend time together, it provides a logical venue for the administration of health services. SBHCs are created in collaboration with schools, a health organization (for example, hospitals, federally qualified health centers, boards of health) and communities. The vast majority of SBHCs are located in schools at a fixed site. However, SBHCs are also located in mobile vans and can rotate to a number of schools. A third variation of the model is a school-linked program. Linked programs do not provide on-site clinical services, but instead coordinate care and provide health promotion or wellness services like nutrition education, violence prevention, and sex education. SBHCs deliver specific services based on the needs of the community, the school and the sponsoring health organization. The sponsoring agency's ability to financially support the model determines the level of services and its staffing (Richardson & Juszczak, 2008).

Eighty percent of these centers currently offer services to at least one grade of adolescents. Clients served are predominantly low income and ethnic minorities. Built on a primary care model, SBHCs embrace three basic service delivery approaches: primary care only, primary care and mental health, or primary care and mental health plus additional

services like case management, oral health, and health education (Frederico et al., Melinkovich, 2011). The addition of youth development activities is a more recent enhancement of the primary care mental health plus model. SBHCs are staffed by interdisciplinary teams, composed of physicians, nurse practitioners, registered nurses, physician assistants, and social workers. Nurses play a key role in the delivery of services, with physicians typically involved in a collaborative or supervisory role.

Need and Rationale for a New Model

Health disparities are documented between low income adolescents and their middle and high income peers. Poor adolescents have worse health outcomes, and lack access to medical services, including dental and mental health care (Newacheck, Hung, Park, Brindis, & Irwin, 2003). To more fully understand and evaluate the fragmented system of care for adolescents that contribute to these disparities, National Research Council and Institute of Medicine (2009) conducted a major consensus study of adolescent health services. The purpose of this study was to examine the inadequacies of the health services system for adolescents, in order to make recommendations for system improvements (NRC & IOM, 2009). Leading experts in the field were invited to participate in this consensus process. The areas examined were: adolescent health status, current health services, settings and providers, improving systems of health services, preparing a workforce, and issues related to insurance coverage and access. The report utilized the World Health Organization's five elements as a framework to evaluate adolescent health services. These five elements are: accessibility, acceptability, appropriateness, effectiveness and equity. To the degree that these elements

are implemented by health care institutions, they can provide the basis for engaging and attracting youth to access services.

The NRC and IOM report provides a rationale for the model of SBHCs as a viable alternative for this population. The major causes of adolescent morbidity and mortality are related to risk taking behaviors that begin in adolescence. Seventy percent of mortality is violence related—unintentional injury, homicide and suicide. The other major causes of morbidity are the epidemics of obesity, lack of physical activity, substance use, and mental health issues. While office-based medical practices are widely available, their services do not meet the WHO criteria, and especially for the more than 5 million under/uninsured youth, ages 10-18 (NRC & IOM, 2009). Many adolescents obtain routine care in emergency departments (ED) or rely on safety net providers, like SBHCs as one example. Therefore, acceptable adolescent health care requires a blend of primary care, primary prevention, health promotion, educational and social services, and expert providers who are trained to care for adolescents.

SBHCs show promise as a model that can provide this kind of care. The SBHC model directly addresses the factors that restrict access for adolescents. Their convenient placement in schools or on school property eliminates geographic access as an issue. School health centers care for all students regardless of health insurance status, and many attempt to enroll uninsured students in state children's health insurance programs. SBHCs have the potential to mitigate barriers such as gender, adolescent status and ethnicity. SBHCs can care for both adolescent males and females, and are generally located in schools serving large numbers of ethnic minorities. Since parents usually provide an overall consent for services,

users can discuss and address risky behaviors without the usual fear of lack of confidentiality, a concern for this population. Most importantly, SBHCs provide comprehensive, coordinated care in a single location, including primary health care, health promotion and prevention, risk assessment, behavioral and oral health services (or referrals), and thus can potentially address the major causes of morbidity and mortality in this age group (Morone et al., 2001).

Major provider associations have endorsed or authored position statements about the advantages of the SBHC model. These include the following: The Role of School Nurse and SBHCs (National Association of School Nurses, 2001, revised 2011); School Nurse/School-Based Health Center Partnership, (National Association of School Nurses, October, 2001); Position Statement on Adolescent Health, (American Nurses Association October 30, 2000); School-Based Health Centers and Pediatric Practice, (American Academy of Pediatrics, Council on School Health, 2012) and School-Based Health Center, Position Paper of the Society of Adolescent Medicine (SAM, 2001). These policy statements demonstrate widespread and growing support for the SBHC model among major provider organizations.

Early History of Health Care in U.S. Schools

The United States has a tradition of providing health care in schools dating back to 1902. New York City employed the first school nurse to address the issue of children's exclusion from school due to contagious diseases (Gustafson, 2005). In response to the influx of immigrants into the U.S., school nurses traditionally focused on health screening and contagious diseases, including prevention services, but not treatment of illness (Lear et al., 1991). The school nurse role changed over time, to include immunizations, health

education, case finding and physician referral. By the 1960s, school nurse positions were the target of budget cuts, and positions decreased nationwide (Gustafson, 2005). At the same time, an objective need for an expanded role of the school nurse and school health services burgeoned. Factors contributing to the need for expansion included the growth of the social programs of the Great Society during the 1960s; a large increase in the adolescent population, and an adolescent mortality rate reported as worse in 1979 than in 1960 (Lear et al., 1991).

In 1964 Dr. Henry Silver and Dr. Loretta Ford began the first pediatric nurse practitioner program at the University of Colorado Health Sciences Center, in Denver (Murphy, 1990), followed by the first school nurse practitioner program in 1970 (Igoe, 1975; Silver, 1971). In that same year, Priscilla Andrews and John Connelly developed a pediatric nurse practitioner program at the Massachusetts General Hospital. Dr. Philip Porter, a visionary Cambridge pediatrician, established a pediatric nurse practitioner training program in the Department of Pediatrics at Cambridge Hospital (Massachusetts). The Cambridge Hospital PNP/school nurse program emphasized training in primary care services (well and sick care), home visiting, as well as school health supervision (Porter, Avery, & Fellows, 1974). Dr. Porter saw the PNPs as “the primary care taker” in his complete re-envisioning and reorganization of maternal child health services for poor families in Cambridge. Four of the five new clinics started by this program were in elementary schools (Porter, Leiber, Gilbert, & Fellows, 1976).

The first SBHC services started in three different cities across the U.S. The Cambridge Health Department (Dr. Porter was Maternal Child Health director) began to

provide medical services at a clinic in a Cambridge K-8 school (1967), and in a clinic staffed by nurse practitioners at a Cambridge high school in 1974 (Porter et al., 1974). In 1970, the University of Texas Health Sciences Center Pediatrics Department founded the nation's first high school-based center staffed by an interdisciplinary team of nurse practitioners, physicians, social workers, nutritionists, and health educators at the West Dallas Youth Center in Pinkston High School (Lear et al., 1991). In addition, the Maternal and Infant care Program at Ramsey Medical Center opened a comprehensive health center in a high school in St. Paul, focused on pregnancy prevention in 1973 (Edwards, Steinman, & Hakanson, 1977).

The modern expansion of the school-based health center movement was launched in the 1970s and 1980s, when the Robert Wood Johnson Foundation (RWJF) initiated two grant initiatives and funded a series of single sites in Chicago, Kansas City, Houston and Flint, Michigan. Building on this success, in 1986-87, RWJF funded a major national demonstration project called the School-based Adolescent Health Care Program. This project established 23 centers across the United States, in 11 states and 14 cities. Institutions applied to RWJF for grants; three academic health centers, four teaching and community hospitals, five county health departments and two not-for-profit agencies were the awardees in 11 states and 14 cities (Lear et al., 1991).

At the beginning of 1990, at least 150 SBHCs were in operation (86% in high schools, the rest in middle and elementary schools) (Adelman, Barker, & Nelson, 1993). The number of SBHCs grew to 1200 in 1998, serving an approximately 1.1 million children in 45 states, no longer primarily in urban high schools, but serving students in all grades. This number still only represented 2% of all children in U.S. schools (Brindis et al., 2003). The

model grew as researchers documented its success, and private foundations, states and the federal government were able to assist with partial funding support. State coalitions and a national organization advocated for the model's growth and sustainability in state legislatures and in the U.S. Congress. Today, nearly 2000 SBHCs are in operation, serving approximately two million ethnically diverse children.

Specific Aims/Purpose

While the overall population of U.S. adolescents has made little progress in meeting the objectives of the Healthy People 2010, an urban school-based health centers may help to reach these objectives (Lear, 2007; SAM, 1988). Since SBHCs can provide primary, secondary and tertiary preventive services, they can play a role in the transformation of child health services into a more holistic model. This is especially relevant during the current period when policy makers contemplate such a reorganization (Halfon, DuPlessis, & Inkelas, 2007; Lear, 2008). Insufficient research has been conducted to fully understand the specific processes and interactions within a SBHC that may contribute to the impact these centers make on the overall health and wellbeing of adolescents. By applying an ecological approach to examine SBHCs, a better understanding can be achieved that may assist researchers, SBHC staff, and students of the health professions implement effective interventions that could improve the health of all U.S. adolescents and build theory related to the functioning of these organizations. Broadening such awareness may also lend support to school leaders, public health agencies, community organizations and other stakeholders to advocate together on behalf of the model.

Study Purpose

The overall purpose of this research study was to add to the body of knowledge about SBHCs in order to advocate for their proliferation, and ultimately to improve adolescent health and well-being.

Specific Aims

Specific Aims of this study were: (1) To explore how a mature SBHC functions to impact the health and well-being of adolescents; and (2) To explore how adolescent health care providers in a mature SBHC perceive the effect of its utilization on the health and well-being of adolescent users.

Research Questions

The research question was: How does a SBHC affect the health and well-being of its adolescent users, as perceived by providers in a mature school health center?

Definition of Terms

School-Based Health Center (SBHC): A health center embedded in or linked to a school, involving a partnership between an educational entity and a sponsoring agency, usually a federally qualified health center (FQHC), a hospital or a health department. Depending on funding and the center's specific staffing model, services provided are primary care, primary care and behavioral health, primary care, behavioral health and additional services like case management, oral health, and youth development.

Mature: Used as a descriptor of the research site selected for the study. According the 2010-11 School-Based Health Alliance census, 52.8% of SBHCs in the U.S. have been in

operation for more than 10 years (n=1381). In terms of services, 37.4% are considered primary care plus (physical health, mental health and additional services) (n=1381) (Lofink, et al., 2013). The SBHC selected for this research study has been in existence for 17 years, provides primary care (physicals, immunizations, care of acute and chronic diseases, etc.), mental health, reproductive health, case management, youth development, health education and acupuncture services. These characteristics constitute the definition of mature: number of years of operation, and primary care plus service provision.

Student User: A high school student who utilizes the services of a SBHC.

Adolescence: Age of transition and change between childhood and adulthood.

Different data sources include different age ranges, the most inclusive using ages 10-24.

This study focuses on the middle adolescence, ages 14-18. The health of adolescents is strongly influenced by risk-taking behaviors like substance use, high risk sexual behaviors, mental health conditions and violence.

School-Based Health Center Provider: Depending on the staffing model, providers may include a pediatrician, registered nurse, health educator, nurse practitioner, acupuncturist, dentist, youth development specialist.

Ecological Model: An ecological model takes into account the contextual and interactive factors contributing to adolescent health, both individual and environmental risk factors and protective factors. It embraces the notion that multiple interacting influencers impact health outcomes, not just a single influence.

Assumptions

Major assumptions for this study include the following: (1) Multiple influencers affect adolescent health outcomes; (2) The constructs of the proposed ecological model of adolescent behaviors provide a useful framework for examining and understanding behaviors of youth in SBHCs; and (3) The voices of providers can illuminate our understanding of a SBHC's effect on adolescent health outcomes.

Limitations

This study focused on a single case. "Single case studies can be vivid and illuminating, especially if they are chosen to be critical extreme or unique, or revelatory as Yin (1984) suggests" (Miles & Huberman, 1994, p. 26). Single case studies are a very common design (Yin, 2009), and can be viewed as a pilot case for ongoing case study research. However, a multiple case study provides a deeper understanding of processes and outcomes, and superior method to attribute causality (Miles & Huberman, 1994), so those were recognized limitations of this single case study.

Significance

Recent SBHC research used qualitative methods in a limited fashion to explore the unique role of SBHC idea from the perspective of SBHC participants. One recent study conducted focus groups with adolescent users, and documented how SBHCs provide adolescent friendly services and improved client satisfaction (Soleimanpour, Geierstanger, Kaller, McCarter, & Brindis, 2010). More in depth research is needed in order to magnify the voices of both adolescents and providers about their experiences, relationships and processes of providing/obtaining care.

One critique of SBHC research suggests that qualitative approaches can “yield important insights into program strengths and weaknesses.” These data can “reveal examples of interpersonal relationships between students and staff that are not illustrated through quantitative surveys” (Dryfoos, Brindis, & Kaplan, 1996, p. 218). A recent meta-analysis of SBHC and academic performance suggested that collecting qualitative data and “highlighting SBHC client “success” stories may prove persuasive to educators, policy makers and community members” (Geierstanger, Amaral, Mansour, & Walters, 2004, p. 252). This research study contributes to filling this gap in the literature.

CHAPTER 2

REVIEW OF LITERATURE

Introduction

SBHCs initially began as a way to address poor adolescent health outcomes, and, in particular, lack of access to services and pregnancy prevention. A large amount of literature is available to explore how a mature SBHC functions as an intervention to impact the health and well-being of adolescents. This review of literature samples a number of the most significant elements of the model. First, it will address literature in the area of health services: how a SBHC impacts access to and utilization of services for adolescent populations, SBHCs as primary care providers for adolescents, and their implementation of risk assessment and screening. These topics were selected because they reflect much of the early research on SBHCs and continue to be studied. There is consensus that SBHCs have a positive impact on access, utilization and implementation of risk assessment and screening (Keeton, Soleimanpour, & Brindis, 2012). This review will summarize and comment on a number of those studies. In addition, this review will briefly summarize selected health outcomes research related to reproductive health and mental health. These categories of service provision are common in many SBHCs. Since they are significant influences on adolescent population health, they hold continuing interest to the research community. Lastly, this review will briefly address emerging research areas in SBHC service provision related to youth engagement, positive youth development, and the impact of SBHCs on academic performance. Academic performance among disadvantaged populations and its relationship to health is a topic of great interest to both to the educational and public health

nursing communities. SBHCs are one health intervention strategy that may contribute to improved school completion rates (Freudenberg, 2010). Research that could begin to establish a causal linkage between SBHC care and improved academic performance would help to create a strong argument for ongoing funding and sustainability for SBHCs.

Early Evaluation Framework

Dryfoos et al. (1996) authored a seminal article about the state of SBHC research and evaluation, and addressed currently available sources of data. Many of their findings are still applicable. In 1996, no single data set existed that provided a comprehensive overview of school-based health center sites and services. The development and implementation of the School-Based Health Alliance (previously the National Assembly on School Based Health Care) national census has led to great strides in the area of data collection about SBHCs. Beginning in 1998, this survey of school-based, school-linked, and mobile health centers collected demographics, staffing, services, policies, utilization, financing, prevention activities, and clinical policies. Despite the fact that the census relies on voluntary participation of SBHCs, this data set holds great potential to move research science forward.

This study identified a number of limitations impacting SBHC research. Challenges can be divided into several categories. Challenges related to the use of schools as research sites are: delays in research implementation because of the need to ask sensitive questions; the need for cooperation of both teachers and principals; the need to obtain parental consent; and high student mobility rates in poor communities. In the area of research design, researchers identified a number of additional issues. Random assignment is rarely feasible so matching schools are substituted. The use of comparison groups (users vs. non users or

cohort comparisons) may not be ideal. The use of student self-reports are problematic when asking about risky behaviors. Ideally, the use of self reports of data requires confirmatory data sources which may be difficult or impossible to collect. It may be difficult to distinguish between all school changes vs. individual changes, so outcomes can be misleading in terms of program effects. Additional design issues are small sample size, and difficulty understanding of confounding variables because of multiple competing interventions in schools. Another area of difficulty which these researchers do not identify is the complexity of obtaining institutional review board permission from multiple agencies such as sponsoring agencies, schools, and academic partners. In one large urban school district, the district IRB process is unlikely to grant approval to an independent researcher's project (A.Valukus, personal communication, 2012).

In terms of program evaluation, these researchers suggested a number of recommendations for future research. Their recommendations include the use of triangulation in both qualitative and quantitative methods; a clear description of program objectives when evaluating an intervention; pre-SBHC implementation data collection, tracking of the entire school population, including drop-outs; and using the largest possible sample size to obtain statistical reliability. Long term follow up of users is also a desirable evaluation strategy. The creation of process evaluation of new models is a useful method to drive policy changes. Some suggested areas of future inquiry are comparison of SBHCs to other models of care for adolescents and exploration of the meaning of "comprehensiveness of services, as well as qualitative approaches" (Dryfoos et al., 1996). These criteria remain useful to consider when analyzing current research.

Early Evaluation Studies: Access and Utilization of Services

The earliest research on SBHCs began to describe the model and to document success of its ability to increase adolescent access to primary care and utilization of services, especially to the most vulnerable populations. These early descriptive studies equated access with utilization, and most studies describe characteristics of the client population, service provision (programming) and staffing, not health outcomes.

Dryfoos (1985) conducted the first comprehensive program evaluation of SBHCs, an important study because it represented a first attempt to define the SBHC model. Dryfoos studied the development and diffusion of SBHCs, looking at claims that they can prevent teen pregnancy, decrease absenteeism, and upgrade the quality of students' medical care. Data was collected using sites visits, telephone interviews, annual reports and program statistics. The researcher also uses a significant review of strategies for pregnancy prevention, conversations with key informants and a 1984 conference as a data sources. At the time of the evaluation, 14 programs were operating in 32 schools nationwide.

Her study identified both positives and negatives of SBHC model as it established a framework for their description and evaluation. The positive elements catalogued about SBHC model were that it:

- Provided services where teens are;
- Allowed health education and promotion in the classroom to be combined with medical care and treatment in the clinic. This model decreased fragmentation; can reach the highest risk; youth can obtain contraceptives without being

identified as sexually active when they are delivered with other services.

Continuity of care could be enhanced;

- Could bypass laws prohibiting school RNs from treating minor illnesses;
- May improve general health and attendance; and
- Appears to be cost effective.

Negatives findings were:

- Administrators faced tangled bureaucratic problems as funding comes from many sources;
- Multiple provider agencies blurred lines of its ultimate responsibility;
- Local schools could impose unacceptable regulations;
- Staffing and organizational problems: services were only available during school hours and many centers had no medical back up; and
- Sustainability related to funding: a need to extend locally funded MCH programs, community health centers and hospital satellite clinics to school sites.

Dryfoos worked as a researcher at the Guttmacher Institute for 10 years where the organization's focus was on sexual and reproductive health, mirroring the original impetus for SBHCs. Her evaluation perspective was heavily focused on pregnancy prevention.

Unfortunately, it was difficult to document program effects in this area. Dryfoos identified or described significant elements of the model: an overall description, operations, staffing and faculties, family planning services, funding sources, and evaluation measures. This early program article established a useful framework for describing and evaluating the model.

Dryfoos' categories remain as areas of inquiry that researchers would adopt as their

evaluation efforts moved forward informed by larger sample sizes, use of comparison designs and more sophisticated statistical analyses.

Lear also synthesized evaluation data from the 23 RWJF-funded schools. She concluded that the SBHC model was able to increase access to primary care services to a population that lacks such services. The RWJF evaluation reported that the student enrollment of the 23 centers was: 52% African American, 28% Hispanic, 16% non-Hispanic White, 4% Asian, and NA/Other 1%. During 1988-89, 21% of new registrants at the 23 schools reported they had not received medical care for more than 2 years. Fifty eight percent described themselves as self-pay, (assumed to be uninsured) and 21% reported no regular source of medical care. These data suggested that student users are medically underserved, so that SBHC have the potential to increase access to care and in particular to minority students who are uninsured (Lear et al., 1991).

In addition, Lear's evaluation reported that SBHCs could provide comprehensive school-based services to diverse communities (geographic and racial). Both communities and adolescent users were accepting of the model, with a minimum of community conflict. Identified issues were differences between educational and health cultures; physician staffing and salaries; need for marketing/outreach; and need for health outcomes research. However, the RWJ evaluation did not document improvements in health status or evaluate cost/benefit of the model (Lear et al., 1991). Further, this evaluation, because it used data collected from quarterly management information reports, summarized basic descriptive patient utilization and staffing data. There was little description of so called 'non-clinical' activities, and though telephone interviews with staff were mentioned, there was almost no information

about these interviews explicitly reported in the evaluation. As an early study, this evaluation was significant because it clearly explicated the policy arguments for the model.

Kisker and Brown (1996) conducted an outcomes evaluation of 19 of the 24 RWJF-funded schools. Researchers compared a cohort of students (all students, not just users) in the 19 SBHC schools to a national random sample of students in large urban cities without SBHCs. Outcome measures included self-reports of health center utilization; use of other health care providers; knowledge of key health facts; substance use, sexual activity, contraceptive use, pregnancies /births and health status. Since the strength of the SBHC intervention varied in the 19 schools, the researchers also measured the impact of stronger vs. weaker SBHCs based on program characteristics i.e. a dose response approach. In SBHC schools, researchers interviewed and surveyed first year students who obtained parental consent. These students were then re-interviewed and surveyed in the spring of their normal graduation year. Parallel surveys were conducted with approximately one thousand 9th and 10th graders whose schools did not have SBHCs. A statistically significant percentage (71%, $p=.01\%$) of health center school students visited a health care provider during their senior year than would have if they had followed the pattern of urban youths nationally (59%). Certain students with the less access to health care or greater needs were significantly more likely than others ($p<.05\%$) to visit the SBHC. These students were those without health insurance or students reporting having a health condition that limited their daily activities. Increases in health care were for treatment of an illness and injuries. Students who attended the stronger health centers were 15% more likely ($p=or<.05\%$) to visit the health center than were students at schools with weaker health centers.

Nearly all students reported receiving classroom health education on drug and alcohol use, STIs/HIV, violence, suicide or depression, and menstruation. SBHC students consistently demonstrated greater health knowledge; for example, the number of SBHC students at graduation who knew about effective contraception was 20% points higher when compared the national sample. However, increased knowledge did not impact high risk behavior change. Only two of the eight estimates of health center effects on risky behavior were statistically significant ($p \leq .05$). SBHC students demonstrated reduced initiation of sexual activity during high school. Second, researchers found that SBHC students were less likely than the national sample to have used an effective contraceptive method at last intercourse (Kisker & Brown, 1996, p. 342). Researchers saw this finding as implausible. It is unlikely that centers actually discouraged contraceptive use. The implausibility of this finding also cast doubt on the first finding, according to researchers. They suggested the nature, intensity and duration of SBHC interventions related to risky behaviors needed re-evaluation, the need to use proven interventions, and to provide comprehensive services.

In addition, the study suffered from a major flaw in its research design. Early in the evaluation process, the Robert Wood Johnson Foundation objected to collecting data from local comparison schools, so researchers stated that the lack of a comparison group “severely limited the conclusiveness of the findings about health center effects on outcomes.” (Kisker & Brown, 1996, p. 343). In particular, the use of a national comparison group (self report telephone sample) created a variety of data analysis issues. Due to the complexity of SBHC interventions, as well as multiple interventions that existed within schools, researchers noted that it is challenging to clearly define the program components that are actually measured.

McNall, Lichty and Mavis (2010, p.1604) noted that since researchers compared all students in the SBHC schools to the national sample, we could not know the effects on the users vs. the non users. In addition, since the process evaluation was conducted separately for this project. Researchers recommended the integration of process and outcome evaluations in the future.

Researcher/practitioners involved in the RWJF initiative and other centers started during this period continued to document the history and lessons learned from their experiences. Fisher, Juszczak, Friedman, Schneider, and Chapar (1992) reported descriptive data from one of the demonstration sites. Their study concluded that a New York City SBHC could manage a large number of health care needs of youth in a large urban high school of at-risk youth, as well as serving as a teaching and research site for health professionals. Inner city youth, especially minority youth, often lacked health insurance coverage or used it inconsistently. This SBHC documented increased utilization of services, as these students received more consistent care and referrals for a variety of health issues, not only reproductive concerns. Enrollment increased during the period of the study from 335 in year one to 897 (60% of school population) by year three. The 1,283 students enrolled during the first two and a half years made a total of 7,920 visits. Clinic visits increased from 855 in year one to more than 4,000 in year three. The students who utilized services represented an adolescent population at the highest risk; they were overwhelmingly African American and Hispanic, foreign born, and barely one-fourth were living with both parents. One third were in special programs and /or had repeated a grade at least once, and a similar number were reported not having a best friends and not having a group of friends. In terms

of risky behaviors, these youth demonstrated issues of this population related to use of alcohol and drugs, early initiation of sexual intercourse and risky sexual behavior, and mental health concerns, especially some that were severe, including suicidal ideation. (Fisher et al., 1992). These students used the clinic for a variety of concerns: wellness, immunizations, acute medical, TB screening, with only 14% for reproductive health services. Contrary to the earliest SBHC focus on pregnancy prevention, this study is important because it demonstrated that a SBHC could increase access and utilization of the range of services for the highest risk youth.

Adelman et al. (1993) also studied SBHC utilization, as they examined the differences between users and non-users of a SBHC in a predominantly low income Latino school population. Researchers administered a survey to a sample of 471 Latino high school seniors. Ease of access (physical location) was the most frequently reported reason for use (45%), as well as that the services were helpful (36%) staff could be trusted (33%) and visits were confidential (33%). Frequent users scored highest on measures of psychological distress, and authors concluded that an on- campus clinic could provide help to students who probably would not have sought or received mental health services otherwise (Adelman et al., 1993). Comparison of users and non-users was a design strategy used as a substitute for the lack of a comparison group, and no differences were found with respect to demographics, self-reported grades and absences between users and non users in this study. Findings were also limited to due to sample bias (predominantly Latino sample), use of self reports and small sample size.

As the SBHC movement grew and proliferated, researchers began to develop more sophisticated designs and analyses to examine with greater detail about the impact of the

model on adolescent populations and, in particular, utilization of care. Santelli, Kouzis and Newcomer (1996) conducted a study that looked at nine Baltimore schools with SBHCs and four schools without SBHCs. They surveyed students about use of primary care services, Emergency Department (ED) visits and hospitalization in the previous four years. This study concluded that SBHCs could improve use of certain primary care services, and reduced use of ED and hospitalizations. With similar rates of chronic disease in the SBHC schools vs. comparison schools, SBHC students were more likely to report seeing a social worker (11% vs. 8%, $p < .05$) or counselor (17% vs. 14%, $p < .05$), but not parole officers (8% vs. 9%, $p < .05$). During the previous four years, students in health center schools are more likely to report having a sports physical ($p < .05$), treatment for a cold ($p < .01$) and counseling for personal /emotional services ($p < .05$). These differences were statistically significant after controlling for demographics. A weakness of this study was that it only used survey self-reports, and no baseline data could be collected for comparison for hospitalization data. In addition, these schools had high rates of student mobility, so this fact impacts any sort of evaluation over time.

Allison et al. (2007) used a retrospective cohort study of electronic medical chart data, the Denver Health immunization registry and the Denver Public schools enrollment data to compare visit rates, ED use, and markers of quality of care between SBHC users and youth who used community health centers within a safety-net care system for low income and uninsured patients. Researchers defined quality of care markers as the following: having a health maintenance visit, receiving a flu vaccine, a tetanus booster, and a hepatitis B vaccine. Researchers found that SBHCs improved access to high quality care and were more

likely to receive a better quality of care than users of other traditional outpatient sites. SBHC users, though less likely to be insured (37% vs. 73%), were more likely to have made equal to or greater than three primary care visits, (52% vs. 34%), less likely to have used the ED (17% vs. 34%), and more likely to have received a health maintenance visit (47% vs. 33%), a flu vaccine (45% vs. 18%), a tetanus booster (33% vs. 21%) and a hepatitis B vaccine (46% vs. 20%). This study's significance was that it was one of the first to examine SBHCs and quality of care markers, using three linked databases.

Results regarding access were similar to previous studies conducted in this same system (Allison et al., p. 982). Findings demonstrated that SBHC users made more primary care visits and fewer ED visits compared with adolescents who did not use the ED. However, since 52% of the study cohort did not have a visit or only visited an ED/urgent care, the presence of a SBHC alone did not necessarily guarantee overcoming all barriers to access. This study did show that compared to traditional sites, "SBHCs augment the care provided by more traditional outpatient sites" (Allison et al., 2007, p. 893). One important example of this improvement was that immunization coverage could be improved by providing them at a school-based site. A major strength of this study was its use of the three linked data bases. However, because Denver SBHCs were uniquely linked in one system with community health centers, these findings could not be generalized to all SBHCs.

Kaplan et al. (1999) discovered similar findings about access and use of health services at SBHCs when they conducted a retrospective cohort study that compared elementary SBHC users with non-users. Researchers developed a parent questionnaire from

a previous study that measured access, health care use, and health services descriptors that measured satisfaction.

One major finding of this study was that underserved minority children with SBHCs have better utilization and use of health care services than those without access to SBHCs, independent of insurance status and other confounding variables. Families with SBHC access were more likely to have gone to a physician, a dentist, a counselor or a social worker, and were less likely to have used the ED than those without SBHC access. Respondents who reported the SBHC as the main source of care had the highest satisfaction rate ($p < .01$). This study was the first intervention comparison study of an elementary SBHC. A strength of this study was that it used a SBHC school matched with a comparison school that served a similar population in a similar community. A weakness was that it depended on self-reports, but researchers tried to mitigate this weakness by their extensive efforts to develop the parent survey, including bilingual focus groups, translating/back translating and pilot testing (Kaplan et al., 1999, p. 242).

Crespo and Shaler (2000) conducted a more recent study that demonstrated SBHCs could improve use of health services, in this case in a rural state in a study of 10 West Virginia SBHC sites (three urban and 7 rural sites with a total school population of 7811 students). Researchers used record review to compare rates of enrollment (signed parental consents), utilization (visits), and visits among sub-groups: youth with private insurance, Medicaid, and uninsured youth. Rural and urban SBHCs were compared based on enrollment, utilization and visit rates. The study also analyzed diagnostic categories. Lastly, researchers compared enrollment rates, utilization rates and insurance status for the West

Virginia SBHCs with national norms. Significantly, over the study's three years, enrollment increased from 27% during year one to 64% in year three. Utilization also increased; visits increased 214% over 3 years. However, at rural sites, enrollment was 86% compared to 46% at urban schools ($p < .001$). Utilization at rural schools was 70%, compared to 63% at urban schools ($p < .001$). In a state with mountainous terrain that can impede geographic access, and where 39/55 counties are classified as Medically Underserved Areas, these findings are particularly striking. When rural SBHCs exist, youth will use them, and in particular for preventive services. The most common service provided was well child/ EPSDT visits. Again, in a state where ESDPT coverage is a low 44%, SBHCs can make a difference. This study was important because it demonstrated the efficacy of SBHCs to increase access to health services to low income and uninsured youth in a rural state, a finding that was counter to previous studies about rural access and SBHCs.

Most recently more sophisticated statistical methods and advancement of the science in the area of SBHC research has led to the creation of additional knowledge about the impact of SBHCs on health outcomes, cost and health disparities. Soleimanpour et al. (2010) conducted a large program evaluation ($n=7410$) that describes the impact of 12 SBHCs serving youth in Alameda County, California. Using a mixed method design, this study analyzed provider reported outcomes, client pre/post surveys and student focus groups. From provider reports, during the two year study period, SBHC users increased from 6624 to 7410 and visits from 27,078 to 39,74. In the second year students made an average of 5.4 visits, 33% for medical care, 27% for mental health care, 25% for first aid, and 15% for group visits. Of the medical visits, 55% were for family planning, 24% other (physicals, chronic

disease management), and 20% for health education. Mental health referrals, for new or returning clients, were for academic performance (33%), family conflicts (33%), depression or suicidal ideation (31%), peer relationships (30%), stressful life event (23%) and anger management (21%). Individual therapy was the most common mental health service (38%). During medical and health education visits, the vast majority of clients were screened for high risk behaviors. On the client surveys, SBHCs were found to be the most common source for medical care (30%), family planning (63%), and counseling (31%).

In this same study, mental health providers reported significant improvement from baseline to follow up in 9 of 12 concerns ($P < .05$) and in resiliency factors. Medical and health education providers reported a significant improvement ($P < .001$) from baseline to follow up among female clients responding in use of birth control other than condoms, from 14% to 40%.

Student focus groups reported they liked school health centers because they were free, confidential, convenient and youth friendly. Students thought SBHC improved access to services they might not get in other venues. This broad program evaluation supported other findings about improved how SBHCs improved access, screening and prevention. SBHCs could also meet the profession's criteria for youth friendly coordinated health care for adolescents. A primary strength of this study is that the evaluation group has over a decade history of working with these SBHCs to develop evaluation indicators, tools, and collection and analysis of SBHC data. The study itself was a strong one because of its use of a mixed method design (use of both qualitative and quantitative data), multi-site scope, and the inclusion of youth focus groups.

One study also significant for its advancement of the science was conducted by Guo, Wade, Pan, and Keller (2010). They used a longitudinal quasi-experimental repeated measure design to evaluate the impact of SBHCs on health care access disparities and cost/benefit. Researchers linked primary data sources. Their data sources were state level Medicaid claims, school enrollment data, SBHC encounter records and parents' and SBHC coordinators' survey data. The cost benefit analysis calculated a net social benefit to compare the cost of the SBHC programs with the value they might saved or created. Findings were that in four school districts over three years the net social benefit (total benefits minus the total costs) was \$1.35 million dollars, as a low end estimate. Researchers estimated that SBHCs could have saved Ohio Medicaid about \$35 per student per year. Five benefits were not quantified in terms of cost but were delineated for student users in schools with SBHCs: (1) the disparities gap for African American student users was closed; i.e. African American student users got services they may not otherwise received; (2) 80% of students returned to class after SBHC encounters; (3 and 4) students received more dental and mental health services, potentially reducing the cost of future treatment of these students; (5) students with asthma in schools with SBHCs had a lower risk of hospitalization than those without them. Considering nearly 50% of the population in the urban areas of the study community is African American, this increase in access to care is a significant health policy finding (Guo et al., 2010).

Studies of Primary Care

This section will consider SBHCs as primary care providers, recognizing that there is some overlap in definitions and content with the previous section. Santelli, Morreale, Wigton and Grason (1996) conducted a comprehensive review of literature that examined

SBHCs and primary care using Starfield's model of primary care as an integrating framework. SBHCs meet Starfield's criteria for care: first contact, continuous, comprehensive, coordinated, family centered, and culturally competent. HRSA's Maternal and Child Health Bureau has also adopted this set of standards to evaluate other primary care settings. This study further demonstrates that SBHCs play an important role as primary care providers in the U.S., as they reduce barriers to utilization of health services, especially for those adolescents who are underserved, low income and in high-risk situations. Providing a variety of services, they strive to meet the mental, physical and social needs of this population. Using data management, they also strived to improve care coordination. A major limitation was the ability of SBHCs to act as medical homes, due to limited hours, staff turnover and issues of coordination with other community providers (Santelli et al., 1996).

Research demonstrates that SBHCs could fit the U.S.' definition for primary care: first contact, continuous, comprehensive, coordinated, family centered, and culturally competent, despite the fact that their limited hours decreases their ability to serve as medical homes. They also increased access to care in both urban and rural settings, in particular for underserved adolescents SBHC users were more likely to access regular primary care, less likely to go to the ED for care and less likely to be hospitalized.

Studies of Risk Assessment, Screening and Health Promotion

In an expanded model, SBHCs offered additional services like risk assessment, active outreach, health promotion and health education (Gustafson, 2005). SBHCs consistently demonstrated a commitment to screening and risk assessment of the populations served when compared with other models. Screening and risk assessment were of primary importance in

care of adolescents, because the majority of their poor health outcomes stem from engaging in risky behaviors.

Blum et al. (1996) conducted a comparison chart review of five practice settings caring for adolescents. The purpose of the study was to assess the extent to which comprehensive, age-appropriate screening is conducted. These practice settings included pediatric private practices, family practices, community family practices, school-based health centers and community adolescent clinics. Though no practice setting conducted screening at the recommended level, the two teen clinics conducted screening more extensively for high-risk behaviors than traditional practices, with the SBHC (11/21 behaviors) and teen community clinic (14/21 behaviors) achieving the highest rates of screening. ANOVA indicated that differences among practices accounted for 48% of the overall variance in screening when other factors were not taken into account ($P=0.00001$). This study suggested that providers who regularly care for teens were more likely to implement screening for risky behaviors.

Klein et al. (2007) evaluated a community health center (CHC) and a SBHC, to determine whether quality of care for adolescents improved when they also received some care at a SBHC. Researchers found that SBHC users were more likely to receive preventive counseling on STDs (73.3%, $p=0.007$) HIV/AIDS (68%, $p=0.001$), condom use and birth control (73.3%, $p<0.0001$) and physical/sexual abuse (42.3%, $p=0.042$). (p =comparison value of the three samples, commercially insured, Medicaid-insured and SBHC samples). Researchers concluded that SBHC providers may be more likely than those in other settings to screen and counsel their patients about reproductive and sexual health and

abuse. This study's major flaw is its low response rate. Of a total of 374 respondents, 195 had commercial insurance, 104 had Medicaid and 75 were SBHC users.

Adolescents want to discuss health risks with providers, but many do not receive counseling. In addition, youth who reported health risks were more likely to discuss them without a parent present (Klein & Wilson, 2002). Klein and Wilson analyzed a national sample of adolescent boys and girls, grades 5-12. Overall, 70.9% of the sample reported at least one of eight potential health risks, but 63% of these adolescents had not spoken to their doctor about any of these risks. Adolescents who reported having spent private time with their provider were much more likely to have had their risks discussed (45.6% vs. 28.4%, $p < .0001$).

McNall, Lichty, and Mavis (2010) conducted a study to examine the direct and indirect effects of SBHCs on health and health behaviors among middle and high school students. Using a prospective cohort design, researchers sought to understand the direct impact of SBHC use on health behaviors, and the indirect effects of having a SBHC in a school on health and health behaviors, regardless of whether students use the services. Matched cohorts of middle school and high school students in schools with and without SBHCs were surveyed using the Child Health and Illness Profile-Adolescent Edition over two consecutive years. Researchers did not identify a school level effect on health outcomes. However, at the individual level, SBHC users were more satisfied with their health, and engaged in more health promoting behaviors, such as more physical activity and eating more healthy foods than non users. This was an encouraging finding, given the national epidemic of obesity. This study, though it relied on self reports of users, had several

strengths. This study overcame the inability to randomly assign students to intervention schools by matching established SBHC sites and comparison schools. It used a large sample size of 16 schools and employed multilinear modeling which allowed for the analysis of both school level and individual level effects. Study findings were consistent with study findings of another study where researchers found that SBHC use was consistent with an improved self reported sense of well-being (Wade et al., 2005).

Another study found that when asked whether clinicians screened or counseled youth on various high risk behaviors, fewer than half responded positively (Chung, Lee, Morrison, & Schuster, 2006). Standardized general adolescent screening tools were infrequently used in primary care practices (Gardner, Kelleher, Pajer, & Campo, 2003). Providers in a variety of adolescent settings may lack training in counseling youth, cultural competency, adolescent health and development (NRC & IOM, 2009). In addition, providers receive inadequate or no reimbursement for counseling/case management and the provision mental health services in the primary care setting, so there is no financial incentive to provide these services (NRC & IOM, 2009).

However, reported above, SBHCs overcame or have the potential to overcome a number of the issues identified by the NRC/IOM report. SBHCs emphasized risk assessment and counseling, and provide many services in one site. Therefore, they had both the ability to identify behavioral risk and then help youth to deal those behaviors by increasing coordination and collaboration of care. The model appears to overcome adolescent health access issues, as well as both financial and non-financial barriers to care. In the next section,

this chapter will briefly explore two key service areas in SBHCs that deal with risky behaviors in the context of the provision of reproductive health and mental health services.

Studies of Reproductive Health

SBHC reproductive health services vary based on a number of factors, including political climate. The majority of SBHCs (n=1055) that served middle and high schools offered abstinence counseling (82.1%), provided onsite diagnosis and treatment of sexually transmitted diseases (69.4%), and other diagnostic services such as pregnancy testing (81.2%). The range of reproductive health services were usually decided with community input during a planning phase. More than half of SBHCs provided HIV testing (55.1%, n=1055) and HIV/AIDS counseling (59.8%, n=1054). Barriers to providing the HIV test were cost (22.7%, n=1046), transporting the specimen (21.1%, n=1046), and policies that prohibited testing (19.4%, n=1047) (Lofink et al., 2013). To decrease these institutional and geographic barriers to prevention of unintended adolescent pregnancy will require the ongoing rallying of communities, providers and advocates, especially in hostile political environments.

A very early SBHC study discussed the founding years of one of the first SBHCs in a high school (Edwards et al., 1977). Under the leadership of St. Paul Ramsey Hospital, the SBHC was established in a junior/senior high school. Clinicians initially targeted a high pregnancy rate, three to six times greater than comparable populations in St. Paul. The postpartum school dropout rate was 45%. The high school population was 40% minority, with an overall 30% drop-out rate, double the rate for the city as a whole. Researchers found that two years after opening, the health center increased utilization of services for both boys

and girls, reaching two-thirds of the seniors. Post intervention, the postpartum dropout rate decreased to 10%, with no repeat pregnancies in those girls who returned to school. There were no low birth weight babies and no perinatal deaths among the 38 girls who participated in clinic prenatal care, except for one student with severe toxemia who delivered at 36 weeks. In three academic years, the birth rate dropped from 79/1000 to 35/1000.

However, a major re-analysis of these data showed that, though birthrates fluctuated during the three years, the impact of the clinic on teen pregnancies school wide was not significantly different post-intervention. The differences in findings were attributed to a more accurate method of estimating birth rates. Researchers confidentially matched the names of female students from school records with the names of mothers on birth records at the health department (Kirby et al., 1993). This methodological issue continued as a significant one. In order to track pregnancy outcomes, researchers need a way follow pregnant girls. Establishing database linkage between schools and health departments in order to track the pregnancy outcomes may be difficult or impossible.

The Maternal and Infant care Program in St. Paul and the other earliest SBHC services in high schools originally also targeted decreasing pregnancy rates (Edwards et al., 1977). Inclusion of reproductive health and contraceptive services were not controversial (Dryfoos, 1985, 1988). During the 1980s, groups like the National Right to Life Committee, the Eagle Forum, and the Christian Crusade began to state public objections to the provision of pregnancy interventions in schools. William Bennett, Secretary of Education in the Reagan administration, called SBHCs “a rotten idea that constitutes an abdication of moral authority,” and he led a movement against them (Dryfoos, 1988, p. 193). By the early 1990s,

centers were opening in a political climate that either prevented them from providing full reproductive health services, or they chose not to provide these services to avoid controversy (Santelli et al., 1992).

To introduce a change in school policy related to the dispensing of contraceptives, researchers surveyed Baltimore parents (N=262) about their attitudes toward clinic quality of care, desired services, and dispensing of contraceptives (Santelli et al., 1992). Most parents rated the SBHC as excellent (25%) or very good (36%), and 93% were supportive of the provision of contraceptive services with parental permission. Only three percent of parents were opposed to contraceptive service provision. Involvement of parents was considered critical in changing contraceptive policy in Baltimore, and this lesson is still relevant today. National surveys document that most American parents favor programs targeting the prevention of teen pregnancy, sexually transmitted diseases and HIV, sex education, and school-based reproductive health care. SBHCs can serve as a framework for involvement of parents and increasing family communication in this sensitive area. SBHCs can positively impact future health outcomes in the area of reproductive health (Dryfoos & Santelli, 1992).

SBHCs increased access to and use of contraception. However, access to these services did not necessarily affect pregnancy rates or rates of intercourse. A study of six SBHCs focused on reproductive services reported that there was no statistically significant effect on school wide pregnancy rates. Providing contraceptives onsite was not enough to significantly increase their use. Placing a high priority on pregnancy prevention and/or HIV/AIDs prevention curricula and extensive outreach were necessary to actually have a positive impact on student use of contraception (Kirby, Waszak, & Ziegler, 1991).

Information about the status of reproductive health services in SBHCs from the School Health Alliance's 2003 national survey (N=551) found that access barriers to reproductive services still exist in SBHCs. However, in over three-quarters of centers surveyed, contraception was provided off site (Santelli et al., 2003). Future research should strive to understand the effect size difference between providing onsite vs. referrals in contraceptive dispensing.

Ethier et al. (2011) compared the receipt of reproductive health care, contraceptive use and screening for STIs among adolescents who were sexually experienced among students with and without access to a school-based health center. Twelve urban California high schools from areas with high teen pregnancy rates and high STI rates, half with SBHCs and half without, participated in an intervention designed to improve adolescent sexual health. The purpose of the study was to compare whether students with access to a SBHC were more likely to receive reproductive health care, use contraception and receive STI screening. Students who indicated they ever had sex were included in the analysis. Among sexually experienced females, access to a SBHC was associated with increased contraceptive use and STI screening, and females were also more likely to have used emergency contraception at last sex. Despite overall increased use of hormonal contraceptives, for females with access to a SBHC, less than 20% used hormonal contraceptives the last time they had sex. Almost a third used neither condoms nor hormonal contraception. Though SBHCs increased access to STI screening, overall screening rates were still low. Sexually active males with access to SBHCs were not more likely to receive reproductive health care services of any kind, but the study's data did not offer a reason for this behavior. This study

had a low response rate (31% of the sample, with 44% of that group sexually active), so sample size was a serious limitation (Ethier et al., 2011).

Stunk (2008) reviewed 13 studies addressing teen pregnancy outcomes provided by SBHCs and school nurses. SBHCs care demonstrated a positive impact on the birth outcomes of teen pregnancy and parenting. Examples of such outcomes were mother's educational success (absenteeism and drop-out rates), fewer infant developmental delays, lower incidence of low birth weight babies, and improved decision making about the use of contraception to prevent repeat pregnancies (Strunk, 2008). She concluded that positive outcomes can occur when SBHCs provided services like education, counseling and community referrals to teens. Williams and Sadler (2001, in Strunk, 2008) reported a positive impact on educational success such as improvement in overall grade point averages; 100% of students in the sample were promoted to the next grade; none of the students had a repeat pregnancy; 90% of infants were up to date on well child visits and immunizations. Barnett et al. (2004 in Stunk, 2008) reported that absenteeism and dropout rates were reduced for pregnant adolescents receiving prenatal care in a SBHC in an urban alternative school, but no details were provided.

Results were mixed in terms of the effect of SBHCs on reproductive health. SBHCs can improve access to reproductive health services and produce better birth outcomes for both adolescent mothers and their infants. A recent announcement of the NYC Department of Health declared that the city's pregnancy rate has plunged by 27% in the last ten years; for girls between the ages of 15 to 19, 72.6 per 1000 girls became pregnant in 2010 compared to 98.8/1000 in 2001. Sexual activity also dropped by 26%, from 59.9% to 37.8%. More girls

were using oral or other types of long term contraception methods at last sex, from 17.3% in 2009 to 26.9% in 2011 (no details were provided in terms of how these numbers were measured). NYC Health Department Commissioner Farley stated, “Two things are happening here—teens are using more contraceptives and they’re also delaying sexual activity.”

However, the disparities in pregnancy rates are still wide, with poorer communities experiencing higher pregnancy rates (Durkin, 2013). Contributing to this effort is the NYC Department of Health and Mental Hygiene’s support of 126 SBHCs where contraception, including Emergency Contraception was widely available (www.schools.nyc.gov). The NYC Department of Health and Mental Hygiene launched a new initiative where it partners with 39 of these SBHCs to distribute contraceptives, encourage HIV/STD testing, provide technical assistance and develop protocols at a large number of SBHCs (Fisher, 2012). The project’s goal is to further reduce unintended teen pregnancy in partnering NYC high schools with SBHCs to:

- Standardize, increase access to, and assure the quality of sexual and reproductive health services provided in SBHCs serving NYC public high schools;
- Provide training and technical assistance;
- Provide reimbursement for contraceptive and pregnancy test supplies to participating SBHCs.

Preliminary evaluation results of this project suggest a positive impact.

Barriers to accessing contraceptive services at SBHCs still exist. Today, 49.8% of SBHCs (n=1087) are prohibited from dispensing contraception (Lofink et al., 2013).

Universal availability of SBHC contraceptive technology could decrease pregnancy rates,

though it may take time, further advocacy, and a change in political climate. A significant methodological issue of SBHC reproductive health studies in terms of pregnancy outcomes is the need to link data about access to contraception and pregnancy outcome data. Expanded and consistent use of electronic medical records as in the case of New York City reported above is one way that this issue could be overcome. Further research is still needed to determine the best way to decrease pregnancy rates in this population, and in particular, how to deal with racial and ethnic disparities that still exist.

Studies of Mental Health

The President's New Freedom Commission on Mental Health recommended the improvement and expansion of school mental health programs and screening (Weist, Rubin, Moore, Adelsheim, & Wrobel, 2007). Fisher et al. (1992) found that SBHCs can treat a wide range of conditions with mental health constituting a substantial (14%) number of visits. Psycho-social characteristics of this study's youth population found them to be at very highest risk. Only 27% of the youth lived with both biological parents, 55% were foreign born, 37% repeated at least one grade, 44% were sexually active, 13% drank alcohol, and 14% had past or present suicidal ideation. The need for prevention in the area of mental health in this high risk population is obvious.

One study that looked at use patterns of eight elementary and middle schools with SBHCs in Ohio and Kentucky found increasing numbers of mental health visits, from 1% in the first year to almost 22% of visits in year three of the study (Wade et al., 2008). SBHCs can play a unique role in providing mental health services to otherwise hard to reach populations.

Juszczak, Melinkovich and Kaplan (2003) used a retrospective cohort design to assess how SBHCs facilitated access to care among low income adolescents and the extent to which SBHCs and a community health center network provide similar or complementary care. Reasons for visits to SBHCs were for medical services 66% ($p < .001$) and mental health visits (34%, $p < .001$) and at CHN medical services 97% ($p < .001$). Their findings in the area of mental health were of particular significance. Adolescents were 21 times more likely to access mental health visits than at community health clinics, though mental health services were available at all sites in the study. Researchers posit factors that may have contributed to this use of services as the following: improved problem identification, enhanced availability, and practice and personality characteristics utilized in the SBHC model (Juszczak et al., 2003, p. 115). This study made a strong case for the ability of SBHCs to provide mental health services that adolescents will use.

In addition to medical and mental health services, SBHCs increase use of substance abuse services, as students can see onsite substance abuse counselors (Anglin, Naylor, & Kaplan, 1996). When a sample of 240 SBHC student users was compared to Kaiser Permanente of Colorado (KPC) users, a managed care organization, 31% of SBHC users used mental health services, and 8% used substance abuse services, compared with only 3% of KPC clients who made visits for mental health or substance abuse. Adolescents with access to a SBHC were 10 times more likely to make a mental health or substance abuse visit at a SBHC ($p < 0.001$) (Kaplan et al., 1998). These classic studies again demonstrated that students used substance abuse services at a SBHC when they were provided onsite.

SBHC programs increased the proportion of K-8 students who received mental health services and may improve the pediatric psycho-social quality of life in a comparison study of four SBHC intervention sites and two non-SBHC districts in Ohio (Guo, Wade, & Keller, 2008). After the SBHC program was implemented, mental health services increased 5.6% ($p < .0001$) for urban students and 5.9% ($p < 0.0001$) for rural students, compared with increases of 2.6% ($p < 0.1023$) and 0.2% ($p = 0.936$) for students who did not use SBHCs. Improvements in health related quality of life (HRQOL) for SBHC students increased when compared with non SBHC schools though only some were statistically significant. SBHCs increase access to mental health services, and may increase health related quality of life.

Studies of Academic Outcomes and Youth Engagement

A more recent and less developed area of research has been a focus on SBHC users to determine if center use can impact academic achievement (Geierstanger et al., 2004; Van Cura, 2010). Some studies examine the process of engaging youth in the research process itself (Mandel & Qazilbash, 2005; Soleimanpour, Brindis, Geierstanger, Kandawalla, & Kurlaender, 2008; Suleiman, Soleimanpour, & London, 2006). Involving students in creation of social change and in the research process has the potential to help to empower youth, as well as improving the services provided by youth-serving organizations, in particular in SBHCs (Suleiman et al., 2006). In a community based participatory research study, researchers partnered with a youth training agency to involve youth in the regular evaluation conducted by the Alameda County SBHC Coalition. Students received training in health research, evaluation, leadership and public speaking. As a result of the project, a condom distribution policy was changed to allow onsite dispensing of condoms at two

SBHCs. Health education and condoms were made available district-wide through the centers. In addition, the project resulted in the formation of a statewide Peer Advocate Program, sustained by the Alameda County SBHC Coalition (Soleimanpour et al., 2008).

In a review article that analyzed studies looking at SBHCs and their relationship to academic achievement, researchers examined seven experimental or quasi-experimental studies (Geierstanger et al., 2004). Six studies found a positive relationship between the presence or use of a SBHC and at least one of 13 academic indicators. Outcome indicators utilized were absence/attendance and tardiness (used in six/seven studies); promotion, withdrawal, dropout and graduation; disciplinary referrals; suspension rates; and other assorted academic indicators like test scores, GPA, educational motivation, receipt of failing grades and program participation (Geierstanger et al., 2004).

Building on the work of Geierstanger et al. (2004), Walker, Kerns, Lyon, Bruns, & Cosgrove (2010) examined: (1) the effects of SBHC use on academic outcomes for high school students using a longitudinal model; and (2) whether SBHC use of medical and mental health service impacted academic outcomes differently. Outcomes used were attendance, discipline referrals, and grade point average (GPA). This retrospective study used linked school district and SBHC database for all youth enrolled in the Seattle school district from September 2005 through January 2008. The study focused on a cohort of 9th graders (N=2306). Results were that SBHC use was significantly associated with GPA and attendance gains. Use of medical services was most strongly associated with increases in attendance, while the use of mental health services was more strongly associated with increases in GPA. Discipline incidents were not associated with SBHC use. Differential

findings among sub-groups (medical vs. mental health) supported earlier research that use of medical services for treatment of chronic disease could decrease the use of ED visits and inpatient services, and thus, improved attendance. Students receiving mental health services may experience outcomes directly related to their ability to do better academically (Walker, Kerns, Lyon, Bruns, & Cosgrove, 2010).

Kerns et al. (2011) examined high school student SBHC use and its association with high school dropout. A quasi experimental longitudinal analysis of a retrospective student cohort, this study also used an integrated database for an urban public school district to track academic outcomes and a department of public health to track SBHC use. The sample included 3334 students in 9th grade, followed to 12th grade through their anticipated graduation date. Students were divided into never used, low use, moderate use and high use. And an academic outcome variable was defined as school dropout. SBHC use was associated with a 33% decrease in dropout compared with non-users, and high use was not significantly related to drop out. Users who dropped out were estimated to dropout about one semester later than non-users. Further research is needed to understand the SBHC use for highest risk students and relationship to dropout (Kerns et al., 2011).

A quasi experimental study in Western New York of 764 urban high school students compared rates of early dismissal and loss of 'seat time' (the time students are available in school to learn or to access services) between two groups of students--students who received a combination of SBHC services and traditional nursing services with students using traditional school nursing services only. Early dismissals of students in the first group (SBHC services and nursing services) were significantly reduced when compared with

students in the second group ($p=0.013$). Students not receiving SBHC services lost three times as much 'seat time' as SBHC users. Race, gender, age, poverty status and presence of a pre-existing condition did not influence these findings ((Van Cura, 2010).

Geierstanger et al. (2004) summarized the methodological issues related to conducting research in the area of SBHC and academic achievement. Access to high quality data that can link SBHC use and academic measures is a significant hurdle when conducting this type of research. Another issue is the use of a rigorous research design with outcomes are measured longitudinally. When outcomes are compared using a cross-sectional design, long term effects of intervention effects are not accurately evaluated long term. Student mobility further complicates measurement issues, as in low income communities, students move in and out of schools. Researchers need to define the intervention; i.e. SBHCs vary in scope of services and organization, as well as what constitutes exposure to the intervention. Lastly, researchers need to define outcome measures precisely; i.e. what constitutes an absence? (Geierstanger et al, 2004, p. 349-50).

Though several studies looked at attitudes of students who use SBHCs (Balassone Bell & Peterfreund, 1991; Santelli et al., 1996), few studies documented substantive involvement of students in the planning, design and/or ongoing operations of center programming, or detail student users' self reflections on such topics as their reasons for accessing care, their experiences of health center use, relationships with caring adults, influences of peers regarding SBHC use, and how the environment may be adapted to draw more users. Conducting more studies that directly involve youth in the creation and

governance of SBHCs is one area for additional research. Understanding the needs, experiences and outcomes of youth using SBHCs is another fruitful area for future inquiry.

Health Care Reform and the Future for SBHCs: Policy and Research Implications

On March 21, 2010, the U.S. Congress passed The Patient Protection and Affordable Care Act (PPACA). President Obama signed the bill into law on March 23, 2010 (Stolberg & Pear, 2010). The PPACA included two SBHC provisions: a \$200 million appropriation for SBHCs' construction and equipment needs and an authorization for an SBHC grant program for operations but no appropriation. The School Based Health Alliance and its partners continue to advocate for a necessary federal appropriation. The appropriation will allow centers to purchase essential equipment and build additional space or renovate existing space to expand capacity to serve greater numbers of students with additional programs.

Despite an additional \$80 million appropriation in 2012, critical policy issues facing SBHCs remain. The principal issue facing this model is its long term sustainability. Because of decreases in revenue from states and private foundations, some SBHCs are experiencing layoffs and hiring freezes. They are not mandated providers under federal regulations despite providing services to Medicaid and SCHIP covered children (Lear, 2007; www.sbh4all.org). Their recognition as medical homes is another ongoing policy issue. Political attacks over the provision of reproductive health and contraception to youth continue. Finally, SBHCs must find ways to achieve integration into the new health care reform model of care (Lear, 2008).

This chapter suggests that SBHCs demonstrate potential as a model of care that enhance the outcomes of the most vulnerable adolescents. A strong case exists that SBHCs have the potential to increase utilization and access to health care services for urban and rural adolescents. This finding is important because of the underlying issues youth must address in order to reduce their engagement in risky behaviors, and deal with underlying mental health and substance issues. These behaviors may be discovered by the use of effective screening and risk assessment implemented in SBHCs. SBHCs have the potential to function as sources of ongoing primary care for adolescents, but they serve far too few users at this time to realistically deal with the pressing need for these services for the adolescent population. SBHCs appear to have the potential to manage chronic diseases by preventing hospitalizations and ED visits. Effective asthma interventions implemented in SBHCs could potentially be adapted for widespread implementation in a greater number of schools without SBHCs nationwide (Keeton, et al., 2013). The issue of teen pregnancy remains one that has been difficult to impact, even by SBHCs. Despite condom and other contraceptive method distribution in some schools, teen pregnancy remains a troubling concern. The politics of condom distribution will not disappear any time soon. SBHCs should continue their use of standardized comprehensive reproductive health curricula and ongoing youth development interventions. These interventions can educate youth about the specifics of reproductive issues, and of equal importance, provide them with a vision of a healthier future. Rigorous evaluation should accompany this program implementation, with special emphasis on engaging youth in program design and evaluations.

Conclusion

In order to demonstrate the cost effectiveness, impact on the health of youth health and their educational outcomes, efficacy as both a safety net and culturally appropriate provider, a need for more research exists. The majority of studies reviewed for this paper were descriptive or correlational in design, with few multivariate analyses. Most lack any theoretical foundation, and may use small sample sizes and self-reports without another source to triangulate data. The field of SBHC research is just beginning to more consistently use quasi experimental designs and linked data sets. Researchers need to find ways to use data systems that can link SBHC outcomes with academic outcomes like school dropout, and a variety of health outcomes, selecting consistently defined measures. With the current emphasis on electronic medical record development in the health industry, greater potential for such research exists. In addition, if the SBHC itself is viewed as the intervention, more research is needed which precisely defines effectiveness, both in terms of chronic conditions and other health outcomes. Standardization of core SBHC services and staffing can help to establish the intensity of the intervention with consistency, so that comparisons between SBHCs are more accurate. A handful of qualitative or mixed method studies can be found in the current literature. Since much of the SBHC research relies on self-reports, collecting qualitative data to triangulate findings could be illuminating.

And what exactly happens inside the black box of a SBHC from the perspective of its users? How can researchers partner with providers and youth to improve programming, so more students will take advantage of the SBHC resources to further improve health outcomes? What are the best ways to involve student users and their families in the process

of shaping both service delivery and advocacy, so that students build skills and prepare for the future? In particular, highlighting positive outcomes using qualitative evidence is a powerful method of communicating the unique role of SBHCs (Geierstanger et al., 2004).

Implications for Nursing Practice

Freudenberg and Ruglis (2007) discussed understanding school dropout as a public health issue. They asserted, “Education is one of the strongest predictors of health: the more schooling people have the better their health is likely to be” (p. 1). Nationwide, 70.6% of students graduate from high school. Youth who are Native American, African American, and Latinos all have graduation rates of 50%. The lowest graduation rates are found in urban centers (Ruglis & Freudenberg, 2010). These public health professionals call for the development, implementation and evaluation of health interventions that can improve school completion rates. This process would also involve the development of coordinated health/educational research efforts.

They identified school-based health centers as one specific intervention that can improve the health and well-being of adolescents, and therefore may contribute to school completion rates. These public health researchers recognized SBHCs as contributing to the goal of decreasing dropout rates by their ability to provide primary and preventive health care; referrals; assistance in finding insurance and health care for families; reproductive health services; and mental health services. This future research and practice agenda presents a major challenge for public health nursing professionals.

In order to expand support for the SBHC model, clients and their communities need allies. In a recent column, (Flaskerud & Winslow, 2010), the authors asked the question

“Who has the ultimate responsibility for the well-being of the most vulnerable among us? “ (p. 298). In the current period of state budget cutting, major economic crisis, and serious international conflicts, this question is as timely as ever. Flaskerud and Winslow’s model (1998) proposed relationships between three constructs: resource availability, relative risk, and health status. Put simply, the model means the more resources a person has, the more likely she/he is to be able to decrease risk and experience better health outcomes, as well as the opposite-- people without resources experience greater exposure to risk and experience worse health outcomes. One way nurses can express their commitment to social justice and advocacy for the most vulnerable is to work in and advocate for models of care that facilitate increased availability of resources. As public health nurses, as we care for most vulnerable, in alignment with the needs of their communities, and building alliances with a broad base of providers—we express our commitment to a vision of social justice.

CHAPTER 3
METHODOLOGY

Research Design

This study used a case study design and employed multiple methods of data collection, including (1) interviews with the providers, staff and historians of the center and (2) review of documents and descriptive epidemiologic data available about the school and surrounding community since the inception of the health center and (3) limited observations of the health center. An adaptation of Bronfenbrenner's ecological model of multiple influencers as the theoretical framework guided interview questions and data analysis in this study. The specific aims of the study were (1) To explore how a mature SBHC functioned to impact the health and well-being of adolescents; and (2) To explore how providers in a mature SBHC perceived its effect on the health and well-being of adolescent users.

Design

Case study research allows the investigator to explore a bounded system (i.e. a single SBHC) in depth within its real life context by examining its social processes over time, employing detailed in depth data collection and using multiple sources of information (Stake, 1991; Yin, 2009). Multiple sources may include documents, interviews, observations and artifacts (Creswell, 2007). Case study research seeks to understand what is unique and complex about a particular case, including its embeddedness in its particular context (Stake, 1991). Context may include historical, cultural and physical spaces. Also of interest may be social economic, political, ethical and aesthetic contexts (Stake, in Denzin and Lincoln, 2005). This methodology can contribute to nursing sciences through its: (1) use of a multi-

perspective analysis; (2) ability to give voice to the voiceless; (2) holistic understanding of phenomena not easily accomplished through other methods; and (3) contextualization of phenomena in real life context, aligning with nursing's concern for human relationships (Anthony & Jack, 2009). The results of studies using case study methodology can lead to an understanding of how an organization or program like a school-based health center will inform future interventions and generate ideas for policy development.

This case study used a combination of Stake's approach and Yin's more recent approaches to case study design and methods (Yin, 2009). Stake's approach emphasizes a commitment to interpretation; organization around issues, use of stories, the need for validation (triangulation), and aims toward naturalistic generalization, so that readers can make some generalization based on their own personal experiences (Stake, 1995, 2010; Stake, in Lincoln & Denzin, 2005). A constructive paradigm, which rejects the notion that there is only one way to see and understand the world, underlies Stake's case study methodology, supporting the need to consider the case's multiple realities. The voices of the all the actors involved in the case and their interactions must be considered (Stake, 1995; Tellis, 1997). Using Stake's approach, the case's issues are identified and utilized to create a study's structure, (or framework) attempting to focus attention on the complexity of the case and its context. The researcher identifies issues that focus on the problems and concerns of the case. "Issues are not information questions," but ...the themes or questions of the case. "Researchers ask what can be learned here that a reader needs to know?" (Stake, in Lincoln & Denzin, 2005, p. 448-9). Stake also discusses the idea of "context." Because a case is located in a complex environment, historical context is almost always of significance, and so

are cultural and physical contexts. The researcher may also study social, economic, political, ethical and esthetic issues (Stake, in Lincoln & Denzin, 2005, p. 449).

Building on Stake's naturalistic approach, Yin develops a taxonomy of types of case study designs, as these designs have not been significantly codified in the past (Yin, 2009).

Yin differentiates the types of case study into three types, explanatory, exploratory and descriptive:

- Explanatory: used to answer a question that wishes to explain the links in a real-life intervention too complex for an experimental design i.e. explanations link program implementation with effects;
- Exploratory: used to explore a situation in which the intervention evaluated has no clear, single set of outcomes;
- Descriptive: used to describe an intervention/phenomenon in its real life context. (Baxter & Jack, 2008; Yin, 2003)

Case study methodology can involve single or multiple case designs. Multiple case study design is used as replication strategy i.e. additional cases are selected to predict results similar to the first case or to predict contrasting results. Multiple case study design has advantages and disadvantages. Its major advantage is that it offers the potential for analysis within and across case settings, to either predict similar resultants or contrasting results, it is considered more robust and reliable. Yin analogizes the single case study to a single experiment, and the multiple case study to the replication of the single experiment. Its major disadvantage is the requirement of extensive time and resources (Yin, 2009). A single case study looks at a single system or program, and can be utilized when the case purpose meets one of five rationales: (1) a critical case for testing a well formulated theory; (2) an extreme or unique case; (3) a representative or typical case; (4) a revelatory case; and (5) a longitudinal case—the same case at several points in time (Yin, 2009). The proposed case

study is an exploratory descriptive case study, one in which the program, the school-based health center model, has no clear single set of outcomes, and the researcher seeks to describe the phenomenon in a real life context in which it occurs (Yin, 2003 in Baxter & Jack, 2008). Identified case issues included how adolescents access health care; characteristics of adolescent friendly services and providers; effect of accessing SBHC services on overall adolescent health and well-being; characteristics of a model of care for adolescent populations (screening, primary prevention, primary care).

The case proposed in this dissertation most closely meets the unique or revelatory case rationale (Yin, 2009, p. 48-9). This mature school-based health center has been in existence for 17 years, three of the providers have worked at the center during its entire existence. It presented the researcher with the opportunity to investigate the development and operations of this center over time from the actors themselves. This initial study in a planned program of research was appropriate for a dissertation effort. Subsequent studies in a trajectory of research can include emphasis on experiences of youth participants in the health center, and comparative studies of other SBHC cases. This study and its methodology addressed a gap in the literature, namely a lack of descriptive qualitative data focusing on school-based health centers. Limited research has been conducted investigating a mature school base health center using a holistic qualitative case study approach, further supporting the appropriateness and need for this research study (Dryfoos et al., 1996, p. 218; Geisterstanger, et al., 2004).

This case study was a single case with embedded units. This design allowed the researcher to look at subunits that were situated within a larger case; for example the SBHC

sat inside a school, and this school was located within in a larger community. Both the school and the SBHC had a set of actors (sub-units). The school-based health center providers and community historians were interviewed for this initial study in the researcher's program of research. One advantage of this single case design is that it allowed the researcher to analyze data within the subunit and then across subunits i.e. to the case as a whole. The ability to conduct this rich analysis is one of the strengths of this type of design (Baxter & Jack, 2008). In subsequent studies in this program of research, this study's data can be utilized for additional analysis, analyzing with and across additional sub-units.

This diagram also illustrates the unit of analysis in the study and depicts its boundaries; a case is defined as a phenomenon in a bounded context; the case is the unit of analysis (Miles & Huberman, 1994). The focus of this case is how providers in the SBHC perceived its effect on the health and well-being of adolescent users. These perceptions are contextualized, by the historical, developmental, social, economic, political, ethical and even esthetic issues experienced by these human beings over time, place and activities. This study collected limited historical data to contextualize the case. Figure 1 illustrates a single case study of a SBHC.

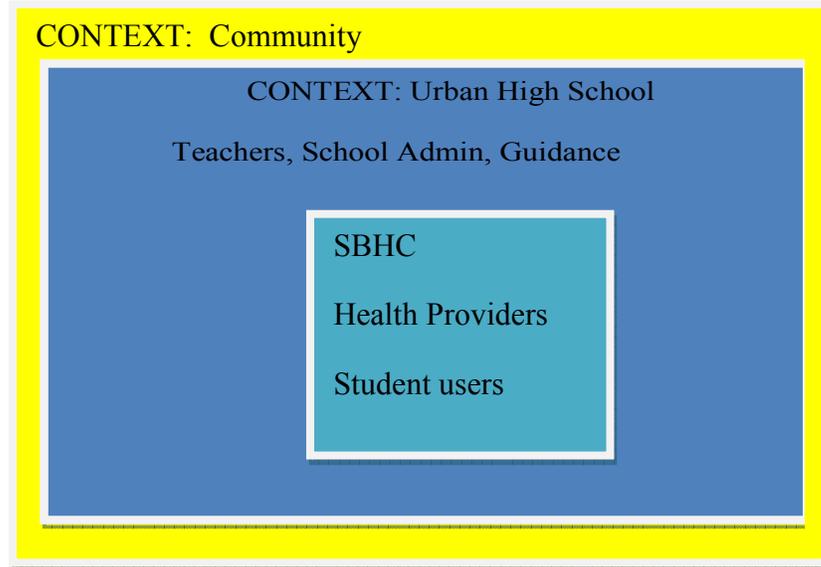


Figure 1: Diagram of a Single Case with Embedded Units

Theoretical Framework

An ecological model of health, first developed by Bronfenbrenner (1979) guided this case study. An ecological approach takes into account the contextual factors contributing to adolescent health, both individual and environmental risk factors and protective factors. Bronfenbrenner's ecological systems theory provides a widely accepted explanation of the impact of environment on children and adolescents and suggests that a child's development is affected by multiple layers of influencers (Lohrmann, 2010). These factors may include: (1) macro level environmental factors, such as poverty, discrimination and structured inequality; (2) proximal level environmental factors, including family, peers, neighborhoods, and schools; and (3) individual level factors of biology and personality traits, and temperament (Crosby et al., 2009).

Figure 2 (below) depicts the application of an ecological model to the process of a SBHC and its potential influences on the health outcomes of at-risk adolescents. The major assumption of an ecological model is that if adolescent protective factors are increased, risk behaviors potentially will decrease.

Though the proposed model includes individual personality factors, as well as environmental risk factors, the emphasis in this study is to examine how a school-based health center influences environmental risk and protective factors. These factors, to the degree that they may be linked to macro environmental risk factors, will also be considered.

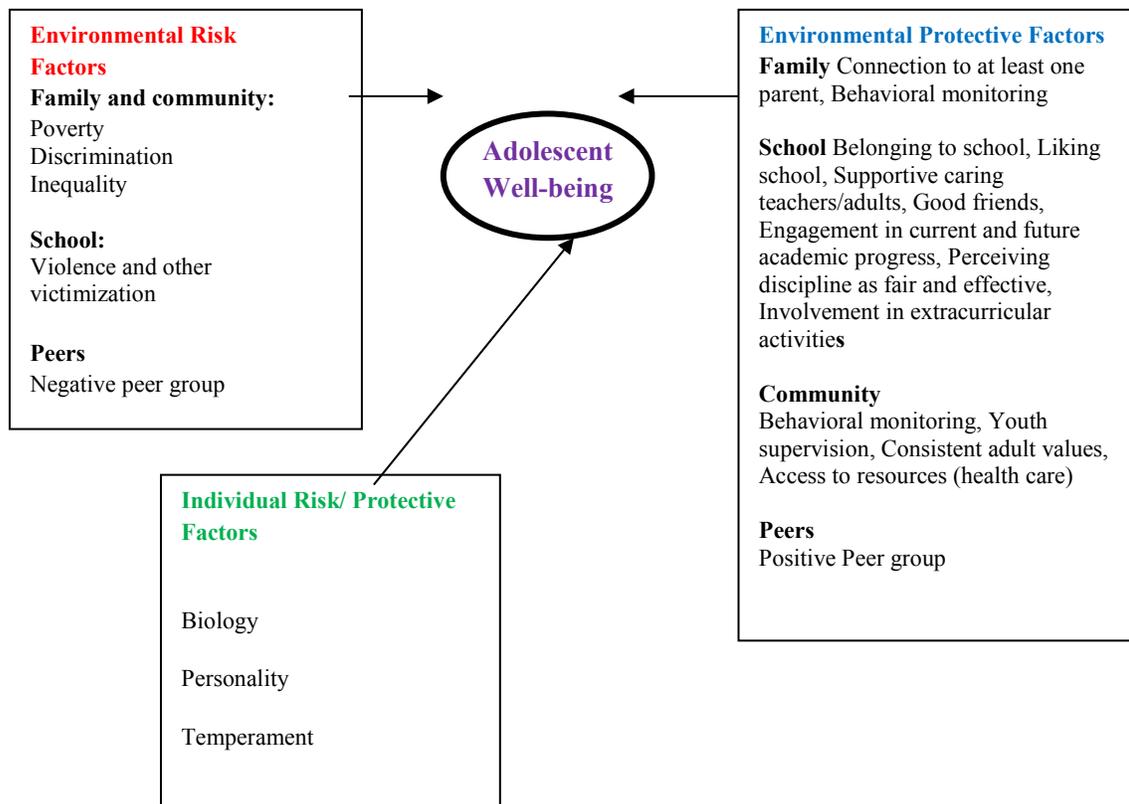


Figure 2. Proposed Ecological Model of Influence of a SBHC on the Lives of Urban Adolescents (Adapted from Blum & Blum, 2009; Bronfenbrenner, 1979)

An ecological model of health is an ideal way to organize the study and discussion of SBHC utilization impact on adolescent health outcomes (Bronfenbrenner, 1979), especially in light of the case study's emphasis on contextuality. The SBHC model is an example of an ecological intervention. SBHCs alter the school environment in two major ways. First, they create an environment within the school that supports positive youth development, and second, by offering wellness, health promotion and advocacy activities to increase protective factors among adolescents. Increasing protective factors (i.e. conditions that enhance an individual's ability to avoid risk/hazard) is an effective strategy to achieve positive long-term health and educational outcomes among low income urban adolescents (Park et al., 2008; NRC& IOM, 2009).

Use of a theoretical framework in this study was congruent with Yin's notion of linking theoretical propositions to interview guides and data analysis. Propositions (or hypotheses) direct attention to issues that should be examined in the course of the study (Yin, 2009, p. 28). These propositions may be guided by an existing theory, and also serve as a method for data analysis as the data is linked to the propositions. The approach to generating the propositions for this study flowed from the literature review that described how school-based health centers impact access to care, risk behaviors, client population and provider characteristics, etc. This literature, Bronfenbrenner's ecological approach to youth development, and an adaptation of Blum and Blum's conceptual model of adolescent resilience led to proposed model (fig. 2) of the theoretical guide for this research (Blum & Blum, 2009; Bronfenbrenner, 1979). Theoretical constructs used in the study will guide the

creation of the interview guides, and predetermine initial codes for analysis of the interview data.

The proposed model for this study posited an ecological theory; i.e. that multiple risk/protective factors interact to impact youth development (Bronfenbrenner, 1979). This study explored this notion by looking at how a SBHC created an environment for frequent users that had the potential to mitigate adolescent risk, by providing access to necessary services by youth friendly providers. This proposition was utilized to both create the interview guide and data analysis. To explore this element of the theoretical constructs, the researcher created a set of questions that explored this content, and an associated coding system to analyze the responses. The researcher assumed that during the analysis additional codes would emerge from the data that were not described by the initial coding guide. The coding system was used to organize the data that described provider experiences across the interviews. This data organization focused on a core element of the model. By clearly linking propositions to interview guides to coding schemes, the study addressed the constructs of access, adolescent friendly services, connection to a caring adult, and risk/protective factors, and associated contextual factors of poverty, discrimination and inequality. The researcher discussed how and why a mature school health center benefitted youth from the perspective of the providers themselves.

Research Site

The site for this research was a well-developed high school-based health center, in existence for over 17 years. It was located in a suburban community near a major Midwestern city. This center was selected due to its easy access, uniqueness, experienced

providers, longevity of existence, range of services, substantial parental consent for services, and integration of the center into the school, as evidenced by teacher/guidance counselor referrals. The site supervisor expressed enthusiasm at the opportunity to have this researcher conduct a case study. Stake encourages the primary selection criteria for a case as one that maximizes the researcher's ability to learn about her research questions; other considerations are a case that is easy to gain entry and one where key actors are willing to comment on draft materials (Stake, 1995). These elements were all present in this case.

Compared to many more limited centers, this one provided the full complement of SBHC services and referrals: comprehensive primary care (pediatricians and nurse practitioners), mental health counseling and referrals, substance abuse counseling and referrals, health education, youth development, onsite reproductive health (including dispensing of contraceptives) services, and health professionals training. It also provided acupuncture services. In contrast, many centers are staffed more minimally, with a nurse practitioner working with physician collaboration, a part time social worker/mental health counselor and a nurse. Thus, in terms of the range of services and service providers, this SBHC provided a high level of expert care and comprehensive adolescent health treatment.

The student population of the school exemplified a diverse population with a significant group of students experiencing social factors like poverty, minority status, discrimination that increases their potential for risk when compared to other youth. As of 2010-11, 3060 students were enrolled at this high school, 28.4% were low income students and 2.3% limited English learners. The ethnic breakdown of the student population includes

16.6% Hispanic, 42.2% Caucasian, 33.2% African American, 3.6% Asian, 0.5% American Indian and 3.9% two or more races.

Study Sample

The study population consisted of all the SBHC providers and staff. A second set of interviews were conducted with four historians and an additional group interview with the three long term providers. Providers in this health center included three family nurse practitioners, three part time pediatricians, one public health nurse, two social workers and an acupuncturist. A secretary/receptionist who worked at the center was interviewed as she played a key role of gatekeeper/first contact for the center. One of the physicians, two nurse practitioners and the secretary have worked at the center since its founding in 1996. One of the nurse practitioners is the site supervisor and has been in that role the entire existence of the center. Historian interviews were conducted with the following: the health department director/community advisory board member, the former district superintendent/founder, and a parent/founder of the center and town mayor (former local school board member). These individuals provided historical background about the formation and development of the center over time.

Procedures

Consistent with case study methodology, this study will utilize multiple methods of data collection, including: (1) interviews with the providers, staff and historians of the center; (2) review of documents and descriptive epidemiologic data available about the school and surrounding community since the inception of the health center; and (3) observation of school health center day to day functions.

Interviews: Sample selection and recruitment. One of the major differences between qualitative and quantitative research is that qualitative sampling is usually purposive, and quantitative research employs some sort of probability sampling (Patton, 1990; Polit and Beck, 2006). The ultimate goal of purposeful sampling is to obtain participants with experiences deemed information-rich for the purposes of study. Different kinds of qualitative studies require different sample sizes; the obligation of the researcher is to defend her sampling strategies as reasonable for the study's purposes (Sandelowski, 2000). Within-case sampling has three aspects: it focuses on activities, processes, events, times, locations, and role partners, is theoretically driven, and has an iterative or 'rolling' quality, and works in waves as the study progresses (Miles & Huberman, 1994, p. 29).

The researcher discussed the proposed study with the site supervisor and she agreed to introduce the study in a discussion with the rest of the staff to obtain their buy-in. The researcher offered to visit a staff meeting to further discuss the study and what it would mean in terms of staff time commitment, etc. to conduct the study, but this activity was unnecessary. The providers were individually contacted by email to invite them to participate in the research study. A time and place were scheduled for interviews for each provider and staff who agreed to participate so that patient care was minimally disrupted. Historians were contacted by email to request their participation. An interview time and place were mutually agreed upon.

An email describing the content areas to be covered in the interviews was sent to each participant prior to the interview to allow time to think about their answers prior to the interview questions (Appendix A and B). In addition, a short demographic survey to collect

basic identifying data (age, ethnicity, sex, socio-economic background, educational preparation, number of years working in school-based health center) was included in the email, to understand how some of the ecological factors of providers influence their own engagement in the center (Appendix C).

Interview process. Provider interviews were conducted in a private room scheduled for that purpose in the school or health center. Historian interviews were conducted at a mutually agreed upon time and place. The purpose of this study and the interview were reviewed with the participant again prior to the interview, and she/he were given an information sheet (Appendix D) explaining the details of the study and a copy of the conceptual model (Appendix D). Participants were asked to sign a consent form (Appendix E). These documents were approved by the UMKC SSIRB.

Interview questions (Appendix F) were based on the theoretical constructs of proposed ecological model and topics found in the literature on SBHCs. Topics included how the health center functioned in terms of processes of care, student user access to care and ongoing care connections, staff interactions and teamwork, their reasons for working in this center, their connections to youth at the school, how the school-based health center impacts outcomes of students such as control of chronic disease, management of behavioral health and family challenges, and academic issues. Additional topics establishing the historical context of this SBHC were addressed as appropriate. At the conclusion of the initial interview, each participant was asked permission to be contacted if further questions or need for clarification arose. The researcher conducted one interview per participant. The interview guide was piloted with an experienced school based health center provider outside

of the study sample and it was also reviewed by a set of expert providers and other SBHC experts for feedback.

Document review. The researcher reviewed relevant historical documents such as the mission statement, the original funding application, awards, map of the school and other relevant documents, in order to better understand the workings and processes of the health center. The researcher reviewed existing epidemiologic data describing the health center's utilization, the school's population, and the community for case context. The researcher also reviewed historical documents including newspaper articles, awards, etc. as they illuminated the SBHC's context and history.

Observations. Observational notes will be collected by the researcher at the health center. Descriptions of informants, the physical setting, particular events and activities, as well as the researcher's own responses are categories of observations for this study (Creswell, 2007). Photos of the physical setting without students or staff will be taken using a digital camera. Field notes will be written up immediately following observations.

Data Analysis Plan

Data analysis followed the qualitative procedures as discussed above (Miles & Huberman 1994; Yin, 2009). The initial analysis strategy was guided by Yin's approach of relying on theoretical propositions (Yin, 2009, p. 130). The major proposition for this data analysis was that a SBHC is a multilevel intervention that had the potential to create relationships, an environment, and interventions that could positively impact adolescent risk.

For example, all mentions of access or positive relationships with caring adults could be identified in questions that probed for this construct, or in other parts of the interview.

All interview data was professionally transcribed and then reviewed by the researcher to guarantee the accuracy of the transcriptions. Listening and reviewing the interviews is a form of data analysis (Miles & Huberman, 1994). The transcribed individual participant interviews were coded by hand. The historian interviews were reviewed and the researcher took notes on them. Providers' transcripts were re-organized by interview question. This reorganization allowed the researcher to code the provider interviews by question as well as by participant, so that responses to the interviews could be viewed individually and across participants. These activities allowed the researcher to take notes on major events in the interviews and check to see if the initial coding system (i.e. codes laid out by the proposition and conceptual framework) fit the data or needed to be further developed. The reorganization allowed for thematic coding i.e key themes were marked in the interview text based on review of the literature or concepts discovered during data collection and analysis. This process resulted in the final first level coding using concepts taken from the conceptual framework.

Documents that were part of the data set were also reviewed and the researcher took notes on them. The researcher also created a set of notes and artifacts from fieldwork, such as pictures of the school and the SBHC that were referred to in the analysis. The inquiry process was documented using journaling and memoing, as well as keeping a research notebook of activities (Creswell & Miller, 2000; Merriam, 1995).

A second level coding was guided by simple pattern matching. Pattern Codes are:

...explanatory or inferential codes, ones that identify an emergent theme, configuration or explanation. They pull together a lot of material into a more meaningful and parsimonious unit of analysis. They are a sort of meta-code...Pattern coding is a way of grouping those summaries into smaller number of sets, themes or contracts. (Miles & Huberman, 1994, p. 69 in Saldana, 2009, p. 152)

Pattern Coding is appropriate for “the second cycle of coding after initial coding, for example; development of major themes from the data; the search for rules, causes and explanations in the data; examining social networks and pattern of human relationships; and the formation of theoretical constructs and processes” (Miles & Huberman, 1994, in Saldana, 2009, p. 152). As this was the first study in a program of research, the major focus of thematic coding was on SBHC providers. Once the researcher interpreted the data from the interviews and document reviews, member check was conducted with the provider staff on the findings from case.

CHAPTERS 4/5¹

FINDINGS

“No one is a stranger...” SBHCs connect youth to caring adults: A case study

Background / Significance

Adolescent Health Status in the United States

The population of U.S. adolescents has made little progress meeting the health objectives of the Healthy People 2010 (U. S. Department of Health and Human Services, 2005). As part of Healthy People 2010, a national consensus panel identified the following critical areas for adolescent health: mortality, unintentional injury, violence, mental health and substance use, reproductive health, and prevention of adult chronic disease. Of these, only reproductive health and prevention of chronic disease have demonstrated improvement (Park et al., 2008). In the area of reproductive health, overall, 68 pregnancies occurred per 1,000 women aged 15–19 in 2008. The 2008 rate was a record low and represented a 42% decline from the peak rate of 117 per 1,000, which occurred in 1990. But despite this decline, the U.S. teen pregnancy rate continues to be one of the highest in the developed world. It is more than twice as high as rates in Canada (28 per 1,000 women aged 15–19 in 2006) and Sweden (31 per 1,000) (Guttmacher Institute, 2012).

Poor adolescents have worse health outcomes, and lack access to medical services, including dental and mental health care (Newacheck et al., 2003). These poorer outcomes may be intensified among the most marginalized and disadvantaged groups, for example

¹ Chapters 4 and 5 are presented in the form of a manuscript that will be submitted to the journal *Public Health Nursing*.

among Lesbian gay bisexual and transgender (LGBT) persons, the homeless, and ethnic minority youth (Flaskerud, 1998). Adolescents access primary care less than any other age group, and often do not seek services even when they might benefit from care. When adolescents seek services, they tend to use acute or specialty care like reproductive health care, and do not obtain them from a regular primary care source (National Research Council [NRC] and Institutes of Medicine [IOM]), 2009).

Adolescents also experience one of the highest rates of under/uninsurance of all groups (Brindis & Sanghvi, 1997; NRC& IOM, 2009). Factors influencing access to care include health insurance, cost, difficulty navigating the health care system, concerns about confidentiality, lack of comprehensive services at a single location, and demographic factors such as age, gender and ethnicity (Brindis & Sanghvi 1997; Britto et al., 2001; Elser et al., 2006). Since high risk behaviors and the formation of adult habits are initiated during adolescence, improvements in health status and access to services assume particular importance (Crosby et al., 2009; Park et al., 2006). Current adolescent health status , insurance status, inability to gain access to health services are factors that strongly suggest the need for a different model of care for this population.

School Based Health Centers and Adolescent Risk

School-based health centers (SBHCs) are a health resource that provide a full range of age appropriate services, including primary care, mental health care, family outreach, and chronic illness management, without concern for the students' ability to pay and located in a school or on school grounds. SBHCs increase access to care for adolescents, and they reduce barriers to utilization of health services, especially for those adolescents who are

underserved, low income and face complex social and environmental risk (Allison, et al., 2007; Gibson, Santelli, Minquez, Lord, & Schuyler, 2013; Guo et al., 2010; Juszczak et al., 2003; Kaplan et al., 1999; Santelli, Morreale, Wigton, & Grason, 1996; Crespo & Shaler 2000). School based health centers can manage chronic diseases like asthma, the most common chronic disease in children, by decreasing emergency room visits and hospitalizations (Guo et al., 2005; Lurie, Bauer & Brady, 2001; Mansour, Rose, Toole, Luzader & Atherton, 2008). In an expanded model, SBHCs offer risk assessment, outreach, health promotion and health education and are more likely to screen for and provide counseling about high risk behaviors than community health centers (Gustafson, 2005; Klein et al., 2007).

Perhaps most importantly, SBHC provide critical mental health interventions for depression, suicide, and other serious mental health conditions as they integrate mental health into a system of care for this population and reduce risk behaviors (Broussard, Brown, Hutchinson, & Chrestman, 2012; Juszczak et al., 2003; Soleimanpour et al., 2010) .

An emerging area of study is the relationship of SBHCs and academic achievement. This area of study is related to growing pressure on schools to demonstrate outcomes as a result of the passage of the federal No Child Left Behind Act (2001). This federal legislation emphasized standards and measurement of individual student achievement (Keeton et al., 2012). Geierstanger et al. (2004) identified a number of methodological issues in this area of research including the following: accessing high quality data, employment of a rigorous research design, definition of the intervention and the intensity of exposure, generalization of the treatment effects to different student groups, and selection

and definition of the outcome measure(s). They suggest that SBHCs and other health programs can improve a number of intermediate outcomes that influence student performance; school connectedness is one of these intermediate outcomes.

Ecological Model: Decrease Risk and Enhance Protective Factors

An ecological model of health provides a useful perspective to understand adolescent health. First developed by Bronfenbrenner (1979), an ecological approach takes into account the contextual factors contributing to adolescent health, both individual and environmental risk factors and protective factors. An adaptation of Bronfenbrenner's ecological model of multiple influencers as the theoretical framework guided interview questions and data analysis in the study.

School connectedness, “the belief by students that adults in the school care about their learning and about them as individuals” is considered a significant environmental protective factor for youth, as well as a contributor to academic achievement (Blum & Libby, 2004, p.231; Freudenberg, & Ruglis, 2007). Students are more likely to demonstrate healthy behaviors and academic achievement when they feel connected to school (CDC, 2009). Resnick et al (1997) found that parent-family and school connectedness was protective of seven of eight adolescent risk behaviors--areas were assessed: emotional distress; suicidal thoughts and behaviors; violence; use of 3 substances (cigarettes, alcohol, and marijuana); and 2 types of sexual behaviors (age of sexual debut and pregnancy history). Parent-family connectedness and perceived school connectedness were protective against every health risk behavior measure except history of pregnancy (Resnick, et al., 1997). According to the

Center for Disease Control and Prevention, one factor that can increase school connectedness is adult support (CDC, 2009).

Bowlby's (1980) attachment theory described one of the most important theories depicting the power of connectedness (Bernat & Resnick &, 2009). Attachment theory illuminates the basic process of child parent attachment, and then how children form connectedness to others. One study recently found a strong relationship between student reports of SBHC use and caring relationships with SBHC staff (Stone, Whitaker, Anyon & Shields, 2013). Developing a better understanding how the connectedness process works during the provision of services in a SBHC, a significant component of health and well-being, may contribute to the development of new risk reduction strategies in SBHCs and in schools.

Freudenberg and Ruglis (2007) elaborated an overall strategy for collaboration between public health and education professionals. They reframed the school dropout issue as a public health issue, as well as identifying the pressing need for education reformers and public health professionals to partner on the issue of school drop-out. This approach focuses on improvement of school completion by improving students' health. SBHCs are one identified health strategy.

The primary purpose of this study was to better understand the mechanism of how and why an SBHC succeeds in improving the health and well-being of adolescent users. This research used case study methodology to examine provider working relationships, motivations, and structure in a mature health center, as well as its effect on student risk and protective factors. Accessing SBHC care may create avenues and opportunities for youth to

establish connections to caring adults and for providers to identify those students at highest risk (Geierstanger et al., 2004).

Methods

This single exploratory descriptive case study was one in which the researcher sought to describe the phenomenon-the SBHC model-in a real life context in which it occurred (Yin, 2003 in Baxter and Jack, 2008). Case study research allows the investigator to explore a bounded system by examining its social processes over time, employing detailed in depth data collection and using multiple sources of information (Stake, 1991; Yin, 2009). Multiple sources may include documents, interviews, observations and artifacts (Creswell, 2007). Case study research seeks to understand what is unique and complex about a particular case, including its embeddedness in its particular context (Stake, 1991). This methodology can contribute to nursing sciences through its: (1) use of a multi-perspective analysis; (2) ability to give voice to the voiceless; (2) holistic understanding of phenomena not easily accomplished through other methods; and (3) contextualization of phenomena in real life context, aligning with nursing's concern for human relationships (Anthony & Jack, 2009). The results of studies using case study methodology can lead to an understanding of how an organization or program like a school-based health center will inform future interventions and generate ideas for policy development. This case study used a combination of Stake's approach and Yin's more recent approaches to case study design and methods (Yin, 2009). The research question was how does a SBHC affect the health and well-being of its adolescent users, as perceived by providers in a mature school health center?

Site/Sample

The site for this research was a well-developed high school-based health center, in existence for over 17 years, located in a suburban community near a major Midwestern city. This center was selected due to its easy access, uniqueness, experienced providers, longevity of existence, range of services, and integration of the center into the school, as evidenced by teacher/ nurse/social worker referrals (Stake, 1995).

This health center was founded in 1996 with a strong community input and support. Key community leaders from the school district, parent volunteers, the school's lead nurse, the health department, and other community organizations contributed to a needs assessment initiated by the parent teacher organization, initially focused on HIV. This assessment process resulted in a recommendation to create a school based health center to address the overall health needs of adolescents (A.A., and R.L., personal communications, 2013). The previous school superintendent had experience with the model in another state and was a particular champion of the founding of a health center at the school (A.A., personal communication, 2013). Despite some initial opposition by some forces in the community to the provision of reproductive health services, after a community consensus process, the local school board voted to approve the opening of the center (Swartwout & Russell, 1999).

Compared to more limited health centers, this one provided the full complement of SBHC services and referrals: comprehensive primary care (nurse practitioners and pediatricians), mental health counseling and referrals, substance abuse counseling and referrals, health education, youth development, onsite reproductive health (including dispensing of contraceptives) services, case management/health education, acupuncture, and

health professionals training. In terms of the range of services and providers, this SBHC provided a high level of expert care and comprehensive adolescent health treatment.

After a re-modeling grant from HRSA (K.S., personal communication, 2013), the modern health center space consisted of a large waiting room with secretary's desk, three exam rooms, laboratory, small kitchen and large counseling room where groups convened. Adolescent-focused educational materials were strategically placed in the waiting and exam rooms, and other walls displayed art work aimed at appealing to adolescents. Within the large campus building, the health center was located directly off the main school entrance. Clear bilingual (English/Spanish) signage directed students and parents to the location from the furthest parts of the convoluted campus hallways. Clinic hours were clearly posted on the front door, along with a rainbow triangle, identifying a gay friendly space. Hours of operation were conveniently set so that students did not have to miss class to be seen. A very unique feature of this site was that in addition to the SBHC, the school staffed a nurse's office with three registered nurses in a separate location in the school. An additional function of the health center was to enroll uninsured students in the state health insurance program.

The students in the school represented a diverse population with a significant group of students experiencing social stresses like poverty, minority status, and discrimination that increased their potential for risk when compared to other youth. As of 2012, 3,147 students were enrolled at this high school, 40.8% were low income students and 2.3% limited English learners. The ethnic breakdown of the student population includes 16.3% Hispanic, 43.6% Caucasian, 31.8% African American, 3.6% Asian, 0.1% Pacific Islander, 0.3% American

Indian and 4.3% two or more races. A significant black white achievement gap also exists (Illinois School Report Card, 2012).

Table 1 describes the SBHC user population during academic year 2011-12 by race, sex and insurance status. High school students had 2,588 clinical encounters by 845 students.

Table 1

SBHC Utilization by Sex, Race and Insurance Status (July 1, 2011-June 30, 2012)

ENROLLMENT*	
Sex	
Female	971 (52%)
Male	897 (48%)
Race	
Asian/Pacific Islander	42 (2%)
Black/Hispanic	21 (1%)
Black/Non-Hispanic	754(42%)
White/Hispanic	240 (13%)
Mixed Race	33 (2%)
Other	0
White/Non-Hispanic	776 (42%)
Native American/Aleutian/Alaskan	1 (<1%)
Unknown	1 (<1%)
Insurance Status	
Private	861 (46%)
Uninsured	207 (11%)
Medicaid/All Kids	798 (43%)
Unknown	2 (<1%)

*As of June, 2012, total SBHC enrollment was 1868 (includes seniors who graduated that month). There were 2,733 clinical encounters, made by 845 students during the year. Of these, visits, 2,588 were high school encounters, and 145 were encounters with feeder school students. Source: *Health Center Annual Report Summary*, July 1, 2111 to June 30, 2012.

Study Sample

The study population consisted of all the SBHC providers and staff. The 11 providers in this health center included a secretary/receptionist, three family nurse practitioners, three pediatricians, one public health nurse, two social workers and an acupuncturist. One pediatrician, two nurse practitioners and the secretary have worked at the center since its founding in 1996. Fulltime providers were a nurse practitioner, secretary, one public health nurse, and two social workers. All providers were female; eight were Caucasian, one African-American, one Hispanic, and one Asian. They ranged in age from 36 to 58.

The researcher conducted additional data collection from four community participants: the health department director/community advisory board member, the former district superintendent/founder, and a parent/founder of the center and town mayor (former local school board member). These participants provided historical context and background about the formation and development of the center.

Procedures

Provider participants were recruited by email, and interviews were scheduled working with the site supervisor so that student services would remain uninterrupted. Participants were provided with an email describing the general content of interviews and the demographic form prior to their scheduled meeting. Informed consents were obtained and provider interviews were conducted in a private office in the health center at a convenient time and place. Historian and acupuncturist interviews were arranged at a convenient time and location.

Data Collection and Interview Guide

This case study design used multiple methods of data collection, including: (1) interviews with the providers, staff and historians of the center; (2) SBHC document review; (3) publically available epidemiologic data describing the school and surrounding community; and (4) public observation of provider interactions in the health center.

In addition to the providers, the researcher conducted additional data collection from four community participants acted as historians: the health department director/community advisory board member, the former district superintendent/founder, and a parent/founder of the center and town mayor (former local school board member). These participants provided historical context and background about the formation and development of the center.

The researcher developed a semi-structured interview tool based on literature and the conceptual model that guided her research (table 2). The tool was piloted with an unrelated SBHC nurse provider, and reviewed by several public health nurse experts for relevancy and ease of implementation. Subjects were also asked to fill out a brief demographic survey that was used as a way to begin the interview. During each interview the study's conceptual model was provided to facilitate the interview (fig. 2).

Data Analysis

All interviews were tape recorded, transcribed by a professional transcription service and then checked against the tapes for accuracy. Transcripts were organized by interviewer and by question and hand coded. The analysis strategy was guided by Yin's approach of relying on theoretical propositions (Yin, 2009, p. 130). The major proposition for this data analysis was that a SBHC is a multilevel intervention that has the potential create

relationships, an environment, and interventions that can positively impact adolescent risk. Rich descriptions of the connection between access and the potential to create of caring relations, the meaning of the lack of this relationship, and exemplars of provider/student relationships were identified in the data.

Results

Providers believed that the health center had a positive effect on its users through three distinct avenues: easy access to services; providers as connectors; focus on the whole adolescent.

Easy Access to Primary Care

This SBHC provided easy access for adolescent users and displayed significant features of primary care first contact, continuous, comprehensive, coordination, and referral for specialized care. Because of its location in a school, a SBHC eliminated geographic and financial barriers, and could provide services in the classroom as well. No student was turned away because of inability to pay. They only needed parental consent to access services. A high level of investment in resources supported easy access and included a robust EMR, a separate nurses' office, and year round services. Perhaps most importantly, providers perceived that frequency of user contact, the ability to spend extended time with users, strict confidentiality and the creation of a safe and responsive environment were factors that defined their delivery of primary care.

The most obvious factor that supported easy access was the health center's location in a school building. One long-term physician provider discussed how locating a clinic in a school was tied to easy access:

It makes a huge difference, huge difference. So many of our students who have difficulty accessing health services [and] just can't get to the doctor. They may have a parent that works an eight to five or nine to five job and just can't get time off or doesn't understand the importance...of having their problem dealt with. If we're here, there's no barrier and we really try and also work our schedule around. We always work through the lunch periods. We're open year round Monday through Friday, which if you need primary health care and your SBHC is closed all summer, then you're back to the emergency room so for our students it's being here.

One physician provider summed up the issue of location: "you've dropped a doctor's office in a high school."

An expert provider reflected on the deeper meaning of the school location as she articulated the wealth of data that is available to providers when caring for adolescents in this setting. To the skilled provider, assessment of an adolescent user in a school was analogous to the home visit, if the school is viewed as the student's second home:

...this is where the kids live... Yes, they live in their homes but they also live in this building. When you see these kids on a daily basis, some of them, they come in here frequently. But what if they don't come in here frequently, you just see them, and they talk to you in a different way than they do...because we're on their territory. I think it's different but they come in and they're talking about the test they have the next period or the test that they just took. That doesn't happen in a regular medical setting...but even for the kids that don't come in here very frequently, we're still on their turf, and they come in here with their books on their arms, carrying their lunch, carrying whatever baggage of the day is happening to them, which is always something...they might be dressed in their soccer uniform or whatever it is that is happening that day. The conversation is just completely different with the kids because before you can launch into whatever the medical issues that they're coming into, you usually have to talk to them about what's going on out in school building. What's on their mind? What's going on? I think they relate to us differently, too...there's so many other aspects of these kids' lives that you get involved in, above and beyond just the medical care, which is very unique. It's also very unique to have

health care providers right here that are able to go into the classroom, that are able to respond to the needs of the school at an almost immediate basis when there is something that comes up.

Frequency of user contact; extended time with users; strict confidentiality; and creation of a safe and responsive environment also created easy access to primary care. One provider clearly articulated the impact of how a SBHC functions as she addressed these issues:

We have a lot more time so our physicals can take 45 minutes to an hour...we can see people over and over and over until we feel like we've got a good understanding that they got a good understanding of what the plan is. So, I really like that we can pull people out of class if it is an emergency or urgent, say [they] forget to come or there is something we urgently need to tell them, or we can call them between classes and they'll come down. So, continuity is great.

One physician provider stressed strict level of confidentiality and how this concept was communicated to adolescent users:

Confidentiality is usually defined at the first visit. When they sign-up and they're told that, "You know, everything is confidential. The only time we ever have to break their confidentiality is when someone's hurting them, they're going to hurt someone else, or they're going to hurt themselves." But I usually say all the sex and some rock and roll questions are completely private. So that's being enforced by everybody here. That's confidential.

Providers noted that the confidentiality of interactions created a safe and responsive environment so that adolescent users were more likely to return for care. One experienced NP described frequency of contact, the SBHC environment and trust:

...I think just at the frequency of the visit you are able to develop a trusting relationship and that's really the base of so much that follows. It doesn't have to be just an individual person that generates trust I think it's actually the whole clinic that they feel safe coming in here ...

The acupuncturist discussed the role of trust and users returning for care:

I think with the kids, the trust piece is right up front for them to commit to continuing. I see when I'm working with kids, it's very different from adults. For instance, if I start talking about Chinese medicine, at some point, I'm going to talk about the needles, right? And the kids were waiting for me to [get to] the needle part...and so I get to the needle thing pretty quickly now, because I know all that [other discussion] makes them trust me less... so I'll say let's talk about how you feel about the needles?...

A staff member described the SBHC environment:

...we're a safe place so they can come in here and they can talk about whatever they want to talk about and then we're here to help them, that's the main thing. So I think that it's safe for kids. Maybe they're having a problem and they don't want to talk to their parent about it. Maybe it's something that's personal or something to do with sexual health, whatever but they can come in here and it's private.

Providers perceived that their stress on strict confidentiality with users created a trusting environment. They attributed their efforts to create a safe environment as one reason that adolescent users honestly discussed their concerns and returned for additional visits. Follow up is an issue in any practice, but the establishment of trust and a safe space for adolescents can help to promote continuous care.

Resources

The site's investment in three resources supported easy access: A sophisticated EMR facilitated continuity of care by increasing internal and external communication. Providers were able to obtain a quick snapshot of an individual adolescent user's care and plans for follow-up. Given this SBHCs close relationship with its sponsoring agency, the EMR also increased providers' ability to efficiently create specialty referrals and communicate with

specialty providers. One of the social workers explained how the EMR increased continuity of care:

All of us are on... our medical computer system. And what's nice is that I can also look at notes from all of the providers here so if one of our doctors or one of our nurses had seen a kid, it's nice that I can reference them. It's silly sometimes because I feel like they're just right here I can go just talk to them. However, [the NP] is also seeing nine patients a day. [The nurse] might be seeing all those patients too. [The site supervisor] is always doing admin stuff and seeing patients too. It might not be as easy for me to walk out of here to go there, it's easier for me to click and...so if there's follow up, what's nice is that I can send them a message right away and they can do their follow up or they can come and discuss with me.

A very unique feature of this site was that in addition to the SBHC, the school staffed a nurse's office with three registered nurses in a separate location that increased easy access and continuity of care, as well as created a larger group of providers who knew students with frequent complaints. The nurses' office and the SBHC worked in tandem and were in frequent communication during the school day. This office provided triage for the SBHC and the nurse's office had four reserved urgent appointment slots, so that students could gain immediate access if necessary. One experienced NP talked about the Nurse's office function:

They [nurses office] deal with the huge volume of patients every day. I don't know how many but a 100 I'm sure and they have three nurses that are triaging ... they may come in for something and leave with something else and often that is psychosocial. Then we have a certain number of appointments that were reserved every day for urgent slots that are actually referrals from the nurses' office so they can give us a heads up about the patients [if] something else is going on besides the physical complaint they can assist us with reaching parents...

The third resource of this SBHC is financial--its sustainability is virtually guaranteed. It received core funding from state government, its long term hospital sponsor paid for the salaries of the providers during the life of the center, the school makes a contribution to

operational expenses and it receives some philanthropy (K.S., personal communication, 2013). The hospital sponsor views this SBHC as a significant community health program and has increased its financial contributions. For example when the public health nurse position was cut by the health department, the hospital picked up that salary. The local health department contributes public health and epidemiologic consultation, contraceptive supplies, and services on the community board. In contrast to the vast majority of centers, this one's future does not appear to be in jeopardy.

Providers as Connectors

Providers functioned as connectors to three different groups: the adolescent population, to one another as providers and to internal and external referral networks. All providers who were interviewed expressed enthusiasm for working with the adolescent population and their long-term commitment to this underserved populations, the larger community and the SBHC model. They also expressed their ability to connect to one another, working as a multi-disciplinary team. Lastly, they served as connectors to referral networks, within the school and within the greater community.

In the course of providing care to youth, providers and staff created deep caring relationships with the adolescent population. Typical provider comments about working at the health center were:

I love my colleagues, all of them. I love these students. I think they are just the most interesting people. And I love doing reproductive health. I feel like that is something that I can really make a difference in someone's life. To keep them safe, and give them control over when they have a baby. It can affect the whole trajectory of their life. I live in this town, so that's fun.

We have all the supports in place for this age group...people are here because they want to be here and work with teenagers. It's very interesting because it's a big deal. A lot of providers will tell you they hate working with teenagers.

I think that's enormously satisfying, to be able to provide that for a community of people where its access was either limited or nonexistent. And then for people that did have access to healthcare or might have insurance, we were able to do lots of things that would improve the students' health and improve school attendance, etc.

Well, I do joke like that... what I do here is like changing the world, one pill at a time. So there's a lot of girls that are on the pill that I don't know what their outcome would have been or if they weren't, or on whatever birth control form we decide. So, they just stay in school, being normal kids. That's the majority of the stories.

...I was the Spanish speaking daughter of immigrant parents who were really poor and lived in *[local community]*. I am the demographic that would've used this clinic. I am the demographic that would use this clinic... I see myself and my parents in a lot of these kids and a lot of these parents.

...I wouldn't stay at the job for 17 plus years if I didn't like working here...why? There so many whys we could spend an hour talking about that but I might get a little teary because I loved being here so much. I can't believe that question made me get emotional but it does. For a healthcare provider like myself to be able to work in your own community with kids, I mean my kids go to this school still have one kid at this school. It is to have the respect of the parents and the teachers and the other people that worked here. It's your dream job really. I mean it's such a gift to be able to have been given this opportunity to work in this amazing place where I feel like we impact the kids every single day. Oh man you can tell I love working here.

Providers consistently related moving examples of adolescents in difficult situations and the deep caring relationships that developed between them. Providers were able to use therapeutic relationships to establish meaningful connections with adolescent users. These narratives described relationships that demonstrate connection with students and the complex family situations students can learn to navigate with adult support. ²

Well, I had one [homeless student] last week... her mother's boyfriend killed her brother who was five and she was six. Then the mother ended up in jail... then, she lived with an aunt who was an addict. Then, she was homeless. Then, she end up with

² Some details of these accounts have been changed to protect students' identities.

the grandma and then she was homeless for a couple of years, bouncing. What I mean by homeless, she was not in a shelter, she's bouncing around. Basically from friend to friend and moved schools and then came back, because she's known someone way up north. Now, she's back and she's going to be a senior and she's living with a friend where there's sometimes not enough food. She wants to cheerlead again. She wants to go to college. She didn't have a ton of risky behaviors herself, like drugs and alcohol. She just showed up and I saw her for birth control and a physical. Then, [social worker] saw her. She's ready and now she wants to have a therapeutic relationship. So, they're going to meet weekly. Then, they [can] be prepared for when this housing situation falls through which it is going to. I'm going to see her again next week to see how the birth control went. Then, I can do more. There are a lot of kids like that who are just bouncing around and don't want to be. I mean, it's not their fault. There's never a week where we don't have a couple of stories that are as bad, if not at worse, than that one. She came here; I think she just walked in to birth control. Then I decided make it to a whole physical ... That's very common. They come in for one little thing and then, if you take the right history, it becomes a whole network of things. That's really common.

I have a very, very special student who I've become close with over the years. Who is almost basically raised herself, almost homeless, but really, really smart and been to a lot of tough classes and honors track. She got pregnant before I knew her, and had a baby and I take care of that baby. So, I would take care of her over here [SBHC} and the baby over there [local hospital clinic], but I didn't meet her until after she had the baby. I've known her now through so many different years, like community college, and now she's at [local prestigious private university]. I really feel I would do anything for her. She's a really amazing kid.

There is a kid... she's actually had an article in the [local newspaper] a week ago who was referred to me summer before she started high school, she was pregnant and due to deliver the beginning of her freshman year. I worked with her and supported her through her graduation and her acceptance to [local university] where she just graduated a year ago and with a degree in sociology and now is a case manager at [a local] Community Center. Living on an apartment, she had an alcoholic mother, a mentally ill drug abusing father who lived I don't know where in [local community], an older sister who also is a substance abuse and a dropped out in high school and a brother who is younger than her who is very much involved in substance abuse could've been an amazing football player and could have gotten full ride to college but because of the lack of support in the family and all the other stuff that was happening he dropped out as well. So how did this kid make it? I think it was everybody here. We were her second family.

Every year's there's a couple of students that I feel like I've gotten to know well that I'll miss. ..like this one girl this year who we were seeing frequently over the four years but in this last year, she's shared that she really wants to be a nurse and she's

become very motivated by her experience with all of us. And that was really rewarding to have her be aware that -- I think observing us in a role here with her. Also, she became involved in the -- we have an advisory board and one of her classes, health occupation's class she took, she volunteered to be on our advisory board as a student representative. Then she learned more about the services of the health center in a bigger way and hearing -- because on the advisory board, there are people from the community who come and hear about some of the background effort behind the health center and who's involved and how. It's opened up her eyes to something that I can see [could] influence her lifelong decisions. So that was very fun to see. And then there definitely some students that have come from such challenging backgrounds that they don't have the support at home and that they have found here ... I'm really going to miss her.

Providers also discussed the positive relationships with school administration and the ability of a SBHC to positively change the overall school environment. SBHC providers are positioned to deliver primary care services, and through their linkages with other school departments, work more globally to effect change within the school.

I love working in a health center. One of the P.E. teachers runs a class for junior and senior, overweight junior and senior girls at PE class, about twenty to thirty kids each year...so a lot of girls feel uncomfortable exercising in front of boys and especially if you're overweight... And she refers them to us and then we started working so closely with her she was so upset about the low self-esteem of these girls. But now, our social worker goes to her class... at least every other week to do work ... chats on self-esteem. You have so many different ways and you can do so much more than you can do in an office.

I think we have very positive relationships right now with everyone in the school. I can't think of anyone in this school that we have a negative relationship with. Part of that is because we try to reach out, we purposely try to reach out to certain groups of people in the school particularly the social workers... the [academic counselors]. We try to reach out to them on a regular basis, make sure they know who we are, what we do.

I think we understand the importance of academic achievement and so a lot of what we do is getting toward helping kids succeed academically and so in the very beginning when we first opened, there was about 10 percent of the student body that couldn't enroll on day one because they hadn't had their physical done. It was 70 kids out of 700. It was enormous and those students it might take a week or two to get a physical in some community place so they might miss a week or two of school which for kids that are academically disadvantaged and probably hasn't done well

educationally, to start off school by missing two weeks is a disaster. So we changed our schedule and developed all these open hours the week before, to drop in physicals and really got that number down close to zero within a few years. We're trying to keep students in the classroom.

Focus on the Whole Adolescent

Provider interviews often mentioned how their SBHC worked with all aspects of the adolescents they served. They were able to focus on the risk factors that contribute to overall adolescent health and wellness and move beyond their medical problems. The system of regularly and broadly assessing students for physical, mental, and academic risk was mentioned as the mechanism for being able to provide this focus and pursue needed follow up.

They may be coming in for a medical problem but we always deal with more than just that and so there are usually other issues that come up that require additional team members. This kid for instance, he's just getting on probation. [We] found out at the end of the treatment program he's still using on the weekend. But, he just had his best friend murdered, and got a history of bipolar and he's here for a full physical...

I talk to them and I have to ask them questions. Do you feel safe at home? Do you feel safe at school? Do you feel safe in your neighborhood? Is anybody making you do anything you don't want to do? And I mean, is anybody being mean to you? ...Sometimes through that we get, 'well' and then the 'wells' turn into 'well, it's complicated.' [I ask, 'What's complicated? Tell me about it. What does that mean to you?'] [At times] They just have a quick question and I've learned that that is teen talk for I have a major, big, huge problem.

We had another girl...who was following up with us for her herpes outbreak and we found out that her father was the person who gave her herpes. Then we found out that he was abusing another child. So we were able to get help to them. But again I think these are very, very hard things to disclose and you need to have a lot of trust. I think, it's more, just by being here and getting to know people and being known as a friendly and safe place....lets us identify victimization more... we are used to talking about the teenagers we are used to having things in our medical templates that you don't have at a private physician's office.

The co-location of physical and mental health services was frequently mentioned as an important way that providers could more completely address the needs of their students:

A very unique aspect to what we do in the SBHC that's very different from primary care settings is the fact that...we have our social worker right here... When you need

her, you can get her immediately. With mental health kinds of concerns, if you just tell the student, I'm going to make you an appointment to come back and see the mental health worker or the social worker, chances are, they are not going to come back. But if she's physically right here at the time you call her in, you can meet with her. You can be in the room together meeting with the student. The student will then frequently come back because they've actually... seen her face. They know that she's not threatening. We can facilitate mental health.

Discussion

Findings from this case study reported detail about provider perceptions of a how a mature SBHC created a nexus of care for adolescent users that effected their health and well-being (fig. 3). The model of care created was a blend of public health and primary care services, built on strong community and school partnerships. The themes of easy access, providers as connectors and care of the whole adolescent are findings that support previous recommendations for systems of care for adolescents by Nation Research Council [NCR] and Institute of Medicine [IOM], (2009): accessibility, acceptability, appropriateness, effectiveness and equity (Soleimanpour et al., 2010).

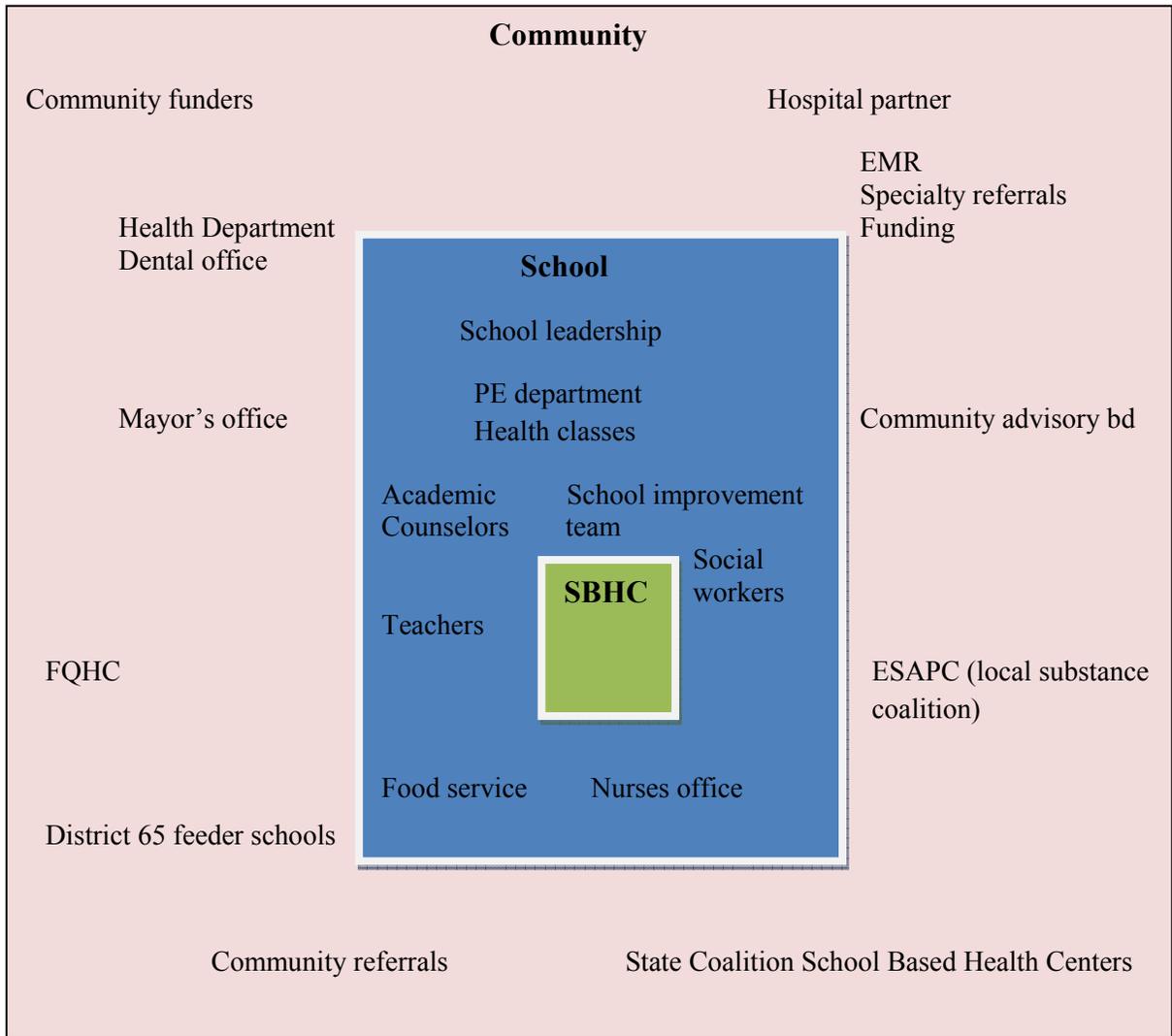


Figure 3. SBHC Nexus of Care: Characteristics of a SBHC Community and School Partnerships

Easy Access

This finding, that SBHCs can increase access and utilization by a diverse group of adolescent users, is supported by previous research (Allison, et al., 2007; Gibson et al., 2013; Guo et al., 2010; Juszczak et al., 2003; Kaplan et al., 1999; Santelli et al., 1996; Crespo & Shaler, 2000). This SBHC also meets a number of the access criteria identified by first by Starfield and used in previous research to evaluate SBHCs: first contact, continuous, comprehensive, coordinated, and referrals for specialized care (Santelli et al., 1996). The fact of easy access was supported and expanded providers' own ability to create a setting that was capable of addressing the specific needs of the most vulnerable of adolescent users. By their accounts, students responded. The view of expert providers in this study that the school is the adolescent's second home allowed them to glean large amounts of assessment data in a SBHC where students presented themselves in all of their ordinary individualities. As confirmed by providers in this study, SBHCs are also able to provide higher levels of provider confidentiality, increased levels of privacy and time alone with a provider and increased discussion of risky behaviors in SBHCs compared with other settings, (Klein & Wilson, 2002; Klein et al., 2007). Because of the developmental level of adolescents and their concerns about risky behaviors, these factors take on particular importance as facilitators of access for this population.

The first theme of easy access to broadly defined health care services established the context for the second theme of providers as connectors. Providers connected to one another and created a satisfying work environment, where compassionate care and respect for adolescents was normative. Connections were also evidenced by long tenure of providers at

the site and their shared enthusiasm for working with adolescents. Services to adolescents were strengthened by providers' ability to build partnerships in the school and in their community, and facilitated internal and external referral networks. The SBHC's ability to engage in consistent follow up, creating linkages with other school services and external referral networks enhanced the quality of care as supported by previous research (Clayton, Blackburn, & Echeverria, 2010; Juszczak, Friedman, Schneider, & Chapar, 1992). Most importantly, the easy access supported provider connection demonstrated by their lasting relationships with some users, as adolescents returned for additional visits, sometimes over their entire four years in high school.

The education community has adopted this concept of connectedness as one way to influence the school climate, and as a potential strategy to improve academic outcomes (CDC, 2009). Connectedness has been linked to improved health outcomes (Blum & Libbey, 2004). Bonny et al., (2000) studied characteristics of students who did and did not feel connected to their schools. In the health domain, clear identifying factors of students who did not feel connected were increasing number of school nurse visits, declining health status, as well as cigarette smoking and lack of extracurricular activities.

Connectedness is a dynamic process, and adolescents' needs for connection are multi-dimensional and change over time (Bernat & Resnick, 2009). Since connectedness functions as such a powerful protective factor, further understanding of adolescent need for connection, how adults can support them, as well as the processes and outcomes of interventions to increase connectedness constitutes an entire research agenda. Providers in a SBHC who model this behavior can contribute to the development of this agenda.

Consistent and systematic use of comprehensive risk assessment was the mechanism used by providers to care for the whole adolescent in this study. It was one important way that insured early identification of psycho-social concerns and appropriate follow-up. This SBHC used a student assessment form (IL Adolescent Risk Assessment, 2012), as well as the Bright Futures parent assessment form (American Academy of Pediatrics, 2008). Every student filled out a form on the first visit. The first three questions of the student assessment asked about liking school, problems at school, involvement in school and community activities, as well as adolescent risk behaviors like smoking, use of alcohol and other drugs, self-injury, safety in the home, trauma, bullying, etc. There was a place on the tool specifically to identify the issue of failing grades. Students who are at educational risk are of particular concern, and the use of risk assessment is a clear mechanism to identify these students and to provide them with increased support.

A major component of care of the whole adolescent is the population's unmet need for mental health services, often due to provider shortage. The integration at one site of mental health, reproductive health and physical health at SBHCs has increased access to mental health services, and allowed students to obtain mental health care free from stigma. One important study found that adolescents were 10 to 12 times more likely to access mental health care at a SBHC than at a community health center; the availability of the care was the major reason this outcome (Juszczak et al., 2003). Several accounts of serious mental illness at this site would have gone unmet if onsite mental health services were not available.

Since the major causes of adolescent morbidity and mortality are related to a variety of risk-taking behaviors that begin in adolescence: violence, obesity, lack of physical

activity, substance use, and mental health issues, the use of risk assessment is an important strategy in their care (Soleimanpour et al., 2010). The current ‘mismatch’ of the U.S.’s framework and distribution of child health services and the health needs of children and adolescents would suggest that a system of care for this population should include whole-person medical care services, community and population based services and health-related support and developmental services (Halfon, Inkelas, & Wood, 1995). Policy analysts and professional organizations and have long argued for the need for a transformative model of child health services. This clinic was one example of a fresh model (Halfon, DuPlessis, & Inkelas, 2007; American Academy of Pediatrics, Committee on Adolescence, 2008; Society for Adolescent Medicine, 2004).

The most significant limitation of this study was that only providers were interviewed. To fully unravel the relational aspect of connectedness, including adolescent users addresses how both parts of the relationship interact. Student interviews would triangulate the information obtained from providers, as well as report details about their own experiences in complex family situations and the community. Also, while “single case studies can be vivid and illuminating,” and can be viewed as a pilot case for ongoing case study research (Yin, 2009, p. x), a multiple case study provides a deeper understanding of processes and outcomes. Multiple cases can also attribute causality, an important link in the evidence necessary to document the effectiveness of SBHCs (Miles & Huberman, 1994).

Implications for Public Health Nursing

School based health centers serve as a health services model that blend primary care and population based approaches, rooted in partnerships with and responsible to their schools

and communities. The most serious issue facing these school based health centers is their sustainability. Public health nurses, school nurses, and in particular, SBHC providers can work with local community leaders, legislators, funders and advocates to increase their communities' understanding of the model and how it has the potential increase adolescent health and well-being. SBHC providers and their allies can serve as highly visible advocates for the model, working with state and national SBHC organizations, adolescent, public health and health care reform advocates. SBHC providers are in a position to demonstrate leadership in policy development and implementation, in partnership with local schools, school districts, school boards and other key educational leaders.

School based health centers can serve as model practice sites for the training of public health nurses, nurse practitioners, pediatricians and other providers who want to work with adolescents. One way to increase the supply and awareness of qualified public health nursing providers for this population is to expose them to sites in schools, including SBHCs and well-staffed school nurses' offices. Training content should include at the very minimum, the epidemiology of adolescent populations, adolescent health and development, psycho-social risk factors, adolescent-friendly behaviors, and a basic understanding of risk assessment and its implementation, including Bright Futures. Fundamental to public health nursing education, both at the baccalaureate and master's levels is the development of an understanding of how a combination of primary care, population based interventions, and wrap around services are necessary to meet the needs of adolescents. Public health nurse education should include activities that engage them in understanding how to function in their communities, and to create partnerships with key leaders in community schools, public

health agencies, and other community organizations. Recommendations for further research might include:

1. Conduct qualitative research with youth to further understand the needs of adolescents about the connectedness process, and how it works to build trust, decrease risk behaviors and impact attendance and academic outcomes. In particular, involve youth in the earliest stages of the research process i.e., creation of the interview guide development, questions for focus groups, etc.
2. Conduct research with youth and providers to better understand adolescent needs in terms of SBHC services. Since SBHCs vary in their scope of services, the goal of this research should be to define a set of core services, as suggested by previous research (Keeton et al., 2012).
3. Develop research partnerships focused on designing intervention strategies to increase connectedness, building on the strategies outlined in CDC's summary document (CDC, 2009).

Conclusion

School based health centers work as a model that can allow researchers to understand how providers and adolescents establish the relational connections that have the potential to decrease risky behaviors. Mature, functional SBHCs can serve as laboratories to conduct research, gather data from youth, and deepen our understanding of the interactions of adolescent friendly providers doing the ordinary work of providing health care to their student users. By unraveling how this connection is created and functions, we can design

and implement strategies to maximize their effectiveness and improve the health and well-being of adolescents.

APPENDIX A
LETTER OF SUPPORT

Your Research

From: "Swartwout, Kathy" <swartwoutk@eths.k12.il.us>

To: BB

Subject: Your Research

Date: Feb 22, 2013 12:10 PM

Attachments: [winmail.dat](#)

Dear Beth -

With the proper research approvals, the Evanston Township High School Health Center agrees to be the site for your doctoral research. We look forward to working with you.

Kathy Swartwout PhD, APN, FNP BC

ETHS Health Center

Site Manager

847-424-7265

847-424-7265 FREE

You'll need Skype Credit

APPENDIX B
EMAIL INVITATIONS

COVER EMAIL FOR HISTORIANS:

My name is Beth Blacksin. I am a nurse and a doctoral student. I am writing to request your participation in my doctoral study: PROVIDER PERCEPTIONS OF A MATURE SCHOOL-BASED HEALTH CENTER'S EFFECT ON ADOLESCENT HEALTH AND WELLNESS: A CASE STUDY. Though I have never worked at a SBHC, I have worked as a fundraiser for the centers at Amundsen and Lakeview in Chicago SBHCs for 12 years, and currently serve and have chaired the Il School Based health Center Coalition, so I am familiar with operations of the with the model. This is the first (I have found no other) of this type of study of a mature school based health center.

I am interested in interviewing you because of your role in the establishment of the school based health center at Evanston Township High School. In my study, it is very important to understand the historical context of the center. If you agree to participate, I will ask you about your role in the community, the founding of the ETHS center and issues related to its founding. I will also ask you about current issues related to the SBHC model if you are still involved.

The interview will take about one to one and half hours to two. I would prefer to meet you in person at a mutually agreeable time and place. Since you have been identified as a significant historian, I hope you will agree to be interviewed for my study. Please let me know if you are willing to participate so that I can email you a 5 minute demographic form to fill out before the interview. Thank you!

COVER EMAIL FOR PARICIPANTS:

My name is Beth Blacksin. I am a nurse and a doctoral student. I am writing to request your participation in my doctoral study: Provider Perceptions of a Mature School-Based Health Center's Effect on Adolescent Health and Wellness: A Case Study.

Though I have never worked at a SBHC, I have worked as a fundraiser for the centers at Amundsen and Lakeview in Chicago for 12 years, and as an advocate for the model. I currently serve on and have chaired the Illinois School Based health Center Coalition. This is the first study (I have found no other) of its type of a mature school based health center.

I am interested in interviewing you because of your role as a provider in the SBHC. I am hoping to learn more about the school health center from the providers who work at there. If you agree to participate, I will work with you and Kathy Swartwout, to schedule a convenient time during the day at the Center to conduct the interview in the next few weeks. It will take about one to two hours. Please let me know if you are willing to participate so that I can email you a 5 minute demographic form to fill out before the interview. I will also email you an information sheet about the content of the interview so that you can have a chance to think about what you want to say before our meeting. Thank you!

APPENDIX C
DEMOGRAPHIC SURVEY FORMS

HISTORIAN PERCEPTIONS OF A MATURE SCHOOL-BASED HEALTH CENTER'S
EFFECT ON ADOLESCENT HEALTH AND WELLNESS: A CASE STUDY

Historian Demographic Form

Name _____

ID number (for researcher) _____

Age _____

Race/ethnicity _____

Occupation if employed /retired _____

Length school employment at ETHS or school-based health center (if applicable) _____

Length of involvement with school health center _____

PROVIDER PERCEPTIONS OF A MATURE SCHOOL-BASED HEALTH CENTER'S
EFFECT ON ADOLESCENT HEALTH AND WELLNESS: A CASE STUDY

Provider Demographic Form

Name _____

ID number (for researcher) _____

Type of provider (MD, NP, Nurse,
etc) _____

Age _____

Race/ethnicity _____

Number of years working at this SBHC _____

Number of years working at other school/youth services _____

If other, indicate site and type of services _____

APPENDIX D
EMAIL RESEARCH PROTOCOL

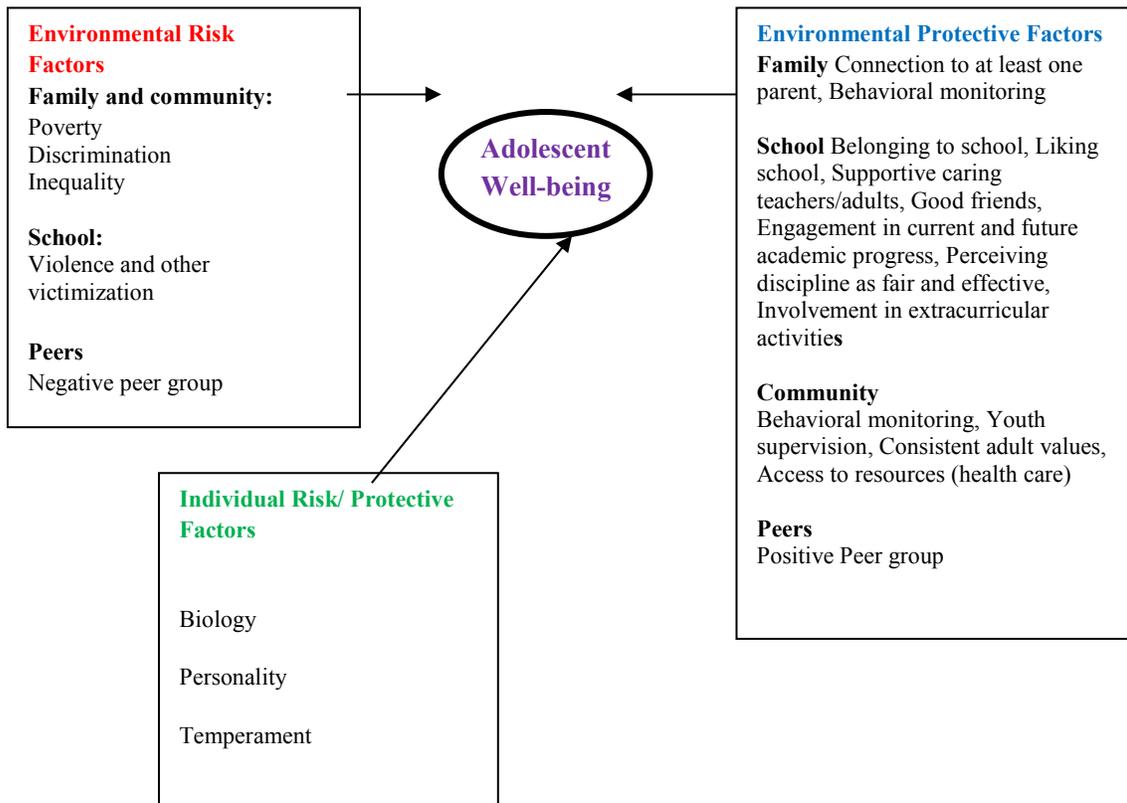
FOLLOW UP EMAIL FOR HISTORIAN PARTICIPANTS:

I am writing to provide you with additional information about your upcoming interview. I want to provide you with this information so that you can take some time to think about the questions before we meet.

There will be 3 parts to the interview:

- 1. I will ask you some questions about yourself; why you chose to work at a SBHC, and some questions about current services, teamwork, leadership and relationships.*
- 2. The majority of the interview will be about how the center works, and in particular how services impact the health and well-being of the high school students you serve. The interview will ask you questions about how the SBHC and its services impacts adolescents' environmental risk and protective factors using the conceptual model below. I have used the conceptual model to frame the questions*
- 3. Finally, I will ask you about things you might want to change if funding were not an issue.*

The interview will take approximately 1 to 1 and a half hours. I very much look forward to your participation and thank you for your willingness to participate in this research.



Proposed Ecological Model of Influence of a SBHC on the Lives of Urban Adolescents
(Adapted from Blum, LM & Blum, RW, 2009; Bronfenbrenner, 1979)

FOLLOW UP EMAIL FOR PROVIDER PARTICIPANTS:

I am writing to provide you with additional information about your upcoming interview.

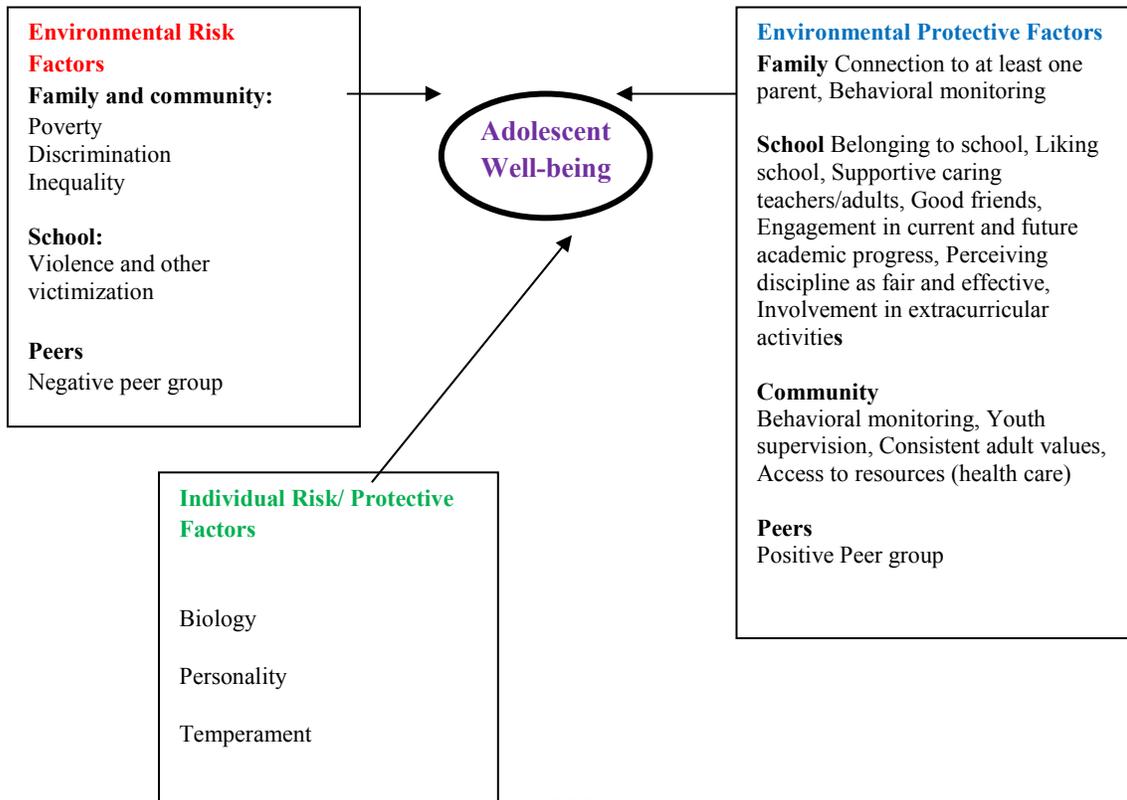
I want to provide you with this information so that you can take some time to think about the questions before we meet.

There will be 3 parts to the interview:

- 1. I will ask you some questions about yourself; why you chose to work at a SBHC, and some questions about current services, teamwork, leadership and relationships.*
- 2. The majority of the interview will be about how the center works, and in particular how services impact the health and well-being of the high school students you serve. The interview will ask you questions about how the SBHC and its services impacts adolescents' environmental risk and protective factors using the conceptual model below. I have used the conceptual model to frame the questions*
- 3. Finally, I will ask you about things you might want to change if funding were not an issue.*

The interview will take approximately 1 to 2 hours. I very much look forward to your participation and thank you for your willingness to participate in this research.

Proposed Ecological Model of Influence of a SBHC on the Lives of Urban Adolescents
(Adapted from Blum, LM & Blum, RW, 2009; Bronfenbrenner, 1979)



APPENDIX E
CONSENT FORM

CONSENT TO PARTICIPATE IN A RESEARCH STUDY

Project Title: Provider Perceptions of a Mature School-Based Health Center's Effect on Adolescent Health and Wellness: A Case Study

You are being invited to participate in a research study. This study will be conducted by Beth Blacksin RN, Ph.D.(c), RN, a PhD candidate in the School of Nursing at the University of Missouri-Kansas City.

Sixteen to 20 adult men and women who are providers at the school based health center and historians of the center who live in the community will participate in this study. The purpose of this study is to understand how a school-based health center effects the health and well-being of adolescents clients in its historical context.

You will be asked to participate in an interview and fill out a demographic sheet which will take approximately 1 to 2 hours of your time. The interview will be audio-taped. During the interview, you may stop the taping or ask that the tape be erased and it will be done. No identifying information will be recorded on the tape. The tape will be transcribed and the findings will include perceptions of how a SBHC effects the health and well-being of adolescent clients, its processes of operation and its historical context. The operations of the center will also be observed for two 2-hour time periods.

The findings may be used in professional presentations or be published in professional journals; however, your identity will be protected.

Your participation in this research is voluntary. You may choose to participate or to withdraw your participation without penalty at any time. Data collected from a participant up to the point of withdrawal remains part of the study's database.

You are not responsible for any costs or expenses associated with this study.

There are no known risks for participating in this study. This research is considered to be minimal risk. That means that the risks of taking part in this research study are not expected to be more than the risks in your daily life. There are no other known risks to you if you choose to take part in this study.

Possible risk of breach of confidentiality or you may feel uncomfortable answering questions; however, the risk of participating in this study is expected to be minimal because we have taken steps to protect your privacy and the questions are not about sensitive issues.

Although there are no foreseeable direct benefits to you it is hoped that the research will benefit others or society in general.

You can choose not to participate in this study. Your decision to not participate will not affect your job.

All of the information you complete and share in this study will be kept confidential.

While every effort will be made to keep confidential all of the information you complete and share, it cannot be absolutely guaranteed. Individuals from the University of Missouri-Kansas City Institutional Review Board (a committee that reviews and approves research studies), Research Protections Program, and Federal regulatory agencies may look at records related to this study for quality improvement and regulatory functions. Your identity will not be provided on the tapes or their transcriptions. Also, all of the tapes and their transcriptions will be kept in a locked office. The information obtained in this study may be presented at professional conferences or published in journals; however you will not be identified in any way.

The University of Missouri-Kansas City appreciates the participation of people who help it carry out its function of developing knowledge through research. If you have any questions about the study that you are participating in you are encouraged to call **Beth Blacksin**, the investigator, at **773-294-7214**.

You should contact the Office of UMKC's Social Sciences Institutional Review Board at 816-235-5927 if you have any questions, concerns or complaints about your rights as a research subject. You may call the researcher **Beth Blacksin** at **773-294-7214** if you have any questions about this study. You may also call her if any problems come up.

If you have any questions about this study at any time, you may contact Beth Blacksin at 3440 N. Lake Shore Dr. 18B, Chicago, IL. 60657 or you may phone her at 773-294-7214, or e-mail her at bab4gb@umkc.edu and she will be happy to answer any of your questions.

By signing your name below, you are indicating that (1) you have read this form, (2) you agree to participate in this study, (3) you have received a copy of this consent form, and (4) you agree to have the information you share in the study be used for the stated research purposes.

Printed Name of the Participant _____

Signature of the Participant _____

Date _____

Printed Name of the Investigator _____

Signature of the Investigator _____

APPENDIX F
SAMPLE INTERVIEW GUIDES

INTERVIEW GUIDE AND SCRIPT - HISTORIAN

Script: My name is Beth Blacksin. I am a nurse and a doctoral student conducting research at this school. I am hoping to learn more about the school health center from the historians who were involved in its founding and development. I am interested in the founding and the history of the center and your involvement in those events. First, I am going to review the demographic survey you filled out. Then I'm going to ask you questions about your role in the school, community and health center, its founding and any issues or events related to the center's founding and development. Do you have anything you want to ask me before we start?

Questions for historians:

1. Demographic survey: age, race, occupation, length school employment if applicable, length of involvement with school health center
2. What is your role in the school/community?
3. What is your current role in the school health center?
4. Can you describe how you first became interested in a school-based health center model of care?
5. How were the centers founded?
6. Were there particular issues related to the founding of the SBHC?
7. Can you describe your involvement in its history i.e.? Planning, development and ongoing work of the center?
8. Talk about the evolution and growth of the center.
9. Were there any seminal events important to how the center has developed over time?
10. What are ongoing challenges for the SBHC?
11. Is there anything else you want to talk about that I have not already asked about?

INTERVIEW GUIDE AND SCRIPT - PROVIDER

Script: My name is Beth Blacksin. I am a nurse and a doctoral student conducting research at this school. I am hoping to learn more about the school health center from the providers who work in here. I am interested in your ideas about how the center works, and in particular how their services impact the health and well-being of the high school students you serve. I am to review the demographic survey you filled out. Then I'm going to ask you questions about the health center, and then some other questions about this school. Do you have anything you want to ask me before we start?

Demographic survey: Providers will be given a form by email if they agree to participate in the study. The form will request this information:

Type of provider (MD, NP, Nurse, etc), age, race, number of years working at this SBHC or other school/youth services?

Questions for Providers:

1. Why did you choose to work in this setting?
2. Do you like/not like working here and if so, why?
3. What SBHC services are used the most, what services are used the least?

Probe: are there services you would like to provide but you cannot due to staffing or other factors like funding?

4. Is there anything you identify as unique about the services you provide?

Probe: what is particularly effective/not so effective in terms of services for youth?

5. Teamwork: How does the team here function to provide services that can impact access/outcomes?
6. How does clinical leadership occur at this site? How does leadership impact how care is provided for this population in particular to impact access and outcomes?
7. How would you describe the current relationships with the school administration, teaching and guidance staff? Probe: how do referrals occur to impact access and outcomes?

*In this part of the interview I want to address **protective factors for youth**. (Bolded concepts are model constructs, as well as initial coding terms).*

*At the community level, **access** to health services is viewed as an environmental protective factor for youth, in particular, access to adolescent friendly services.*

8. **Access:** From your perspective, how does the center function as a place where youth can access health services?
9. Do you think that a clinic located in a school has something to do with impacting access to services for this population? How?
10. *The organization Advocates for Youth defines **youth friendly services** as: confidential, respectful, comprehensive (integrated), free or low cost, culturally competent, easy access and promote child parent communication.*

Addressing these concepts, can you describe how this center is/is not youth friendly? Is there anything more that could be done to improve services so they are more adolescent friendly?

*At the family or community level, another protective factor for youth is **connection to a caring adult**:*

11. How is the content and quality of relationships w/ youth the same/different in a SBHC than other clinical settings?
 12. Is there a particular relationship(s) with a student you would like to discuss?
 13. Can you discuss that relationship as it impacted you and the student?
- Additional student relationships?

At the school level, Environmental Protective Factors are:

- **School:** *belonging to school, liking school, supportive caring teachers/adults, good friends, engagement in current and future academic progress, perceiving discipline as fair and effective, involvement in extracurricular activities*
14. Are there ways that a SBHC influences the overall school environment? Probe:
health education programs? youth development programs?

(then ask about the concepts below one at a time:

Does a SBHC influence the following concepts for youth?

Belonging to school/liking school?

Making good friends?

Academic progress?

Perceiving discipline as affair?

Involvement in extracurricular activities?

At the peer level, environmental protective factor are a Positive Peer group.

15. Are there ways that a SBHC can influence the choice of **positive peers** on the youth who use the center?

For youth, Environmental Risk Factors at Community and family levels:

Poverty, discrimination and inequality;

At the School level:

School violence and other forms of victimization and Academic and social disengagement

At the Peer level:

Negative peer influences

Environmental risk factors like poverty, discrimination and inequality can be manifest in at the school and at the peer level in the forms of racism and other forms of discrimination like race, class and issues of sex/sexual indentify.

Can you see ways that these risk factors can be mitigated by the SBHC? *I am going to ask you about them one at a time:*

School level:

School violence and other forms of victimization (sex, sexual orientation, racism?) school and academic disengagement

Negative peer influences

1. If you were in charge of this center and funding was not an issue, how would you change any aspect of services or its administration?

Anything else?

2. Is there anything else you want to talk about that I have not already asked about?

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VITA

Beth Blacksin earned both a B. A. and an M.A. in English at the University of Wisconsin, Madison before beginning her nursing career. She earned a B.S.N. and a M.S. in Nursing Science at the University of Illinois at Chicago. Her Master's thesis was entitled "Analysis of Federal Block Grant Impact on Chicago Maternal and Child Health Programs and Selected Health Indicators." She worked as a visiting nurse at the Visiting Nurses Association of Chicago, where she participated in an organizing effort, and was recruited to work at the Illinois Nurses' Association (INA). At INA she represented nurses in collective bargaining, wrote and edited articles for the state's publication, and worked on policy issues like nurse staffing, the corporatization of health care, and health care reform. She has taught undergraduate and graduate public health nursing at Rush and Loyola Universities. In addition, she has worked as a grant developer and writer at the Advocate Charitable Foundation. During her doctoral studies at UMKC, she also earned a certificate in qualitative methods from the University of North Carolina School of Nursing, Chapel Hill.

She has served on the Board of Directors of the Illinois Maternal and Child Health Organization where she further developed her interest in policy issues. She also served as chair and member of the Steering Committee of the Illinois Coalition for School Health Centers for over a decade.

She is a member of the American Nurses Association, Illinois Nurses Association and was nominated for membership in Sigma Theta Tau as an undergraduate student. She is also a member of the American Public Health Association.

Beth Blacksin plans to continue her research in communities using a public health focus, and in particular, studying school-based programs.