QUALITY OF ADOLESCENT PREVENTIVE HEALTH SERVICES AT SCHOOL-BASED HEALTH CENTERS COMPARED WITH USUAL CARE

By

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This document is dedicated to my mother and father, Alma and Merle Rodgers, who have been my steadfast supporters, to my three wonderful children that I deeply love and cherish, Devin, John and Richard Gilliland, and in loving memory of my Aunt Jesse "Jaye" Carter, my childhood idol, and Uncle George Carter, who provided me a lifetime of inspiration to make my dreams reality.

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The purpose of this study was to compare patient-reported provider adherence to preventive health guidelines for adolescents who utilize School-Based Health Centers (SBHC) with those who utilize usual sources of health care. It was hypothesized that adolescents utilizing the SBHC would receive significantly more preventive health counseling than those utilizing usual sources of care, and that they would engage in fewer risk behaviors.

The research design was a retrospective comparative survey with two convenience samples. Scores of eight quality measures from Young Adult Health Care Survey (YAHCS) were used to evaluate patient-reported provider adherence to preventive health guidelines. Risk behaviors, demographic and health status information were also compared.

Two inner-city high schools with SBHC were selected targeting 11th and 12th grade students who had a preventive health care exam in the past year. Two hundred and seven

subjects were recruited; 177 met the criterion for inclusion in the study. Thirty-four were enrolled into the SBHC group and 143 into the Usual Care group.

Descriptive statistics were used to describe frequency distributions, percentage distributions, means and standard deviations. Analysis of variance and Wilcoxon rank sum test were used to determine differences between the two groups. A p-value of 0.05 or less was considered statistically significant.

The overall demographics and health status of the two groups was not significantly different, although the SBHC groups' mean score for age was significantly higher. The study found that the SBHC group received significantly more counseling than the Usual Care group in five of the eight measures. Risk behaviors were not found to be significantly different between the two groups. Overall rating of care was significantly higher for the SBHC group than the Usual Care group, $p = 0.0002$.

It was concluded that adolescents who utilized the SBHC received more preventive health counseling than those who utilized usual sources of care, although risk behavior outcomes were not demonstrated by this study. The YAHCS is a useful tool to evaluate and compare the quality of adolescent preventive health care, although more outcome research is needed.

CHAPTER 1
INTRODUCTION

Unhealthy behaviors, particularly alcohol and drug use, sexual activities, violence, smoking, and suicide, are the primary cause of morbidity and mortality among adolescents (Grunbaum et al., 2001). Health care practitioners providing adolescents with primary care have an opportunity to influence knowledge, attitudes, and behaviors by providing accurate health information related to risk behaviors. Since 1967, the American Academy of Pediatrics has published recommendations for health-related content that should be discussed with adolescents during routine health visits (Hoekelman, Friedman, Nelson, & Seidel, 1992). In an effort to optimize provision preventive health services, numerous clinical guidelines have been developed by the American Medical Association (AMA), American Academy of Pediatrics (AAP), American Academy of Family Physicians (AAFP), and the US Maternal and Child Health Bureau (MCHB) (Bethell, Klein, & Peck, 2001). These guidelines serve as benchmarks for high quality preventive health care services for children and adolescents.

School-Based Health Centers (SBHC) were first established in the United States over 25 years ago to improve access for lower socioeconomic status (SES) children and to increase the overall numbers of school-aged children who received quality primary health care (Friedrich, 1999). The number of SBHC has increased dramatically over the last thirty years as they have been found to be effective in improving access to health care for lower socio-economic status minority children (Kaplan et al., 1999). The success of this model of care is reflected by the fact that from 1988-1998, the number of SBHC

increased nationally to nearly 1200, a ten-fold increase. There are currently centers in 45 states serving students in every grade, with expansion into rural and suburban schools (Schlitt et al., 2000).

In a comparison study of health care at a SBHC and a hospital-based pediatric clinic, adolescents that utilize to SBHC received significantly more visits for health care maintenance and counseling than adolescents utilizing the pediatric clinic (McHarney-Brown & Kaufman, 1991). In a study comparing Medicaid costs for children with access to an SBHC to those without, lower Emergency Department (ED) expenses and higher Early Periodic Screening and Diagnostic Testing (EPSDT) preventive health costs incurred by the children that utilize an SBHC suggests that they received more preventive health (Adams & Johnson, 2000). By increasing preventive health visits, and by treating minor illnesses and injuries in schools, SBHC have shown costly ED visits can be averted (Kaplan, Brindis, et al., 1998; Key, Washington, & Hulsey, 2002). By improving adolescent health care access, SBHC are in an ideal position to reduce the morbidity and mortality of adolescents through the provision of quality preventive health services.

Recognizing the importance of adherence to consensus guidelines for preventive health screening and counseling as an indicator of quality adolescent health services, the Foundation for Accountability (FACCT) developed the Young Adult Health Care Survey (YAHCS) to be administered to adolescents. The YAHCS was found to be a reliable and valid instrument for assessing adherence to adolescent preventive services guidelines by managed care providers of diverse groups of commercially and publicly insured adolescents (Bethell et al., 2001). It is a promising tool for measurement of the quality of

preventive health services to adolescents for quality improvement projects and for comparison of population subgroups.

As competition for resource dollars increases, it is important for policy makers to choose models of health care that provide access to quality preventive health care to underserved adolescent populations. Research is needed to demonstrate that quality preventive health care services are delivered in SBHC to adolescents that are equal or superior to those delivered in usual care settings, such as doctor offices, community health centers, hospital clinics, and other sites utilized by adolescents. This research will provide an analysis of the quality of preventive health care at two SBHC compared with usual care by utilizing the YAHCS for evaluation of preventive health services.

Problem Statement

School-Based Health Centers (SBHC) have been shown to be effective in improving primary care to underserved children. Although research has indicated that SBHC improve access to primary health care services for adolescents, as seen with increased health maintenance visits and reduced ED visits, there are no analyses of the quality of health care services at SBHC compared with usual sources of care.

Research is needed to demonstrate that SBHC provide equal or superior quality of preventive health care services to facilitate policy decisions for expansion of these sites to underserved youth. This research examined the quality of adolescent preventive health care delivered by SBHC compared with usual sources of care using the YAHCS, a previously tested valid and reliable survey tool developed to evaluate adolescent patient-reported provider adherence to recommended preventive health guidelines.

Research is needed to demonstrate quality outcomes from access to preventive health care services at SBHC. An exploratory usage of selected descriptive information

from the YAHCS was used to evaluate any differences in risk behaviors as an outcome of the preventive health counseling.

Specific Aims

The overall purpose of this comparative research was to evaluate patient-reported provider adherence to preventive health guidelines for adolescents that utilize the SBHC for preventive health care compared to those that utilize usual sources of health care. The eight sub-scales in the Young Adult Health Care Survey (YAHCS) that are used to measure the quality of preventive health care include

- Counseling and screening to prevent risky behaviors;
- Counseling and screening to prevent unwanted pregnancy and STDs;
- Counseling and screening related to diet, weight, and exercise;
- Counseling and screening related to depression, mental health, and relationships;
- Care provided in a confidential and private setting;
- Helpfulness of counseling provided;
- Communication and experience of care; and
- Access to health information.

The second purpose of the research was an exploratory evaluation to determine if preventive health counseling resulted in a reduction in risk behaviors between the two groups by analysis of selected questions in the YAHCS. To determine that the characteristics of adolescents that utilize the SBHC do not differ significantly from those that utilize usual sources of care, other questions in the YAHCS were used to evaluate if significant differences existed in demographics and health status.

Hypothesis

1. Adolescents utilizing a School-Based Health Center for preventive health care receive more of the recommended adolescent preventive health care counseling and screening than those who utilize usual sources.

2. The risk behaviors of adolescents that utilize the SBHC for a preventive health care visit differ significantly from those that utilize usual sources.

Concept of Quality

Three main components of health care that must be balanced by policy makers include access, cost, and quality (Hoekelman et al., 1992). Health care policymakers have focused on various aspects of these elements of health care to develop policies and programs to provide improved quality of life and reduced morbidity and mortality. This research will focus on the element of quality in health care to adolescents.

Quality is defined by Webster's New World Dictionary, Third College Edition (1988), as the degree of excellence as determined by distinguishing characteristics. To evaluate the quality of health care, established standards of care provide the distinguishing characteristics. Development of standards of care can be traced to Florence Nightingale who developed better methods to care for the sick. Indicators and measures of quality care originated in Nightingale's systematic evaluation of medical and nursing care, "Notes on Hospitals" in 1859 (Hoekelman et al., 1992).

Quality can be evaluated on the basis of structure, process, or outcome (Donabedian, 1980). Structural evaluations characterize the physical qualities of the physicians and hospitals. Process evaluations examine the quality of components of the encounter between the physician or health care provider and the patient. Outcome evaluations determine quality by the components of the health status of the patient affected by the medical encounter or intervention. Brook, McGlynn, and Cleary (1996) state that process evaluation data are the most sensitive measures of quality. A poor outcome in health may not be a reflection of the quality of care provided. Evaluation of

adherence to preventive health care guidelines during a well visit would be an example of a process evaluation of quality.

Quality, effectiveness, and efficiency are determined by established standards. (Flynn & Heffron, 1988). The Social Security Amendments of 1972 mandated the establishment of Professional Standards Review Organizations (PSROs) to determine adequacy of care provided to patients by hospitals and provided the founding conceptual basis for quality assurance programs. Although this program was eventually eliminated, the Tax Equity and Fiscal Responsibility Act of 1982 established professional review organizations to ensure the review of the completeness, adequacy, and quality of care (Flynn & Heffron, et al., 1988).

There are many methods used to ensure the quality of health care services provided, including licensure, certifications, and accreditations. Many guidelines, policies, and protocols also outline standards of care designed to ensure provision of the highest quality of health care and are used in evaluations. The National Assembly for School-Based Health Care has made guidelines, policies, and other quality improvement and evaluation tools available to SBHC, but currently there is no accrediting body and there are no licensure or certification requirements for SBHC sites.

Based on The U.S. Preventive Services Task Force recommendations, the emphasis of current national health care policy is on preventive health care services to decrease the occurrence of illness or injury. National guidelines or standards for comprehensive preventive health care services to adolescents have been developed and endorsed by numerous organizations, including the American Academy of Family Physicians,

American Academy of Pediatrics, American Medical Association, Maternal Child Health Bureau, Bright Futures, and the U.S. Preventive Services Task Force.

The major impetus behind quality assurance today is cost management to ensure that scarce health care resources are used efficiently and effectively (Custer, 1995). Choices among alternatives must be made by policy makers to maximize investments in the future health of the population. The US Preventive Services Task Force has developed a process to systematically review cost-effective analyses to shape evidence-based preventive health care services (Saha et al., 2001).

The emphasis on counseling and screening guidelines for adolescents as indices of quality health care is particularly appropriate since the leading causes of morbidity and mortality for adolescents are a result of risky behavior rather than "natural" causes (Klein & Auerbach, 2002). Risky behaviors, such as smoking, begun in youth often persist into adulthood and lead to diseases that are the primary causes of adult morbidity and mortality such as cardiovascular disease and cancer. Although it is the consensus in health care that preventive health services are important in reducing the morbidity and mortality among adolescents and into adulthood, numerous studies have shown that physicians often do not provide counseling and screening care according to the established standards (Blum, Beuhring, Wunderlich, & Resnick, 1996; Byrd, Hoekelman, Auinger, 1999; Goodwin, 1999; Halpern-Fisher et al., 2000; Hedberg, Klein, & Anderson, 1998; Merenstein, Green, Fryer, & Dovey, 2001;Yu et al., 2002).

Young Adult Health Care Survey (YAHCS)

With overwhelming evidence that physicians do not adequately adhere to recommended guidelines for preventive health screening and counseling, the FACCT developed the YAHCS for quality improvement and evaluation purposes. The quality of

preventive health services can be evaluated by either direct observation or indirect methods such as reports from clinicians, patients, or chart review. Direct observation is considered the “gold standard”, but there are limitations for this method of evaluation. The presence of an observer is likely to increase health counseling and adherence to standards by the clinician being observed. Chart review is good for accessing many quality standards such as immunizations, laboratory, and other outcome data, but less effective for counseling that might not be evident in the record. Many studies utilize physicians for surveys of quality care although physicians have reportedly over and under reported the services provided (Hedberg et al., 1998.) Patient report, if deemed valid and reliable, is considered the best option for evaluation.

The Young Adult Health Care Survey (YAHCS) was designed to measure quality of adolescent preventive health services and determined to be a valid and reliable method. The YAHCS measures the providers’ performance by evaluating adherence to preventive health guidelines and satisfaction of care as reported by the adolescent receiving services. It shows strong construct validity and reliability and differentiates among eight quality measures of preventive care to determine provider quality (Bethell et al., 2001). This 56-item survey tool will be used to evaluate the quality of preventive health services at the SBHC as compared to usual care.

CHAPTER 2
LITERATURE REVIEW

Risk behaviors are the leading cause of mortality and morbidity of adolescents and adults and are the focus of preventive health care guidelines. The majority of deaths among persons 10-24 years of age result from risk behaviors and include mostly four causes: motor-vehicle crashes, 31.4%; unintentional injuries, 31.4%; homicide, 31.4%; and suicide, 31.4%. Data from the Youth Risk Behavior Surveillance System (YRBSS) February through December 2001 of 9-12th grade students revealed behaviors in the prior 30 days that potentially contribute to these types of deaths, including those that had seldom or not worn a seat belt, 14.1%; had been in a car whose driver had been drinking, 30.7%; had carried a weapon, 17.4%; had drunk alcohol, 47.1%; and had attempted suicide in the previous 12 months, 8.8%. Additionally, 45.6% students reported having had sexual intercourse, and 42.1% of these did not use a condom. Risk behaviors resulted in 870,000 pregnancies among women 15-19 years of age and three million STD infections among persons 10-19 years of age (Grunbaum et al., 2001).

Cardiovascular disease and cancer are the primary causes of deaths among persons 25 years of age and older. Most of the risk behaviors associated with these conditions have their origins in adolescence. Some of the risk behaviors adolescents engage in include cigarette smoking (28.5%), failure to eat recommended servings of fruits and vegetables on a daily basis (78.6%), and failure to exercise daily (67.8%) (Grunbaum et al., 2001). In addition, more than 11.2% of adolescents are overweight with a body mass index (BMI) over 30 (Ogden, Flegal, Carroll, & Johnson, 2002). It is believed that

education and counseling may reduce risk behaviors established during adolescence, thus decreasing morbidity and mortality.

Preventive health counseling by physicians and other health care providers has been shown to be effective in modifying risk behaviors in adolescents. Research has shown that brief counseling interventions decrease alcohol consumption, increase condom usage, increase use of safety equipment by adolescents, decrease substance abuse, and increase adolescents' health knowledge (Klein, & Auerbach, 2002). Adolescent preventive health guidelines established by numerous medical associations, including the AMA, AAP, AAFP, and the MCHB, recommend screening and counseling for behavioral, emotional, and medical risks. Risk behavior screening and counseling is an important component of adolescent health care and also an important indicator of the quality of care provided.

Adolescent Health Care Access

According to the 1994 National Ambulatory Medical Care Survey (NAMCS), adolescents are more likely than any other age group to be uninsured and to underutilize health care services. Visits are short, averaging 16 minutes, and preventive health counseling is not a universal component of care. Adolescents continue to rely heavily on emergency departments and account for a greater proportion of ED visits than any other group (Ziv, Boulet, & Slap, 1999). In another analysis of the NAMCS (Marcell, Klein, Fischer, Allan, & Kokotailo, 2001), older male adolescent health care visits were significantly low when compared with other groups.

Wilson & Klein (2000) reported nearly 5% of adolescents surveyed identified the ED as their usual source of healthcare and these adolescents were less likely to have had a preventive health visit. An examination of ED utilization and follow-up patterns by

adolescents by Grove, Lazebnik, & Petrack (2000) found 93% of ED visits were non-urgent, 22% were uninsured, 17% were not referred for follow-up, and many did not identify a primary care provider.

In an analysis of the National Longitudinal Study of Adolescent Health conducted during 1995, 20% of adolescents had not received health care in the previous year. Factors associated with “foregone” health care included older age, minority race, single-parent household, lack of continuous insurance coverage, and participation in risk behaviors including tobacco and alcohol use and sexual activity. The study concluded that adolescents that forego health care are at an increased risk of physical and mental health problems (Ford, Bearman, & Moody, 1999).

Other studies have confirmed the disparity in adolescent insurance coverage and access to health care. In an analysis by Newacheck, Brindis, Cart, Marchi & Irwin (1999), data from the 1995 National Health Interview Survey showed that uninsured adolescents were five times more likely not to have a usual source of health care and twice as likely to go without physician contact during the year. The analysis also found that when insurance status was held constant, minority low-income children continue to have access problems that may be due to non-financial barriers such as transportation and lost wages from time off work. Insurance is not the total solution to health care access, and the authors concluded that little progress had been made in the previous decade to improve numbers of insured children and other non-financial barriers.

School-Based Health Centers (SBHC)

The number of school-based health centers (SBHC) has increased dramatically over the last thirty years in response to growing recognition that they provide improved access to health care by overcoming financial and non-financial barriers to care such as

transportation and time off work. Most SBHC are located in low-income minority communities and services are provided free of charge regardless of insurance status. Due to numerous complex billing issues, insurance reimbursement plays a small role in the budget of most SBHC, accounting for 5-10% of revenue. Local, state, federal, and grant dollars are the primary sources of revenue for these growing centers (Schlitt et al., 2000).

A wide range of physical and mental health services are provided by SBHC, including physical examinations, acute and chronic illness management, diagnosis and treatment of minor injuries and illnesses, immunizations, family planning, contraception, STD testing and treatment, prescription medications, laboratory services, mental health counseling, nutrition counseling, classroom education, and referrals to other community agencies. Advantages of SBHC include offering convenient access for children at school that eliminates transportation issues, student classroom and parent job absences for child medical visits, and financial barriers (Brindis, 1995).

Many studies have evaluated various outcomes of SBHC. Numerous studies have found that SBHC reduce the use of the ED, a costly source of care, and increase preventive health visits (Adams & Johnson, 2000; Kaplan et al., 1999; Key et al., 2002). Other studies have shown that SBHC access improves rates of well-child screenings and increases screening for high-risk behaviors (Kaplan, Brindis, & Naylor et al., 1998).

In a study that reviewed charts from a SBHC and a hospital-based pediatric clinic, both providing care to indigent low-income minority population, six primary diagnoses were reviewed over a five-month period. Diagnoses were grouped into categories including counseling, acute illness, chronic illness, acute injury, STD and/or pregnancy, and health care maintenance. There was no difference between sites for age or sex. The

SBHC provided significantly more visits for counseling and health care maintenance than the pediatric clinic, and the pediatric clinic saw more acute and chronic illness. The number of visits for STDs and/or pregnancy was not significantly different between the two sites. (McHarney-Brown, & Kaufman, 1991).

An analysis of Medicaid 1994-1996 claims data compared expenses of children with access to a SBHC to those in a comparison community that did not have access (Adams, & Johnson, 2000). The children with access to a SBHC had significantly lower ED, inpatient, and drug expenses, although they had higher preventive health care expenses. The conclusion from the results suggested that access to a SBHC effects child health services usage and improves access to preventive health care. Other research shows similar results indicating that SBHC improve access by decreased ED visits and increased preventive health care by providing preventive health care and early intervention (Kaplan et al., 1999).

In a retrospective cohort study, adolescents enrolled in managed care with access to SBHC were compared with those enrolled in managed care that did not have access to SBHC (Kaplan, Calonge, Guernsey, & Hanrahan, 1998). Medical records were reviewed for 342 adolescents and 3394 visits during three years. The evaluation compared 240 adolescents with access to SBHC compared to 116 adolescents without. Those adolescents with access were ten times more likely to have a mental health or substance abuse visit and they had between 38-55% fewer after hour visits. Of the adolescents with access to the SBHC, 80.2% had at least one comprehensive preventive health visit compared with 68.8% without access. In addition, it was found that adolescents with access were screened for high-risk behaviors at a higher rate. The conclusion was that

SBHC improve preventive health care visits and reduce after hour emergency visits for this population of insured adolescents. They concluded that SBHC appear to have a synergistic effect by providing primary care, comprehensive preventive health, and mental health counseling, thus reducing after-hour visits.

Another retrospective cohort study by Key et al. (2002) compared ED visit usage before and after SBHC enrollment based on chart review. There was a decrease of 18% in ED usage for adolescents enrolled the SBHC when compared with those that did not use the SBHC. They concluded that access to SBHC preventive health care decreased ED episodic care usage. Results were similar in a study by Santelli, Kouzis, & Newcomer (1996) that compared adolescents in nine SBHC to adolescents in four schools without access using a self-reported questionnaire. The analysis of results concluded that access to SBHC was associated with increased primary care, reduced ED visits, and fewer hospitalizations. Older male adolescents, who have low rates for health care services usage, are found to access SBHC more than any other site of care (Marcell et al., 2001).

Although numerous studies document reduced ED visits for adolescents with access to SBHC, there is little research evaluating the quality of preventive health care provided. A survey was administered to adolescents to compare outcomes of adolescents in 19 schools with SBHC to a national sample of urban adolescents that did not have access to SBHC. The purpose was to determine if SBHC affected access to health care, health knowledge, health status, and high-risk behaviors (Kisker & Brown, 1996). Acknowledging weaknesses in the study design, the study did not find that SBHC significantly reduced risk behaviors, although they were found to improve adolescent health knowledge. Limitations of the study included weaknesses in the design that made

estimated projections of differences and trends for adolescents that had access to SBHC assuming they followed the path of urban youths in their behavior patterns. The survey tool, which was not described in the literature and was administered using several different methods, also may have impacted the significance of the results. A previously tested valid and reliable tool needs to be consistently administered to assess the quality of preventive health provided to adolescents at SBHC.

Quality of Care in SBHC

The proliferation of SBHC has exceeded the research and evaluation of programs. Although it is often assumed that on-site services to children at school eliminates many access issues and improves health care use by underserved populations, the evidence measuring the quality of services at these new sites of care is often not studied. Standards to evaluate quality of health care services at SBHC have only recently been instituted in a few regions of the country.

The Colorado Association for School-Based Health Centers has been a leader in developing standards, certification and evaluation of quality improvement in their centers (Gance-Cleveland, Costin, & Degenstein, 2003). As a result of this work, SBHC receive significant third party reimbursement to fund their programs. Health Plan Employer Data and Information Set (HEDIS) measures were adapted to the SBHC to evaluate quality and meet JCAHO accreditation standards. Patient satisfaction surveys are considered an important outcome measure of quality. Surveys were given to 140 parents and 336 students. Both students and parents were satisfied with care at the SBHC, with 89% reporting it was easy to get an appointment. Ninety-three percent of adolescents who utilize SBHC in Colorado were satisfied with their overall health care giving an above average rating, and 76% stated they had been listened to and that information provided

was clearly explained. Patient satisfaction, a quality indicator, was high for SBHC in several additional studies. Pastore, Juszczak, Fisher, & Friedman (1998) evaluated satisfaction by administering a survey to adolescents with access to a SBHC to determine health center use and mental health concerns. A questionnaire examining users and non-users of a SBHC to study utilization characteristics was administered during physical education classes. Sixty percent of the students were registered in the SBHC and 75% of these reported having used the health center. Users did not vary by age, grade, and race or by any measured mental health problems. Of those that used the health center, 92% were satisfied with the services, 74% believed the visits were confidential, and 51% considered the SBHC their regular source of care. The study concluded that users did not differ in mental health issues and those that used the health center were very satisfied with the care received. Those that did not use the center usually reported another source of care or lack of need as the reason.

In another study, Santelli et al., 1996 used a questionnaire to survey adolescents in nine schools with access to a SBHC and four without access to determine attitudes and factors affecting enrollment. Quality of care was rated satisfactory to excellent by 86% of SBHC enrollees. This study demonstrated an overwhelming support of the SBHC by adolescents using the centers.

The research demonstrates that SBHC improve access to adolescent preventive health care services, and that patient satisfaction, one quality indicator, is high. The importance of this preventive health care is well documented by the fact that most morbidity and mortality in adolescents and adults is caused by risk behaviors that are established in adolescence and preventable. Research demonstrates that SBHC increase

preventive health visits, although research into the quality of the preventive health provided at SBHC is scant. Research that has explored preventive health screening and counseling interventions by physicians or clinicians suggests that screening and counseling guidelines are not being adhered to (Klein & Wilson, 2002; Byrd, Hoekelman & Auinger, 1999; Flores, Bauchner, & Kastner, 2000). Although there are a few comparisons of the quality of preventive health care between different practice settings (Blum et al., 1996), there are none that compare usual care with SBHC.

Preventive Health Screening and Counseling

Numerous studies have examined cost-effectiveness of preventive health services. It is particularly relevant for policy makers to know the best implementation of preventive health services as they represent a major investment in the future health of large populations (Saha et al., 2001). While preventive health services are believed to be an economically sound investment, the conclusion of cost studies to validate this belief have variable results.

Downs & Klein (1995) attempted to demonstrate the cost-effectiveness of prevention services for alcohol abuse and unsafe sexual activity. Through the use of a cost-effectiveness model of adolescents' risky behaviors that was developed, assuming 5% effectiveness of preventing risk behaviors, it was determined that it would cost $3035 to prevent one adverse outcome and $471,000 to prevent a death. It was then estimated that clinical trials of 4000- 95 million adolescents would be required. The conclusion reached was that studying the ability of preventive services to prevent adverse outcomes of adolescent risk behaviors is impractical primarily because the sample sizes would have to be prohibitively large.

In another study attempting to quantify the value of preventive health services, the prevalence of adolescent morbidities was obtained from national surveys. Estimated costs of preventive health services were obtained from surveys of nine Blue Cross and Blue Shield plans and four other insurance companies (Gans, Alexander, Chu, & Elster, 1995). The cost of adolescent morbidities included only direct medical costs for one year no long-term or indirect costs. The study estimated $33.5 billion was spent, using 1992 dollars, for selected morbidities or $859 per adolescent year. The selected morbidities included pregnancy, STDs, HIV and AIDs infection, alcohol and drug use, motor vehicle injuries, unintentional injuries, and outpatient mental health visits. The cost of preventive health services averaged $130 in fee-for-service systems. Preventive health services would have to eliminate 15% of morbidities to break even according to the estimates used in this study.

The study acknowledged that morbidity costs were underestimated and preventive health services cost were overestimated. There was no attempt to quantify human loss in terms of life and lost productivity. Empirical evidence has not demonstrated clearly the effectiveness of provider screening and counseling. With immeasurable human costs involved and evidence that prevention services may reduce morbidity and mortality, evidence-based preventive health guidelines for screening and counseling of risk behaviors have become the accepted standard for adolescent health care..

The 1999 Youth Risk Behavior Surveillance Survey (YRBSS) found that 60.4% of US high school students reported a preventive health care visit in the previous 12 months (Burstein, Lowry, Klein, & Santelli, 2003). The Agency for Healthcare Research and Quality’s mission incorporates four areas of health care research that includes

measurement of clinicians' utilization of evidence-based recommended guidelines. Knowledge of evidence-based recommended practice guidelines does not imply that health care providers will incorporate them into practice (Palmer & Miller, 2001).

Numerous studies have examined the content of those health visits and adherence to recommended guidelines. A recent national survey of pediatricians found use of more than 100 different practice guidelines and that with the exception of asthma, no guideline was used by more than 27% of pediatricians (Flores et al., 2000).

A study analyzing the 1999 National Survey of America's Families noted that 23.4% of children did not receive well-child visits recommended by the AAP (Byrd et al., 1999). Another study using claims data found that despite insurance coverage, adherence to AAP guidelines for well-child visits was low, with only 35% of publicly insured and 46% of privately insured children receiving all the recommended health care.

Research data indicates adolescents that access health care often do not get the preventive health screening and counseling recommended. A recent study examined data from the National Ambulatory Medical Care Survey (NAMCS) for the three-year period 1995-1997 on the frequency and duration of adolescent counseling for diet and exercise, weight reduction, cholesterol reduction, HIV transmission, injury prevention, and tobacco use were evaluated. The results found counseling in any of the seven areas was included in only 15.8% of the family physician visits and 21.6% of the pediatrician visits (Merenstein et al., 2001).

Pediatrician' adherence to preventive health guidelines in a managed care setting was surveyed in California. Immunization status was screened in 92% of adolescent patients, but risk behavior screening was less frequent (Halpern-Fisher et al., 2000). The

percentage screened was 60-80% for topics on obesity, sexual activity, tobacco use, alcohol and drug use, and seat belt and helmet use. However, for the topics access to handguns, suicide, eating disorders, depression, and drinking and driving, the percentage screened in only 30-47%. Fewer than 20% reported screening for smokeless tobacco, sexual orientation, sexual and physical abuse, and drinking alcohol. Assessment and education of adolescents positive for risk behaviors was low although it was found that female physicians and new medical school graduates were most likely to provide recommended prevention services, and this finding has been supported in other similar research (Kelts, Allan, & Klein, 2001; Millstein & Marcell, 2003).

In a study examining five practice settings in Minnesota, results showed none of the sites screened adolescents as recommended (Blum et al., 1996). Another study of the 1997 Commonwealth Fund Survey of Adolescent Girls and a nationally representative sample of boys in the 5th-12th grade compared adolescents' reports of what they wanted to discuss with health care providers and what they actually discussed about reported health risks (Klein & Wilson, 2002). The adolescents most frequently discussed dietary habits (49%), weight (43%), and exercise (41%), and wanted to discuss drugs and smoking. At least one potential risk behavior was reported by 70.9% of the adolescents surveyed, although 63% had not received any preventive health counseling about any risk behaviors. Adolescents need and want to talk about risk behaviors, although data show that health care providers are not adequately providing the proper screening and counseling.

Using data from the 1999 Youth Risk Behavior Surveillance Survey, of the students that reported having a preventive health visit in the previous 12 months, 42.8%

of females students and 26.4% of males students reported having discussed STD, HIV, or pregnancy prevention at those visits. It was concluded that primary care providers miss opportunity to provide important sexual health information to adolescents (Burstein et al., 2003).

Based on data that demonstrate the effectiveness of brief interventions for alcohol intervention in adults and acknowledgement that physicians often fail to provide effective preventive health screening and counseling, a random sample of pediatricians and family practice providers were selected from the American Medical Associations Masterfile to assess quality of adolescent screening and counseling (Millstein et al., 2003). They were mailed a questionnaire with basic demographic questions, personal alcohol use, training, and characteristics of practice, beliefs and attitudes about alcohol use and delivery of alcohol preventive services to adolescents. The screening quality was rated from one to seven, based on the level and depth of the counseling. One fifth of the sample reported poor levels of screening at levels one to two and less than one third of the sample provided screening at high levels of six to seven. Female physicians were found to screen more often and at a higher level.

It is well documented in the literature that health care providers do not provide adolescent preventive health screening and counseling according to the recommended guidelines. Patient characteristics associated with improved adherence to guidelines include older patient age, preventive health care visit, longer visit, and new patient visit (Goodwin et al., 1999). Provider characteristics include female provider and recent graduation.

Other issues have been found to affect the quality of preventive health care include confidentiality. Adolescents' concerns about privacy and confidentiality affects them seeking health care. It also may inhibit their honest discussion of risk behaviors with health care providers impeding appropriate interventions.

Adolescents were placed in one of three groups to hear audiotapes with a physician assuring unconditional confidentiality, assuring conditional confidentiality, and one not mentioning confidentiality. As assurances of confidentiality increased, the disclosure of sensitive information increased on issues on sexuality, substance abuse, and mental health, and the number of adolescents willing to seek health care in the future increased (Ford, Millstein, Halpern-Fischer, & Irwin, 1997).

Unfortunately, data indicate that physicians discuss confidentiality with only 53% of their adolescent patients, and 11% do not discuss confidentiality at all (Ford & Millstein, 1997). For quality preventive health services, it is important that confidentiality be discussed with adolescents to obtain disclosure in the screening of risk behaviors and allow appropriate interventions. It is also important to discuss confidentiality with adolescents to encourage this population that inadequately utilizes health services to develop trust in health care providers so that they seek future health care.

Existing research indicates that the SBHC are very effective in improving health care access to adolescents, although there is scant literature evaluating the occurrence and content of SBHC' preventive health screening and counseling. Acknowledging the importance to provide quality preventive health care to adolescents, the YAHCS was developed to evaluate quality by adherence to the established evidence-based guidelines.

Application of the Young Adult Health Care Survey

The percentage of adolescents who receive yearly well visits is used by the National Committee for Quality Assurance (NCQA) as an indicator of quality of care for health maintenance organizations. This measure does not include information regarding the quality or provision of preventive health counseling. As previously discussed, research has found that adolescents often do not receive the recommended preventive health counseling and screening services at these yearly well visits, therefore a method for measuring adherence to the guidelines needed development.

In a project sponsored by the Foundation for Accountability (FACCT), a 56-item survey, the Young Adult Health Care Survey (YAHCS) was developed to evaluate adherence by health care providers to the adolescent preventive health guidelines set forth by the US Preventive Health Services Task Force and AMA, AAP, AAFP, and MCHB. Based on findings that adolescents are the most valid source for data regarding preventive health counseling and screening, the survey tool developed has been shown to be valid and reliable when administered to adolescents. It has been tested by a diverse group of commercially and publicly insured adolescents across the country.

The validity and reliability of adolescent self-report was previously established in a research project that performed audiotape encounters, telephone interviews, and chart reviews of 14-18 year olds that had received preventive health care at 15 different sites (Klein et al., 1999). Audio taped encounters are considered the gold standard to assess the sensitivity and specificity of physician patient visits. Chart reviews are considered the gold standard for evaluating physical exams and testing provided. Audiotapes were coded to assess 33 specific content areas from the Guidelines for Adolescent Preventive Services (GAPS). Nearly all (94%) remembered having a preventive health care visit,

93% identified the site of care, and 84% identified the provider. Although there was wide variation in the prevalence of preventive health screening between sites, adolescent self-report was highly sensitive at two weeks and six months for 24 of the 34 items including weight, diet, body image, exercise, seatbelts, helmet use, tobacco, alcohol, drugs, sex, sexual orientation, birth control, condoms, HIV, STDs, school, family, future plans, emotions, suicide, and abuse. It was least accurate for self report for blood pressure, cholesterol immunizations, fighting, violence, sleep, dental care, friends, and over-the-counter drugs.

In another study designed to assess the reliability of adolescent self-report of provider counseling, preventive health services and health behaviors, a questionnaire survey was administered in school to a sample of adolescents at a two weeks interval (Santelli, Klein, Graff, Allan, & Elster, 2002). Questions regarding health behaviors were taken from the 1997 YRBSS and questions regarding health counseling and services were obtained from the National Center for Health Statistics. Their data suggested that adolescents are generally reliable in test-retest reporting of preventive health care services and behaviors.

The YAHCS was developed in a multistage process that first identified the common components of various recommended adolescent preventive health care guidelines (Bethell et al., 2001). Topics that adolescents do not have validity and reliability in reporting were eliminated. Items related to adolescent experience and communications were added. Cognitive testing of the draft survey was done with 35 adolescents from different socioeconomic groups and adjustments were made in design, formatting, and wording of survey questions. Readability of items was written at a 6th-

8th-grade level and cognitive testing for readability was performed on adolescents of various grade levels. The survey was administered to 4060 adolescents 14-18 years of age enrolled in managed care plans in New York, California, and Florida, three samples from publicly insured plans and three from commercially insured plans. Survey information was obtained either via mailed survey or telephone survey.

Adolescents were categorized into four different user groups based on services received: 1) adolescents who had a preventive health visit within the last year as defined by the NCQA, 2) those who had another type of visit where preventive health counseling should occur, 3) those who had any other type of health care, except hospitalization, and 4) those who had not received any health care in the last year. The adolescents sampled reported that 58.2% had received a preventive health care visit in the last year, 21.4% had another type visit where health counseling should occur, 6.7% had another type of health care visit, and 13.7% had not seen a health care provider in the past year.

Eight factors emerged from the factor analysis including counseling and screening:

1) smoking and alcohol use; 2) other risk behaviors including drug use, helmet use, drinking and driving, steroid use, violence, guns, and abuse; 3) sexual activity; 4) diet, weight, and exercise; 5) emotional health and relationship issues; 6) provision of private and confidential care; 7) helpfulness and effect on counseling; and 8) communication and overall rating of care. To create measurement scales, factor one and two were combined and the result was a scale with strong internal consistency and reliability (Cronbach's alpha ranged from 0.68-0.84).

For concurrent validity of the measurement scales, four hypotheses were created from expected associations among the YAHCS items. It was hypothesized that

preventive health screening is 1) greater for adolescents who report a private visit, 70.9% versus 40.4%, 2) greater for those who report risky behaviors, 63.1% versus 45.9%, 3) greater for adolescents who report their provider listened to them carefully, 66% versus 55%, and 4) greater for those who receive preventive health counseling and screening on certain topics, 58.0% versus 5.7%. Results supported the hypothesis relationships. The proportion of adolescents reporting engaging in risk behaviors was compared with the statistics from the national studies using the YRBSS and was found to be similar.

For applicability of the survey tool, the seven measurement scales were evaluated to determine if they met criteria for use in comparison of health plan performance and to evaluate areas of need for improvement variation could not be accounted for by demographics, gender, and other non-related variables. As with other studies evaluating performance of adolescent preventive health guidelines, the adherence to guidelines was observed to be low, ranging from 20-50%. Only 40% reported providers spent enough time.

Multivariate linear regression was used to assess variations of demographic variables and other related factors. The YAHCS was used as the dependent variable and independent variables included age, gender, race, payer (commercial or public), mode of administration (mail or telephone), and type of visit. Although age, gender, race, payer, and type visit accounted for a small amount of variation across reported preventive health services, significant effects were noted on one or more measurement scales for these variables.

Most evident was that females and older adolescents were more likely to report private time and to receive screening and counseling on topics related to sexual activity.

Those that received an NCQA-defined preventive health visit were more likely to receive preventive health screening and counseling. Mail and telephone survey results varied and quality of care was lower in sites where surveys were mailed. Although no conclusions were drawn from the differences in mode of survey, the results suggest that utilization of a consistent mode for administration of the survey is warranted.

As a result of the significant variations associated with these variables, three conditions were determined that must be met to allow for comparisons between groups. Adolescents must have had the same type visit, such as a preventive health screening as defined by the NCQA. The same mode of administration must be used, such as either telephone or mail. For comparison, the adolescents must have the same payer within the managed care organization, public or private. In this study, only two groups met these three criteria for comparison.

Limitations of the study included an inability to explain variations in the scores between the mail and telephone mode. Since adolescents were sampled from only three states, findings may not be generalizable to the general population. Response rates were low, 13.2% in one sample. The YAHCS measurement scales provide much information on receipt of adolescent preventive health services but they do not evaluate the skill or effectiveness of the provider screening and counseling with outcome measures (Bethell et al., 2001).

The results of the analysis indicate the YAHCS has strong construct validity to measure adherence to recommended preventive health screening and counseling guidelines. Validity was supported by expected relationships among survey items, and the seven quality measurement scales have high internal consistency and reliability. The

study supports previous findings of the importance of ensuring confidential and private care to obtain important screening information from adolescents.

The YAHCS was utilized by Washington state as a pilot project to compare five managed care organizations serving Medicaid clients. Telephone and mail surveys were used. Response rates were 42.7-54.4%, comparable to other surveys. Adjustments were made for differences in age and gender responses. Inclusion criteria for comparison included 14-18 years of age and had a health visit in the last 12 months. Adolescents who completed a health checklist reported significantly higher quality scores. Those adolescents who reported engaging in risk behaviors reported more counseling than those that did not. Overall performance of screening and counseling was low as observed in previous field trials of the YAHCS (Young Adult Health Care Survey, Snobomish County, 2000).

Summary

Research shows that most adolescent morbidity and mortality is preventable, yet many adolescents have poor access to health care and do not receive the recommended preventive health services when they access health care. School-based health centers not only improve adolescent access to health care, but the research data show that adolescents with access to SBHC obtain more preventive health care and reduced ED visits. Although few studies have rigorously evaluated the process indicators of quality of care at SBHC, patient satisfaction has been reported to be high.

Evaluative research is needed to mainstream SBHC and ensure the financial sustainability through the development of third party reimbursement. The quality and effectiveness of health care at SBHC must meet community standards and be comparable or better than usual sources of care to promote community acceptance of SBHC program

and impact public policy support for programs. Scant research has compared the quality of preventive health services provided to adolescents by SBHC to usual sources of care.

The YAHCS meets criteria for comparison of quality of preventive health care services across similar type health plans when comparable adolescents are identified. It is strongly aligned with recommended adolescent preventive health care guidelines established by the AMA, AAP, AAFP, and the MCHB and the Healthy People 2010 leading health indicators. The YAHCS has potential for evaluating the quality of preventive health screening and counseling of adolescent populations with access to a SBHC, comparing users of the SBHC to nonusers who obtain health care from usual sources. The YAHCS tool could evaluate characteristic differences, if any, of risk behaviors of adolescents who are users of the SBHC to nonuser who access usual care. Research in quality of preventive services is important for quality improvement and to determine the best allocation of resources for quality preventive adolescent health care and in meeting the national health indicators outlined in Healthy People 2010.

CHAPTER 3
METHODOLOGY

This study of the quality of preventive health care services in SBHC utilized a retrospective comparative survey design, using a convenience sample. The primary purpose of this research was to compare the quality of preventive health care counseling services reported by adolescent users of a SBHC with similar users of usual health care sources (doctors office, community health center, hospital clinic, family planning clinic or urgent care). The secondary purpose of this research is to explore any differences in risk behaviors between the SBHC group and users of usual health care sources as an outcome from the preventive health counseling services received.

The Young Adult Health Care Survey (YAHCS) was administered to consenting participants at two inner-city Miami high schools. The YAHCS was developed by the Foundation for Accountability (FACCT) to assess the quality of preventive care to adolescents and permits usage of the tool, offering technical assistance with administration of the tool as needed.

Sample

Students in 11th and 12th grade social studies classes at two inner–city high schools with a SBHC on site were asked to participate. Since it is known that the numbers of students enrolled in the SBHC increases with each successive grade, the 11th and 12th grade students were selected to attempt to obtain adequate numbers of participants that utilized the SBHC for preventive health care. Social studies classes were selected, as all the students are required to take the subject each year. The age of the students ranged

from 15-20 years. Students must have had a routine physical examination within the last year to participate. Non-English speaking students were not among those asked to participate in the study, although bilingual students were not excluded.

The researcher attended the selected classes and presented the study, addressing the invitation to participate to those that acknowledged having had a preventive health care visit in the last year. Those who expressed interest in participating in the study were given informed consent/assent forms to sign and have their parents sign. Participants were asked to return the signed consent/assent forms to their social studies teacher within the week. To stimulate participation and return of the informed consents, students were told that they would receive a coupon for Wendy's for enrolling in the study and answering the survey. Between the two high schools, approximately a 1000 informed consents were distributed to students who acknowledged having had a preventive health care visit in the last year and who indicated a desire to participate in the study.

Sample Size

Based on previous application of the survey, it was conservatively estimated that 30% would consent to participate, or approximately 300 of the 1000 invited to participate. The return rate for the informed consents from the parents and assent from students was 5%, not as high as previous studies, so those that were 18 years of age and able to consent for themselves were identified and asked to participate in the study. After the presentation of the study at both high schools, consents/assents for 207 adolescents were obtained and surveys completed.

Site of Analysis

This study took place in the Miami Carol City High School and Miami Northwestern Senior High School. Both high schools have a SBHC, administered by the

same county hospital, and all students are eligible for enrollment in the health center with a notarized consent for treatment from the parent or guardian. Services are free of charge regardless of financial or insurance status. Approximately 50% of school's student population is enrolled at the SBHC. It was not known how many that are enrolled utilize the SBHC as their primary provider or for their preventive health care.

Demographics

Both high schools are located in Miami, Florida, Dade County. Miami is a metropolitan area with approximately 2.3 million people. It is the poorest city of its size with 28.5% of the families in the area, nearly 500,000 residents, below the poverty level (US Census Bureau, Census 2000). The per capita income is lower than the Florida state average of $28,366 at $26,093. Unemployment is higher than the state rate of 3.6% at 5.3%. Students with free/reduced lunch comprise 61.4% of the school population, higher than 45.3% for the state (Florida Education and Community Data Profiles, 2003).

Miami-Dade County Public Schools is the 4th largest district in the country with over 370,000 students enrolled in the 2003-2004 school year. The racial composition for the district is 58.9% Hispanic, 28.7% Black, 10.2% White, and 2.0% Asian. The percent of Dade County students passing the high school competency tests in communications for the 2003 school year was 67% compared to 76% for the state. In mathematics the percentage of Dade County students who passed was 66% compared to 75% for the state. The drop out rate for Dade County is 4.2% compared to 3.1% for the state for 2002-2003 (Florida Education and Community Data Profiles, 2003).

Both participating high schools had enrollments of approximately 3000 students for the 2003-2004 school year with populations comprised of 85-95% Black, 5-15% Hispanic and approximately 1% White. Both sites have approximately 40% of the

students enrolled in the free/reduced lunch program and have a drop out rate of 5-10% annually. The mobility index for the schools is 38-40, which means that out of 100 students, 38-40 will transfer in or out during the school year resulting in a significant turnover of students each year.

Setting

John H. Peavy Adolescent Health Center is located in Miami Northwestern Senior High in Liberty City, Florida and the Donnell Morris Adolescent Health Center is located in Miami Carol City Senior High in Carol City, Florida, both in Dade County. They are both managed and funded by the Public Health Trust (Jackson Memorial Hospital). The centers offer both physical and mental health services.

The Public Health Trust, the county designated provider of indigent health care to residents in the county, funds the school-based health centers from a half penny sales tax. The John H. Peavy Adolescent Health Center was established in 1988, originally funded by the Robert Wood Johnson Foundation, and the Donnell Morris Adolescent Health Center was established in 1994.

The SBHC are staffed at each site by a full time Advanced Registered Nurse Practitioner (ARNP), a Registered Nurse (RN), a social worker (MSW), and a Health Services Resource person (HSR). A Supervisor, MSW Supervisor, and Medical Director are shared between the two sites. A nutritionist and health educator also provide periodic services.

Instrument

The Young Adult Health Care Survey (Appendix I) was the instrument used in this study. The YAHCS consist of 56 questions divided into seven sections: 1) health care utilization, 2) privacy, 3) health and safety, 4) health information, 5) health care in the

last 12 months, 6) general health, and 7) demographics. Questions collect nominal data with yes/no answers and ordinal data.

The YAHCS is divided into eight quality measures of the preventive health counseling that are recommended during an adolescent preventive health care visit. The YAHCS quality measures assess provision of recommended preventive health counseling topics: smoking, alcohol use, drug use, helmet use, drinking and driving, steroid use, violence, guns, physical and sexual abuse, sexual activity, diet, weight, exercise, emotional health and relationship issues. The quality measures also assess provision of private and confidential care, helpfulness of counseling, experience of care and access to health information. In addition, the YAHCS also measures participation in risk behaviors such as sexual activity, smoking, alcohol use, seat belt use and general demographic information.

FACCT, the developer of the tool, determined three conditions must be met to allow for comparison between groups. Adolescents must have had the same type visit, such as a preventive health care visit or physical exam. Prior to enrolling in the study, students were asked if they have had a preventive health care exam or routine physical examination in the last year. If so, they were given an informed consent form to take home for their parents to sign and return. At administration of the survey, they were again asked to participate only if they have had a preventive health care exam or routine physical examination in the last year and confirmed by their survey answers. This was to ensure that participants had all had the same type visit.

The second condition that the developer determined must be met was that the same mode of administration must be used, for example either mail or telephone. This study

did not use mail or telephone, although it utilized a single delivery method. The researcher directly handed the survey tool to the subjects and was present while the participants answered the survey questions. This method provided for one mode of administration.

The third requirement was that all participants must have the same payer, whether public or private. This was based on some payers using an NCQA defined health visit and therefore, those adolescents received more preventive health counseling. For the purposes of this study, designed to examine these differences, the adolescents all are considered to have access to the SBHC regardless of ability to pay. Therefore for the purposes of this study, the issue of payer is not applicable.

IRB Approval

The University of Florida Institutional Review Board provided approval to conduct this research in the SBHC. After University of Florida approval was obtained, an application was submitted to the Miami-Dade County School Administration Research Review Board to obtain their permission for the survey to be conducted at the identified schools. Letters of support were obtained from the principals at the schools. The Research Board approved the application and a security clearance was obtained for the researcher to go into the classrooms.

Procedure

The Department Chairperson of social studies was contacted to plan implementation of the study. The chairperson provided the class schedule and set up times for the researcher to attend each class to solicit participation of the 11th-12th grade students. At the scheduled time, the researcher introduced the study to the students and distributed packets containing a letter from the principal describing the research and the

informed consent/assent to be signed by the parents and student. The students were requested to return the informed consents to their teachers in one week. The following week, the researcher returned to obtain the signed consents and have those enrolled in the study participate in the YAHCS. Incentive coupons were distributed participants after completion of the survey.

Participants were placed in either the SBHC or Usual Care group based on the location where participants usually go for medical care (survey question 4). The participants were assigned to the SBHC group if their survey response indicated they usual go for medical care at the SBHC (question 4) and those that obtained well visit care anywhere else were assigned to the Usual Care group. The inclusion criterion was utilization-based and determined by the respondent reporting having had a preventive health care visit or routine physical examination in the past twelve months. This was confirmed in survey questions 1 and 2. Two hundred and seven adolescents consented/assent and participated in the survey.

Participants were guaranteed confidentiality. No identifying information was placed on the survey. The results of this study will be provided to all the participants as well as the Public Health Trust, Miami Carol City High School, Miami Northwestern Senior High, the Miami-Dade Public Schools, and the parents in aggregate form.

Data Analysis

The YAHC Survey permits comparison of the quality of preventive health care provided to adolescents obtaining preventive health care from the SBHC or Usual Care sources using the eight quality measures assessed in the survey. Risk behaviors and demographic variables such as age and gender were also obtained from survey questions. Every tenth data entry was double checked for accuracy prior to statistical analysis.

Descriptive statistics was used to determine the frequency distributions, percentage distributions, means and standard deviations, and inclusive ranges as evidenced by the data. Analyses of frequency and Wilcoxon rank sum test were used to determine if there were differences between the two sources of care. A p-value of less than 0.05 was considered statistically significant.

CHAPTER 4
RESULTS

The purpose of this comparative research was to evaluate patient-reported provider adherence to preventive health guidelines for adolescents that utilize the SBHC for preventive health care compared to those that utilize usual sources of health care. The YAHCS eight quality measures, health status, demographics, and risk behaviors were compared between those who utilize SBHC with those who utilize other sources of care. The purpose of this chapter is to describe and compare the survey data for participants' characteristics and quality of care received, and the statistical significance as they relate to the hypotheses.

Characteristics of Study Participants

Of the 207 returned questionnaires, 177 were suitable for analysis by meeting inclusion criterion. Thirty were excluded for either having a medical visit more than one year ago, providing incongruent answers between having a medical visit in the last year and when the last health care encounter took place, having more than one answer to the question where they "usually go for medical care" when selecting SBHC, or for choosing the emergency room for where they "usually go for medical care". It was felt that those participants that utilize the emergency room for care would not have received adequate preventive health counseling. Thirty-four participants were included in the "SBHC" group and 143 in the "Usual Care" group. Usual Care group included selection of doctors' office, community health center, hospital clinic, family planning center, urgent care or no usual place for where they usually go for medical care.

Demographics

The ages of participants ranged from 16-19 years with frequency distributions showing no significant difference in ages between the SBHC and Usual Care group, p = 0.1820 (Table 4.1). Due to the poor return rate of parental informed consent forms by participants under 18, the most frequent age for participants in the study for both groups was 18 years. Answers to the age question were ordinal and in an analysis using Wilcoxon rank sums test, mean scores showed those utilizing SBHC were significantly older, p = 0.0106 (Table 4.2).

More females completed the survey, with no significant difference in the number of male and female participants between the two groups, p = 0.0554. The frequency of Black participants in the study was the greatest, followed by Hispanic. No significant difference was found using Wilcoxon rank sum test for ethnicity with p = 0.0994 (Table 4.2).

Table 4.1 Frequency and Percent of the Variables Age, Gender, and Ethnicity for SBHC and Usual Care Groups

	SBHC		Usual Care	
Variable	n	%	n	%
Age (p = 0.1820)				
16	1	2.94	14	10.00
17	5	14.71	30	21.43
18	25	73.53	92	65.71
19	3	8.82	4	2.86
Gender (p = 0.0554)				
Female	26	76.47	84	58.74
Male	8	23.53	59	42.26
Ethnicity (p = 0.2353)				
Black	29	85.29	124	86.71
American Indian	1	2.94	2	1.40
Hispanic	3	8.82	13	9.09
Other	1	2.94	4	2.80

Table 4.2 Wilcoxon (Rank Sums) Two Sample Test for Variables' Age and Ethnicity Mean Scores for SBHC Compared to Usual Care

	SBHC	Usual Care	
Variable	Mean Score	Mean Score	P Value
Age	110.25	91.57	0.0106
Descent	103.10	95.41	0.0994

Health Status

Using frequencies and Wilcoxon rank sum test, there was no significant difference between the SBHC and Usual Care group in the participants' report of general health with good to excellent having the greatest frequency, p = 0.5397 and mean scores, p = 0.2139 (Table 4.3). The SBHC group did not show any participants indicating poor health, while the Usual Care group had two. This result may be a result of the low number in the SBHC group.

There was no significant difference in energy between the two groups, with 67% completely or mostly agreeing on "full of energy", with frequency distributions, p = 0.1361, and Wilcoxon rank sum test mean scores, p = 0.2573. The Usual Care group had 5.6% that did not agree with the statement, while the SBHC group had none.

With frequency distributions, no significant difference was found in participants' answers to having "good qualities" with 71% completely or mostly agreeing, p = 0.7809 and using Wilcoxon rank sum test, p = 0.2611. Again, the Usual Care group had three participants that did not agree with this statement, while the SBHC group had none.

There was a significant difference found between the two groups frequency in "satisfied with my life and how I live it" with the Usual Care reporting less agreement in the statement, p = 0.0410, and Wilcoxon rank sum mean scores, p = 0.0363. There was

no significant difference in frequency of days having “pains that really bothered me” in the last four weeks with 76% from no days to one to 3 days, p = 03308 and Wilcoxon rank sum mean scores, p = 0.4912.

There was no significant difference in frequency in the amount of exercise between the two groups with a wide variation in response in activity levels, p = 0.7759, Wilcoxon rank sum mean scores, p = 0.3998. There also was no significant difference found in health or emotional problems impacting activities, with the majority of participants reporting they are healthy most of the time, p = 0.7285, Wilcoxon rank sum mean scores, p = 0.1793. The Usual Care group did have 3.5% of participants reporting to have had a health or emotional problem that kept them from activities for 15-28 days in the last four weeks with 0% in the SBHC group.

Overall, the participants in both groups reported being in good health, an expected result for the adolescent age group. The two groups are similar for demographics and health status, making the two groups appropriate for comparison purposes. The only significant differences in the two groups was in the mean scores for age, with the SBHC group being older, and in the Usual Care group satisfaction with life. Age may hold implications for results, as it is known that older teens are more engaged in risk behaviors, particularly sexual behaviors.

Although not significant, the Usual Care group had participants that rate their health as “poor”, did not agree with “I am full of energy”, “I have a lot of good qualities”, and reported health or emotional problems in the last four weeks. Larger numbers in the SBHC group and socio-economic demographics may be warranted in future studies.

Table 4.3 Mean Score, Frequency and Percent of the Variables for Questions About Health for SBHC and Usual Care Groups

	SBHC Group			Usual Care Group		
Variable	Mean	n	%	Mean	n	%
General Health	91.04			98.56		
Excellent		11	32.35		32	22.38
Very Good		12	35.29		47	32.87
Good		8	23.53		52	36.36
Fair		3	8.82		10	6.99
Poor		0	0.00		2	1.40
Full of Energy	92.16			98.26		
Completely Agree		10	29.41		32	22.38
Mostly Agree		10	29.41		66	46.15
Agree a Little		14	41.18		36	25.17
Do Not Agree		0	0.00		8	5.59
Have good qualities	92.87			98.07		
Completely Agree		24	70.59		95	66.43
Mostly Agree		7	20.59		35	24.48
Agree a Little		3	8.82		10	6.99
Do Not Agree		0	0.00		3	2.10
Satisfied with Life	93.84			100.44		
Completely Agree		15	44.12		48	33.57
Mostly Agree		18	52.94		59	41.26
Agree a Little		1	2.94		29	20.28
Do Not Agree		0	0.00		7	4.90
Bothered by pain	96.83			97.05		
No days		12	35.29		60	41.96
1-3 days		17	50.00		47	32.87
4-6 days		2	5.88		21	14.69
7-14 days		2	5.88		7	4.90
15-28 days		1	2.94		8	5.59
Exercised hard	95.06			97.51		
No days		13	38.24		42	29.37
1-9 days		12	35.29		47	32.87
10-13 days		3	8.82		19	13.29
14-20 days		2	5.88		10	6.99
21-28 days		4	11.76		25	17.48
Health/Emotion Issues	90.64			98.66		
No days		23	67.65		82	57.34
1-3 days		7	20.59		35	24.48
4-6 days		3	8.82		15	10.49
7-14 days		1	2.94		6	4.20
15-28 days		0	0.00		5	3.50

Findings

Questionnaire responses were categorized into the quality measures as previously described and are listed in Table 4.4.

Table 4.4 YAHCS Quality Measures Descriptions of Subscales

YAHCS Quality Measures	Quality Measures Included Topics
1. Prevention of risky behaviors	Counseling/screening for helmet use, drunk driving, violence, guns, chewing tobacco, street drugs, steroid and prescription drugs, sexual orientation, sexual/physical abuse and seat belt use (Questions: 11 a-d, 12 a-c, 13a, 13c, 33)
2. Pregnancy and STDs prevention	Counseling/screening for STDs, condoms and birth control Questions: 13b, 28,30)
3. Diet and exercise	Counseling/screening for weight, healthy eating and physical activity or exercise (Questions: 9a-c)
4. Mental health counseling	Counseling/screening for feeling sad, emotions or moods suicide (Questions: 10 a-d, 15)
5. Privacy and confidentiality	Reported having had a private visit alone with provider and having been informed that information was confidential (Questions: 6,7)
6. Helpfulness of counseling	Report of helpfulness of counseling on selected topics including cigarettes and smoking, alcohol, condoms and STDs and birth control (Questions: 18, 21, 25, 29, 31)
7. Experience of care	Reported helpfulness of staff, provider listens carefully, speaks language that is understood, explains things clearly, shows respect and spends enough time (Questions: 38-43)
8. Health Information	Had access to posters, pamphlets and any other health information on safety and risks of smoking, drinking and substance use, benefits of healthy diet and exercise, and tips to prevent STDs (Questions: 34-37)

Using Wilcoxon rank sum test, the SBHC mean scores were higher in all quality measure categories and were significantly higher in five of the eight quality measures (Table 4.5), using a 95% significance level, p-value of 0.05 or less.

Quality measure 1, counseling and screening to prevent risky behaviors, was significantly greater for the SBHC than Usual Care with p = 0.0044. Counseling and screening to prevent unwanted pregnancy and STDs, Quality measure 2, was also significantly higher for the SBHC group with p = 0001. Quality measure 3, counseling and screening related to depression, mental health and relationship, had a significance with p = 0.0002, indicating the SBHC group received more counseling. The SBHC was found to have a significantly higher mean score for quality measure 5, care provided in a confidential and private setting, with p = 0.0004. Quality measure 6, helpfulness of counseling provided, was significantly higher for the SBHC group, with p = 0.0357.

The other three categories had higher mean scores for the SBHC group, but not to a level of significance. Quality measure 3, counseling and screening related to diet and exercise, the mean score for participants receiving counseling was 94.79 for SBHC group versus 87.62 for the Usual Care group, with p = 0.2319. Communication and experience of care, quality measure 7, did not show a significance difference, although the mean score for the SBHC group was 98.97 versus 86.63 for the Usual Care group with p = 0.1026. The mean score on quality measure 8, health information, was not significantly different, although the mean score for the SBHC was higher, 92.21 versus 88.24 for the Usual Care group with p = 0.3366.

An examination of the frequencies, percentages and mean scores of each individual question included in the eight quality measures are included in Tables 4.6

through 4.13. Questions with nominal answers are expressed in frequency and percentages, and significance is expressed by p-values, 0.05 or less indicating a significant variation in values between SBHC and Usual Care groups. Questions with ordinal answers are expressed with mean scores, and significance is expressed with p-values, 0.05 indicating significant variation between SBHC and Usual Care groups.

In all quality measures, the SBHC means were higher than the Usual Care. In five quality measures the difference in scores was significant. Hypothesis 1, adolescents utilizing a School-Based Health Center for preventive health care visits receive more of the recommended adolescent preventive health care counseling and screening than those who utilize usual sources, using the results of Young Adult Health Care Survey (YAHCS) as the measurement tool of eight quality measures, was supported by the data.

Table 4.5 Wilcoxon (Rank Sums) for Variables' Quality Measure Mean Scores and P Values for SBHC Compared to Usual Care

Variable	SBHC Mean Score	Usual Care Mean Score	P Value
Quality Measure:			
1. Prevention of Risky Behaviors	1009.28	84.18	0.0044
2. Pregnancy and STD Prevention	120.06	81.62	<.0001
3. Diet and Exercise	94.79	87.62	0.2139
4. Mental Health Counseling	115.65	82.66	0.0002
5. Privacy and Confidentiality	112.19	83.48	0.0004
6. Helpfulness of Counseling	69.56	56.63	0.0357
7. Experience of Care	98.97	86.63	0.1026
8. Health Information	92.21	88.24	0.3366

Table 4.6 Frequency, Percentage and P Value for Variables Quality Measure 1: Prevention of Risky Behaviors for SBHC and Usual Care

	SBHC				Usual Care				
	Yes		No		Yes		No		
Variable	n	%	n	%	n	%	n	%	P Value
11a. Provider discussed helmet use	5	14.71	29	85.29	12	8.45	130	91.55	0.2674
11b. Discussed riding with drinker/ drug user	12	35.29	22	64.71	33	18.64	110	76.92	0.1414
11c. Discussed violence prevention	13	38.24	21	61.02	35	24.48	108	75.52	0.1048
11d. Discussed guns and weapons	9	26.47	25	73.53	18	12.59	125	87.41	0.0430
12a. Discussed chewing tobacco	10	29.41	24	70.62	18	12.59	125	87.41	0.0157
12b. Provider discussed drug use	18	52.94	16	47.06	54	37.76	89	62.24	0.1053
12c. Provider discussed steroid use	11	32.35	23	67.65	37	25.87	106	74.13	0.4450
13a. Discussed sexual orientation	16	47.06	18	52.94	57	39.86	86	60.14	0.4434
13c. Discussed abuse	22	64.71	12	35.29	63	44.06	80	55.94	0.0303
33. Provider discussed seatbelts	12	35.29	22	64.71	32	22.38	111	77.62	0.1173

Table 4.7 Frequency, Percentage and P Value for Variables Quality Measure 2: Pregnancy and STD Prevention for SBHC and Usual Care

	SBHC				Usual Care				
	Yes		No		Yes		No		
Variable	n	%	n	%	n	%	n	%	P Value
13b. Provider discussed STDs	30	88.24	4	11.76	91	63.64	52	36.36	0.0056
28. Provider discussed condoms	27	79.41	7	20.59	72	50.70	70	49.30	0.0024
33. Provider discussed birth control	23	67.65	11	32.35	49	34.27	94	65.73	0.0004

Table 4.8 Frequency, Percentage and P Value for Variables Quality Measure 3: Diet and Exercise for SBHC and Usual Care

	SBHC				Usual Care				
	Yes		No		Yes		No		
Variable	n	%	n	%	n	%	n	%	P Value
9a. Provider discussed weight	25	73.53	9	26.47	96	67.13	47	32.87	0.4710
9b. Discussed healthy eating	26	76.47	8	23.53	92	64.34	51	35.66	0.1773
9c. Provider discussed exercise	24	70.59	10	29.41	101	70.63	42	19.23	0.9962

Table 4.9 Frequency, Percentage and P Value for Variables Quality Measure 4: Mental Health Counseling for SBHC and Usual Care

	SBHC				Usual Care				
	Yes		No		Yes		No		
Variable	n	%	n	%	n	%	n	%	P Value
10a. Provider discussed friends	14	41.18	20	58.82	31	21.68	112	78.32	0.0189
10b.Provider discussed grades	19	55.88	15	44.12	56	39.16	87	49.15	0.0761
10c. Provider discussed emotions	26	76.47	8	23.53	62	35.03	81	56.64	0.0005
10d. Provider discussed suicide	13	38.4	21	61.76	17	11.89	126	88.11	0.0002
15. Provider discussed depression	11	32.35	23	67.65	25	17.48	118	82.52	0.0528

Table 4.10 Frequency, Percentage and P Value for Variables Quality Measure 5: Privacy and Confidentiality for SBHC and Usual Care

	SBHC				Usual Care				
	Yes		No		Yes		No		
Variable	n	%	n	%	n	%	n	%	P Value
6. Spoke privately with provider	31	91.18	3	8.82	97	67.83	46	32.17	0.0062
7. Provider discussed confidentiality	30	88.24	4	11.76	87	61.27	55	38.73	0.0028

Table 4.11 Mean Score and P Value for Variables Quality Measure 6: Helpfulness of Counseling for SBHC and Usual Care

Variable	SBHC Mean Score	Usual Care Mean Score	P Value
18. Helpfulness in smoking counseling	26.83	25.08	0.3555
21. Helpfulness in quitting smoking	5.50	2.88	0.0573
25. Helpfulness in alcohol use/risks	25.71	20.56	0.1072
29. Helpfulness in condom/ HIV/STDs	62.88	55.95	0.1167
31.Helpfulness in birth control use	44.37	39.41	0.1767

Table 4.12 Mean Score and P Value for Variables Quality Measure 7: Experience of Care for SBHC and Usual Care

Variable	SBHC Mean Score	Usual Care Mean Score	P Value
38. How often office staff was helpful	99.19	86.58	0.0886
39. How often provider listened carefully	99.53	86.50	0.0730
40. How often had difficulty due to language	83.83	89.62	0.2209
41. How often explanations were understandable	94.29	87.11	0.7981
42. How often provider showed respect	81.10	90.27	0.1338
43. How often provider spend enough time	100.71	86.22	0.0612

Table 4.13 Frequency, Percentage and P Value for Variables Quality Measure 8: Health Information for SBHC and Usual Care

	SBHC				Usual Care				
	Yes		No		Yes		No		
Variable	n	%	n	%	n	%	n	%	P Value
34. Information on safety tips	18	52.94	16	47.06	63	44.06	80	55.94	0.3499
35. Information on smoking/drugs	25	73.53	9	26.47	101	71.13	41	28.87	0.7802
36. Information on diet and exercise	25	75.76	8	24.24	113	79.02	30	20.98	0.6813
37.Information on STD prevention	30	88.24	4	11.75	124	86.71	19	13.29	0.8125

To evaluate hypothesis 2, the risk behavior questions results are reported in Tables 4.14 and 4.15. Only one measure had a significant variation between mean scores of the SBHC and the Usual Care group. Depression was significantly higher rate in the SBHC group. This result may be associated with the mental health services available at the SBHC. For six of the seven questions, the two groups are not significantly different in their risk behaviors. It may be the if ages are held constant the risk behaviors might lower as the SBHC group mean age was higher, known to result in higher risk behaviors.

Table 4.14 Frequency, Percentage and P Value for Variables Risk Behaviors for SBHC and Usual Care

	SBHC				Usual Care				
	Yes		No		Yes		No		
Variable	n	%	n	%	n	%	n	%	P Value
14. Felt sad/hopeless 2 + weeks last year	22	64.71	12	35.29	63	44.06	80	55.94	0.0303
19. Ever smoked in last year	4	11.76	30	88.24	7	4.93	135	95.07	0.1392
26. Ever had sexual intercourse	26	76.47	8	23.53	108	76.06	34	23.94	0.9594

Table 4.15 Mean Score and P Value for Variables Risk Behaviors for SBHC and Usual Care

Variable	SBHC Mean Score	Usual Care Mean Score	P Value
16. How many days did you smoke in last 30 days	92.82	88.09	0.0902
22. How many days did you drink alcohol in past 30 days	92.76	87.48	0.2435
23. How many days had 5+drinks in past 30 days	43.80	37.84	0.0653
32. How often wear a seatbelt in a car	84.07	90.17	0.2608

Hypothesis 2, risk behaviors of adolescents that utilize the SBHC for a preventive health care differ significantly from that that utilize usual care, was not supported by the data.

Other measures in the YAHCS that are of interest, although not related to the hypotheses, are shown in Tables 4.16 and 4.17. Overall rating of care was significantly higher for the SBHC group. The SBHC group received significantly more counseling on quitting smoking. The SBHC group received more counseling about alcohol than the Usual Care group, although not to a level of significance. The Usual Care group had several with serious health problems that went untreated, while the SBHC group had none, although missing the 95% level of significance, p = 0.0554.

Table 4.16 Mean Score and P Value for Variables Other Ordinal Questions for SBHC and Usual Care

Variable	SBHC Mean Score	Usual Care Mean Score	P Value
44. How much of a problem getting care	85.03	88.71	0.3329
46.Overall rating of care	107.29	75.33	0.0002

Table 4.17 Frequency, Percentage and P Value for Variables Other Nominal Questions for SBHC and Usual Care

	SBHC				Usual Care				
	Yes		No		Yes		No		
Variable	n	%	n	%	n	%	n	%	P Value
17. Provider talked about smoking	8	23.53	26	76.47	29	20.42	113	79.58	0.6896
20. Provider talked about quitting	3	75.00	0	0.00	1	7.69	8	61.54	0.0151
Did not tell smoked			1	25.00			4	30.77	
24. Provider talked about alcohol use	10	32.26	21	67.74	29	20.57	112	79.43	0.1593
45. Serious problem untreated	0	0.00	34	100	14	9.93	127	90.07	0.0554

CHAPTER 5
DISCUSSION

The purpose of this survey research was to compare patient-reported provider adherence to preventive health guidelines between adolescents who utilize the SBHC for preventive health care and those who utilize usual sources of health care. It was hypothesized that the SBHC group would receive significantly more preventive health counseling than the Usual Care group and that they would engage in significantly fewer risk behaviors as a result of the quality of preventive health care received. Scores from the YAHCS eight quality measures and risk behaviors were compared between those who utilize SBHC with those who utilize other sources of care. Demographic and health status information was collected for comparison to ensure similar populations of participants in the two study groups.

The research design was a retrospective comparative survey design with two convenience samples. Two hundred and seven participants were recruited, with 177 meeting criterion for inclusion in the study. Thirty-four were enrolled into the SBHC group and 143 were enrolled into the Usual Care group. The dependent variables from the YAHCS were measured in frequencies, percentages and Wilcoxon rank sum mean scores, with a p-value of 0.05 or less considered statistically significant. The SBHC group and Usual Care group were the independent variables.

This chapter presents a discussion of the research findings as they relate to the hypotheses and reviews the sample characteristics, demographics, health status, and other information obtained from the survey results. Implications of findings, recommendations

for future utilization of YAHCS, and recommendations for future SBHC research are presented.

Sample Characteristics

Demographics

The study participants were predominately 18-year-old self-consenting black female adolescents ranging in age from 16 to 19 years (Table 4.1, 4.2). The predominance of 18 year-olds was in part due to the poor return rate for the informed consents/assents from parents and younger students. The mean age in the SBHC group was significantly higher than the Usual Care group (Table 4.2). Typically, enrollment in the SBHC increases with each grade and the longer students attend school, the more likely they are to have enrolled and utilized the SBHC. To obtain larger numbers of participants who utilize the SBHC, 11th and 12th graders were selected for the study. The results for mean age is understandable as older students utilize the SBHC more than younger students.

Ethnicity and gender (Table 4.1 and 4.2) were not significantly different between the two groups, although the SBHC group had a higher frequency of female participants. The general population of the high school is fairly evenly distributed between females and males and the invitation to participate in the study was extended to all 11th and 12th grade students regardless of gender. The results showed more females participants for both groups that may be the result of higher utilization of preventive health care services by females. It is known that male adolescents utilize health care services the least of any group (Marcell et al., 2001).

Health Status

Most of the participants in both groups were reported to be in good to excellent health (Table 4.3). A significant difference was noted in satisfaction in life and how they live it. The Usual Care group had approximately 25% of participants who agreed a little or not at all to being satisfied in their life and how they live it. Other sample characteristics between the two groups that may contribute to this difference, such as socio-economic status, were not collected in this study.

Overall, health status data between the groups were similar as well as demographics. The only significant differences were in mean age and satisfaction with life. Consequently, the SBHC group and Usual Care group were determined to be suitable for comparison purposes.

Adherence to Preventive Health Guidelines

The hypothesis, adolescents utilizing a School-Based Health Center for preventive health care visits receive more of the recommended adolescent preventive health care counseling and screening than those who utilize usual sources (using the eight quality measures in the YAHCS) was supported by the statistical analysis. The eight quality measures are described in Table 4.4. Five of the eight quality measures mean scores indicated that SBHC group received significantly more preventive health counseling than other the Usual Care group (Tables 4.5). For the other three quality measures, the SBHC group received more counseling and had higher mean scores than the Usual Care group, although not to significant levels. Overall the results demonstrated that the SBHC group received more of the recommended preventive health counseling and screening than the Usual Care group who received care from other sites within the community.

The SBHC group received significantly more counseling for quality measure 1, prevention of risky behavior including helmet use, drunk driving, violence, tobacco, drugs, sexual orientation, physical and sexual abuse and seat belt use (Table 4.6). Many of these topics are related to the major causes of morbidity and mortality in adolescents and are preventable (Grunbaum et al., 2001; Klein et al., 2002).

The SBHC group received more counseling for quality measure 2, pregnancy and STD prevention including STDs prevention, condom use and birth control with a high significance (Table 4.7). The frequency for sexual activity was not significantly different between the two groups, and therefore both groups should have received similar counseling on sexual behavior (Table 4.14). In both groups 76% of all participants reported sexual activity and discussion on these topics is paramount.

Bethell et al. (2001) found older female adolescents were more likely to report screening and counseling on topics related to sexual activity. This study SBHC group as predominately female and may have contributed to more counseling on sex topics. The schools included in this research have the highest HIV rates in the nation; consequently dialog with sexual active youth on these topics is vitally important (Miami-Dade County, 2004).

Quality measure 4, mental health counseling discussing friends, school performance, emotions and suicide, was significantly higher for the SBHC group than the Usual Care group (Table 4.9). The inclusion of mental health services as part of the SBHC model may have contributed to the significant difference in discussion of mental health issues.

Bethell et al. (2001) found that those who reported private time with providers and were engaging in risky behaviors were more likely to receive preventive counseling and screening. Quality measure 5 (privacy and confidentiality) was found to be significantly higher for the SBHC group (Table 4.10). The setting for the SBHC, where parents are not usually present during examinations, may contribute to the higher reported private time. In addition, the higher scores for the quality measure privacy and confidentiality in the SBHC group may contribute to more overall preventive health counseling and screening.

The SBHC group received significantly higher scores for counseling on prevention of risky behaviors, pregnancy and STD prevention, and mental health, and in addition, the participants rated the helpfulness of the counseling significantly higher (Table 4.11). This result may be a consequence of the SBHC primary specialty in adolescent health care and the resultant expertise or due to the overall increased amount of preventive health counseling received by the SBHC group.

Frequencies for diet and exercise counseling for the SBHC group were higher for two of the three questions, but not significantly different (Table 4.8). Diet and exercise are not as sensitive in nature to discuss as sexual behaviors and other risk behaviors and, therefore providers for the Usual Care group may be more comfortable providing discussion on these issues.

Experience of care was not significantly different between the two groups, although the SBHC group's overall mean score was higher (Table 4.5). It might be expected that both groups would provide the same level for experience of care. Although not significant, in four of the six questions, the SBHC had higher mean scores (Table 4.12).

Health information (the provision of health information through pamphlets, brochures and other written-type instruments) was not significantly different for the two groups (Table 4.13). The SBHC group did obtain higher frequencies in three out of the four questions, although none were to a level of significance. The only question that the SBHC group did not have a higher frequency was related to diet and exercise. This quality measure was not a measure of provider interaction and it may be expected that the two groups would not be significantly different in providing this type of health information.

It is of interest that in two different measures related to diet and exercise, the Usual Care group did as well as the SBHC group. This may be an indication of the difference in the level of comfort of the Usual Care group providers dealing with non-sensitive issues with adolescents, such as diet and exercise, when compared to sensitive issues such as sexual activity and other risk behaviors.

Bethell (2001) found that those engaging in risk behaviors were more likely to receive preventive health counseling. Both the SBHC group and the Usual Care group reported similar risk behaviors. Although risk behaviors were similar, it was clearly evident that participants in the SBHC group received significantly more preventive counseling.

Risk Behavior Reduction

Hypothesis 2, adolescents that utilize the SBHC for preventive health care engage in fewer risk behaviors than those that utilize usual sources, was not supported. For six of the seven risk behaviors that were measured by questions in the YAHCS, including smoking, sexual activity, drinking alcohol, binge drinking, and seatbelt use, the two groups were not significantly different (Table 4.14, 4.15). Only reported depression

(sad/hopeless for two weeks or more in a row in the past year) was higher for the SBHC group. The significant difference in reported depression may be due to the mental health services offered by the SBHC that are typically not available at usual sources of care. These services may attract a disproportionate number of students that have mental health issues to the SBHC. Overall, the data showed that the two groups were not significantly different in risk behaviors.

As previously discussed, the SBHC group's mean age was significantly higher (Table 4.2). Older adolescents report higher risk behaviors, particularly sexual activity (Bethell, 2001). Thus, the SBHC group would be expected to have a higher frequency of risk behaviors, particularly for sexual activity. However, the frequency for sexual activity was essentially the same for both groups (Table 4.14). It is possible preventive health counseling in the SBHC resulted in a reduction of risk for sexual activity.

In an effort to evaluate health outcomes from adherence to preventive health care guidelines, responses in the YAHCS pertaining to health status were evaluated. Health status scores were not found to be significantly different between the two groups, with the exception of satisfaction with life that was higher for the SBHC group (Table 4.3). Mean scores for the SBHC group was more favorable, but not significant in all categories that included a higher rating for overall health and having fewer days bothered by health or emotional issues. Health status may be an important outcome variable to measure in future studies.

The high schools surveyed have a highly mobile population of students moving in and out of the schools with a mobility index of 38-40 (Florida Education and Community Data Profiles, 2003). Students often don't begin to access the SBHC until the later years

of high school. Questions not asked of the participants, such as how long they had used the SBHC or how often they use the SBHC, might have provided useful information on why there were no significant differences overall in risk behaviors between the two groups. One would expect that with increased preventive health screening and counseling that risk behavior would be reduced, although knowledge does not always translate into measurable behavioral changes (Kisker et al., 1996; Klein et al., 2002; Goldstein, Whitlock, & DePue, 2004).

The importance of providing preventive health counseling to adolescents is well accepted. The SBHC consistently provided more preventive health counseling to the participants surveyed. However, significant outcomes from the counseling for the reduction of risk behavior or for improved health status were not found. More information is needed on socio-economic variables, length of SBHC use and risk behaviors prior to enrollment to examine outcomes for risky behaviors or health status.

Other Significant Results

The overall rating of care was significantly higher for the SBHC group (Table 4.16) and they reported higher satisfaction with care. Obtaining private and confidential health care, helpfulness of counseling, and the overall higher scores for the quality measures for the SBHC group may be important satisfaction variables.

Frequencies for question 45 (had a serious health problem that went untreated) were higher for the Usual Care group (Table 4.17). The SBHC group had no respondents indicating a serious problem that went untreated compared to the Usual Care group, in which had 10% of participants reporting they had serious problems that went untreated. This finding may be related to SBHC elimination of non-financial barriers to care such as

transportation and parents taking time off work when adolescents have serious health issues.

All of the SBHC group participants that smoked received counseling on quitting compared to only a small percentage of the Usual Care group (Table 4.17). The numbers of smoker were small and a larger sample of smokers is needed for future comparisons.

Less than 20% of those surveyed utilize the SBHC as their usual source for medical care. Consequently, SBHC need to encourage more students to utilize this excellent source for free health care services. School-based health centers have been shown to be effective in improving access to primary care, reducing ER visits, and increasing preventive health care visits (Adams et al., 2002; Kaplan et al., 1999; Key et al., 2002). By reducing non-financial barriers to care, such as transportation and time off work, SBHC have been shown to improve access to care for school-aged children. It is important to note that many students do not access the SBHC services until the junior or senior year. Further investigation is warranted to determine what barriers there are to utilizing the SBHC by the students.

This study concluded that SBHC surveyed provided a higher quality of adolescent preventive health care when compared to usual sources of care, as measured by adherence to preventive health guidelines. The adolescent is more likely to receive preventive health counseling if they have private time with the provider and SBHC allow adolescents to access care with increased opportunities for privacy.

Summary

Emphasis on counseling and screening guidelines for adolescents is considered important because the leading cause of morbidity and mortality are the result of risky behaviors, such as smoking, sexual activity, drinking and driving (Grunbaum et al.,

2001). Many studies have shown providers do not offer enough preventive health counseling and screening (Blum et al., 1996; Byrd et al., 1999; Goodwin et al., 1999; Halpern-Fisher et al., 2000; Hedberg et al, 1998; Merenstein et al., 2001; Yu et al, 2002). In this study, the SBHC group received more preventive health counseling and screening than Usual Care group in every quality measure with five measures significantly higher (Table 4.5). The YAHCS provided a reliable, valid, and easy to administer method for the assessment of preventive health care counseling by SBHC compared to usual sources of care. This survey was useful in providing information on the quality of preventive health care, demographics, health status, and the incidence of risk behaviors in the selected sample.

School-Based Health Centers' health care services focus exclusively on the selected school populations they serve. This study compared the quality of adolescent preventive health services at two SBHC to other usual health care providers within the community. The usual care sources may or may not focus exclusively on adolescent health care and, therefore their expertise and comfort in dealing with counseling adolescents on sensitive issues may be less than the SBHC that deal exclusively with adolescents.

Adolescents who utilize the SBHC may differ in some ways to the others that utilize usual care. This study found that gender and ethnicity were similar. The ages of participants in the SBHC group participants were significantly older than those in the Usual Care group. Socio-economic data was not collected with this study and not available for comparison.

Future Research

Future research should consider surveying larger numbers of participants to allow for comparison and matching of characteristics and to provide for generalizability of

results. If administered widely, useful information may be obtained about the students that use SBHC and the preventive health care they receive compared to those that do not utilize these valuable health care services. For this type of survey research, it was restrictive to have a 10-page informed consent form for parental consent and assent and expect to have significant numbers returned. The lengthy informed consent created a barrier to participation in this study. It is important to consider that when examining outcomes from preventive services, sample size requirements for significance may be prohibitive (Downs et al., 1995). As evidenced by the numerous guidelines, it is generally accepted that preventive health counseling does impact behavioral change, but is much more difficult to evaluate (Goldstein et al., 2004; Logsdon, Lazaro, & Meier, 1989; Moyer & Butler, 2004). Innovative research is needed to examine outcomes of the preventive health care in the SBHC, pre- and post-counseling, and over time to support this model of care.

Research has shown that adolescents who utilize SBHC receive significantly more preventive health care counseling visits than adolescents utilizing the pediatric clinic (McHarney-Brown et al., 1991; Adams et al., 2000). This study is one of few evaluating the quality of preventive health care provided by SBHC. This research supports that the SBHC surveyed do more to meet the Healthy People 2010 indicators through adherence to adolescent preventive health guidelines than usual sources of care. All participants in the SBHC group reported that they did not have a serious health need unmet while nearly 10% of the Usual Care group had a serious health need unmet. In addition, SBHC were found have a significantly higher overall rating of care and therefore are an important

resource for adolescents accessing health care. More quality-focused research is needed to support these findings and the SBHC model of health care.

Evaluative research is needed to mainstream SBHC and ensure the financial sustainability. The quality and effectiveness of health care at SBHC must meet community standards and be comparable or better than usual sources of care to promote community acceptance of SBHC program and impact public policy support for programs. Policymakers must be made aware of the ability for SBHC to provide improved access and quality preventive health care to adolescents to support financing these programs.

Research evaluating quality processes and outcomes are essential to encourage policymakers to fund SBHC programs. This research supports that adolescents who utilized the SBHC received more quality preventive health counseling than those who utilized usual sources of care. The YAHCS is a useful tool to evaluate and compare the quality of adolescent preventive health care.

APPENDIX
YOUNG ADULT HEALTH CARE SURVEY (YAHCS) VERSION 2

FACCT
FOUNDATION FOR ACCOUNTABILITY

CAHMI
The Child and Adolescent Health Measurement Initiative

Young Adult Health Care Survey (YACHS)

Author: FACCT

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Young Adult Health Care Survey
Version 2.0

Instructions

1. In this survey, the term doctor or other health provider is used. A doctor or other health provider could be a general doctor, a specialist doctor, a nurse practitioner, a physician assistant, a nurse, or anyone else you see for health care.

2. Answer all the questions by checking the box like this:

☐	☑
Yes	No

3. You are sometimes told to skip over some questions in this survey. When this happens you will see an arrow and then a note that tells you what question to answer next, like this:

☐	☐
Yes	No ➔ **(Go to page 4 and continue with question 10)**

So, if you choose to answer "No" to this question, then you will go to page 4 of this survey and continue the survey with question 10.

Thank you for your help with this survey !

YOUNG ADULT HEALTH CARE SURVEY

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SECTION I – HEALTH CARE UTILIZATION

Please answer all the questions in this survey by checking the box on top of your answer.

1. Have you been to see a doctor or other health provider in the **last 12 months**?

1☐ Yes 2☐ No

2. When was the **last time** you went to a doctor or other health provider for **regular** or **routine** care?

1☐ I did not go to a doctor or clinic for a regular check-up
2☐ 0-6 months ago
3☐ 7-12 months ago
4☐ 13-24 months ago
5☐ more than 2 years ago

3. The **last time** you had a visit with a doctor or other health provider, did you fill out a checklist or survey about your health?

1☐ Yes 2☐ No

4. Where do you **usually** go for medical care?

1☐ Doctor's office or clinic
2☐ School Nurse
3☐ Community clinic/health center
4☐ Hospital clinic
5☐ Hospital emergency room
6☐ Family Planning Center (For example: Planned Parenthood)
7☐ Urgent Care Clinic
8☐ No One Usual Place

5. In **last 12 months** is there any **other** place that you have gone to for medical care?
Check all that apply

1☐ No other place
2☐ Doctor's office or clinic
3☐ School Nurse
4☐ Community clinic/health center
5☐ Hospital clinic
6☐ Hospital emergency room
7☐ Family Planning Center (For example: Planned Parenthood)
8☐ Urgent Care Clinic

SECTION II PRIVACY

6. In the **last 12 months,** did you get a chance to speak with a doctor or other health provider privately? (Meaning one on one - without your parents or other people in the room).

1☐ Yes 2☐ No

7. In the **last 12 months,** did a doctor or other health provider tell you that what you talked about with them was confidential? (Meaning it would not be shared with anyone else.)

1☐ Yes 2☐ No

8. Do you know of a place (other than the school nurse) where teenagers can go to see a doctor or other health provider without their parents knowing about it?

1☐ Yes 2☐ No

YOUNG ADULT HEALTH CARE SURVEY

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SECTION III HEALTH AND SAFETY

9. In the **last 12 months,** did a doctor or other health provider talk with you about any of the following?

Please answer each of the questions below by placing an X in the Yes or No box.		Yes	No
a.	Weight	1☐	2☐
b.	Healthy eating or diet	1☐	2☐
c.	Physical activity or exercise	1☐	2☐

10. In the **last 12 months,** did a doctor or other health provider talk with you about any of the following?

Please answer each of the questions below by placing an X in the Yes or No box.		Yes	No
a.	Your friends	1☐	2☐
b.	Your school performance or grades	1☐	2☐
c.	Your emotions or moods	1☐	2☐
d.	Suicide	1☐	2☐

11. In the **last 12 months,** did a doctor or other health provider talk with you about any of the following?

Please answer each of the questions below by placing an X in the Yes or No box.		Yes	No
a.	Using a helmet when riding a bicycle, roller-blading, or skateboarding	1☐	2☐
b.	Riding in a motor vehicle with a driver who has been drinking or using drugs	1☐	2☐
c.	Violence prevention	1☐	2☐
d.	Guns and other weapons	1☐	2☐

12. In the **last 12 months,** did a doctor or other health provider talk with you about any of the following?

Please answer each of the questions below by placing an X in the Yes or No box.		Yes	No
a.	Chewing tobacco or snuff	1☐	2☐
b.	Drug Use (including marijuana, cocaine, crack, heroin, acid, speed, ecstasy, roofies, or other)	1☐	2☐
c.	Use of steroid pills or shots without a doctor's prescription	1☐	2☐

13. In the **last 12 months,** did a doctor or other health provider talk with you about any of the following?

Please answer each of the questions below by placing an X in the Yes or No box.		Yes	No
a.	Sexual orientation (that is, being gay or straight)	1☐	2☐
b.	Sexually transmitted diseases, or STD's (such as gonorrhea or chlamydia)	1☐	2☐
c.	Sexual or physical abuse	1☐	2☐

YOUNG ADULT HEALTH CARE SURVEY

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The next questions ask about how you feel.

14. During the **past 12 months,** did you ever feel so sad or hopeless almost every day for **two weeks** or more in a row that you stopped doing some usual activities?

1❑ Yes 2❑ No

15. In the **last 12 months,** did you and a doctor or other health provider talk about whether you ever felt sad or hopeless almost every day?

1❑ Yes 2❑ No

The next questions ask about tobacco and smoking.

16. During the **past 30 days,** on how many days did you smoke cigarettes?

1❑ 0 days (Didn't smoke any cigarettes) 2❑ 1 or 2 days 3❑ 3 to 5 days 4❑ 6 to 9 days 5❑ 10 to 19 days 6❑ 20 to 29 days 7❑ All 30 days

17. In the **last 12 months,** did you and a doctor or other health provider talk about cigarettes or smoking?

1❑ Yes ↓ 2❑ No → **Go to question 19**

18. How helpful was this discussion in understanding the risks of cigarettes or smoking to your health?

1❑ Not at all helpful 2❑ Somewhat helpful 3❑ Helpful 4❑ Very helpful 5❑ Not sure

19. In the **last 12 months,** have you **ever** smoked cigarettes?

1❑ Yes ↓ 2❑ No → **Go to question 22**

20. In the **last 12 months,** did you and a doctor or other health provider talk about how and why to quit smoking (such as setting a date to quit)?

1❑ Yes ↓ 2❑ No → **Go to question 22** 3❑ No, because I did not tell my doctor or other health provider that I have smoked cigarettes → **Go to question 22**

21. How helpful were your discussions in quitting smoking?

1❑ Not at all helpful 2❑ Somewhat helpful 3❑ Helpful 4❑ Very helpful 5❑ Not sure

The next questions ask about drinking alcohol.

Examples of drinking alcohol include drinking beer, wine, wine coolers, and liquor such as tequila, rum, gin, vodka, or whiskey. For these questions, drinking alcohol does not include drinking a few sips of wine for religious purposes.

22. During the **past 30 days,** on how many days did you have at least one drink of alcohol?

❑ 0 days (Didn't drink alcohol) ↓ **Go to question 24** 2❑ 1 or 2 days 3❑ 3 to 5 days 4❑ 6 to 9 days 5❑ 10 to 19 days 6❑ 20 to 29 days 7❑ All 30 days

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23. During the **past 30 days,** on how many days did you have 5 or more drinks of alcohol in a row, that is, within a couple of hours?

1❑ 0 days (Didn't drink 5 or more drinks of alcohol in a row) 2❑ 1 or 2 days 3❑ 3 to 5 days 4❑ 6 to 9 days 5❑ 10 to 19 days 6❑ 20 to 29 days 7❑ All 30 days

24. In the **last 12 months,** did you and a doctor or other health provider talk about alcohol use?

1❑ Yes ↓ 2❑ No → **Go to question 26**

25. How helpful was this discussion in understanding alcohol use and its risk to your health?

1❑ Not at all helpful 2❑ Somewhat helpful 3❑ Helpful 4❑ Very helpful 5❑ Not sure

The next questions ask about sexual behavior and related topics.

26. Have you ever had sexual intercourse?

1❑ Yes ↓ 2❑ No → **Go to question 28**

27. The **last time** you had sexual intercourse, did you or your partner use a condom?

1❑ Yes 2❑ No

28. In the **last 12 months,** did you and a doctor or other health provider talk about condoms?

1❑ Yes 2❑ No → **Go to question 30**

29. How helpful was this discussion in understanding how to use condoms to prevent HIV and other STD's (Sexually Transmitted Diseases)?

1❑ Not at all helpful 2❑ Somewhat helpful 3❑ Helpful 4❑ Very helpful 5❑ Not sure

30. In the **last 12 months,** did you and a doctor or other health provider talk about birth control?

1❑ Yes ↓ 2❑ No → **Go to question 32**

31. How helpful was this discussion in understanding how and why to use birth control?

1❑ Not at all helpful 2❑ Somewhat helpful 3❑ Helpful 4❑ Very helpful 5❑ Not sure

The next questions ask about safety.

32. How often do you wear a seat belt when riding or driving in a car?

1❑ Never 2❑ Rarely 3❑ Sometimes 4❑ Most of the time 5❑ Always

33. In the **last 12 months,** did you and a doctor or other health provider talk about the importance of wearing a seat belt?

1❑ Yes 2❑ No

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SECTION IV – HEALTH INFORMATION

Health information can be given to you in many different ways from your doctor, other health provider, or health plan. This kind of information can be in written pamphlets, through computers in your doctor's office or posters in the waiting room. Health information can also be given to you through telephone hot lines or an Internet website.

34. In the **last 12 months,** did you see or hear information that provided safety tips for you? (Such as bicycle helmet use, seat belt use, violence prevention)

1☐ Yes 2☐ No

35. In the **last 12 months,** did you see or hear information about the risks of smoking, drinking or other substance abuse?

1☐ Yes 2☐ No

36. In the **last 12 months,** did you see or hear information about the benefits of a healthy diet, physical activity or exercise?

1☐ Yes 2☐ No

37. In the **last 12 months,** did you see or hear information that provided tips about how to prevent Sexually Transmitted Diseases (STD's) ?

1☐ Yes 2☐ No

SECTION V – YOUR HEALTH CARE IN THE LAST 12 MONTHS

The next section asks you to rate your doctor or other health provider and your experience in a health care setting.

38. In the **last 12 months,** how often were office staff at a doctor's office or clinic as helpful as you thought they should be?

1☐ Never 2☐ Sometimes 3☐ Usually 4☐ Always

39. In the **last 12 months,** how often did doctors or other health providers listen carefully to you?

1☐ Never 2☐ Sometimes 3☐ Usually 4☐ Always

40. In the **last 12 months,** how often did you have a hard time speaking with or understanding a doctor or other health provider because you spoke different languages?

1☐ Never 2☐ Sometimes 3☐ Usually 4☐ Always

41. In the **last 12 months,** how often did doctors or other health providers explain things in a way that you could understand?

1☐ Never 2☐ Sometimes 3☐ Usually 4☐ Always

42. In the **last 12 months,** how often did doctors or other health providers show respect for what you had to say?

1☐ Never 2☐ Sometimes 3☐ Usually 4☐ Always

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43. In the **last 12 months,** how often did doctors or other health providers spend enough time with you?

1☐ Never 2☐ Sometimes 3☐ Usually 4☐ Always

44. In the **last 12 months,** how much of a problem, if any, was it to get the care you or a doctor or other health provider believed necessary?

1☐ A big problem 2☐ Somewhat of a problem 3☐ A small problem 4☐ Not a problem

45. In the **last 12 months,** have you ever had a serious health problem that went untreated?

1☐ Yes 2☐ No

46. We want to know your rating of all health care in the last 12 months from all doctors or other health providers Use any number from 0 to 10, where 0 is the worst health care possible and 10 is the best health care possible How would you rate all of your health care? **Circle one**

0 Worst health care possible
1
2
3
4
5
6
7
8
9
10 Best Health Care Possible

SECTION VI– YOUR HEALTH

The next questions are about your health.

47. How is your health in general?

1☐ Excellent 2☐ Very Good 3☐ Good 4☐ Fair 5☐ Poor

48. For statements **a-c**, check the box below the statement to show if you completely agree, mostly agree, agree a little or do not agree with the statement

a. I am full of energy

1☐ Completely agree 2☐ Mostly agree 3☐ Agree a little 4☐ Do not agree

b. I have a lot of good qualities

1☐ Completely agree 2☐ Mostly agree 3☐ Agree a little 4☐ Do not agree

c. I am satisfied with my life and how I live it

1☐ Completely agree 2☐ Mostly agree 3☐ Agree a little 4☐ Do not agree

49. In the **last 4 weeks,** how often did you have pains that really bothered you?

1☐ No days 2☐ 1 to 3 days 3☐ 4 to 6 days 4☐ 7 to 14 days 5☐ 15 to 28 days

YOUNG ADULT HEALTH CARE SURVEY

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50. In the **last 4 weeks**, on how many days did you exercise or play sports hard enough to make you breathe hard or make you sweat for 20 minutes or more?

1☐ No days | 2☐ 1 to 9 days | 3☐ 10 to13 days | 4☐ 14 to 20 days | 5☐ 21 to 28 days

51. In the **last 4 weeks**, on how many days did a **health or emotional** problem keep you from doing what you usually do at school or with friends and family?

1☐ No days | 2☐ 1 to 3 days | 3☐ 4 to 6 days | 4☐ 7 to 14 days | 5☐ 15 to 28 days

SECTION VII– Demographics

The next questions are about you They are being asked for grouping purposes only

52. How old are you?

1☐ 12 years old or younger | 2☐ 13 years old | 3☐ 14 years old | 4☐ 15 years old | 5☐ 16 years old | 6☐ 17 years old | 7☐ 18 years old | 8☐ 19 years old | 9☐ 20 years old or older

53. Are you a female or a male?

1☐ Female | 2☐ Male

54. How do you describe yourself? **Select all that apply.**

1☐ White | 2☐ Black or African American | 3☐ Asian | 4☐ American Indian or Alaskan Native | 5☐ Hispanic or Latino | 6☐ Native Hawaiian or Other Pacific Islander | 7☐ Other

55. Did someone help you complete this survey?

1☐ Yes ↓ | 2☐ No → **You are Done!**

56. How did that person help you? **Please choose all that apply.**

1☐ Read the questions to me | 2☐ Wrote down the answers I gave | 3☐ Answered the questions for me | 4☐ Helped me remember when I last went to a doctor or other health provider | 5☐ Translated the questions into my language

Helped in some other way. Please print _____

_____

_____

YOU'RE DONE!!
Thank you for completing the survey. Please return the completed survey in the envelope provided.

If you want additional information on any of the topics covered in this survey, please call **1-800-XXX-XXXX**.

(We also have a TDD number: **1-800-XXX-XXXX**)

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BIOGRAPHICAL SKETCH

After three years as a nursing major at the University of Iowa, I transferred to the University of Colorado and received a Bachelor of Arts in biology in 1977. I completed my degree in nursing, obtaining my Bachelor of Science in Nursing at the University of Central Florida in 1991. I returned to school in 1992 and obtained my Master of Science in Nursing from the University of Florida in 1996. Obtaining my certification as a nurse practitioner in pediatrics, I began working in school-based health centers (SBHC). Interested in preventive health, I returned to the University of Florida in 1999 as a doctoral student, researching the quality of preventive health care in SBHC.

As an active leader nationally in the National Assembly for School-Based Health Care, in the state as the President of the Florida Coalition for School-Based Health Care from 2001-2003 and, locally, founding Co-Chair for the Miami Coalition for School Health from 2002-2004, I have spoken nationally and locally on topics related to SBHC. Topics included, “Preventive Services Improvement Initiative”, “Standards for SBHC”, “Building a Model for Collaboration in School-Based Health: Process and Outcomes”, and “ Defining, Promoting and Sustaining School-Based Health Centers”.