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THE INFLUENCE OF RACE AND SOCIOECONOMIC STATUS ON
ROUTINE SCREENING PRACTICES OF PHYSICIAN ASSISTANTS

DISSERTATION

A dissertation submitted in partial fulfillment of the requirements for the degree
of Doctor of Philosophy in the College of Education
at the University of Kentucky

By
DeShana Ann Collett

Lexington, Kentucky

Co-Directors: Dr. Judy J. Jackson, Professor of Educational Policy
And Dr. Kenneth Tyler, Professor of Educational Psychology

Lexington, Kentucky

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ABSTRACT OF DISSERTATION

THE INFLUENCE OF RACE AND SOCIOECONOMIC STATUS ON ROUTINE SCREENING PRACTICES OF PHYSICIAN ASSISTANTS

Health disparities in minorities and those of low socioeconomic status persist despite efforts to eliminate potential causes. Differences in the delivery of services can result in different healthcare outcomes and therefore, a health disparity. Some of this difference in care may attribute to discrimination resulting from clinical biases and stereotyping which may provide a possible source for the persistence of health disparities. Health disparities may occur because the delivery of services at some level is inadequate. Disparities resulting from the quality and quantity of care delivered by a practitioner result in differentiated delivery of healthcare, thus unequal health outcomes. The purpose of this study is to evaluate and identify potential disparities in routine screening practices of physician assistants.

A randomized sample of practicing physician assistants in Kentucky were analyzed (N= 112) to determine if the race or socioeconomic status of a patient influenced their likelihood of offering different routine screening recommendations and screening test recommendations. Clinical vignettes were created with only the race and socioeconomic status of the patient modified, resulting in four separate vignettes. Through the use of a survey instrument, participants were randomly assigned to one of four written clinical vignettes. Statistical analysis using a MANOVA revealed that the race of a patient had a statistically significant multivariate effect on differences in screening recommendations and race and socioeconomic status had significant multivariate effects on screening test recommendations.

Study results suggest that race and socioeconomic status continues to be a significant factor in the prevalence of healthcare disparities. More importantly, this study reveals that Physician Assistants may provide differentiated care based on a patient's race. Limitations and future directions for this study may be used to examine PA educational curriculums for the inclusion of health disparities and possible continuing medical education opportunities for practicing PAs.

KEYWORDS: disparities, health, healthcare, physician assistants, race

DeShana Collett
Student Signature

November 11, 2013
Date

THE INFLUENCE OF RACE AND SOCIOECONOMIC STATUS ON
ROUTINE SCREENING PRACTICES OF PHYSICIAN ASSISTANTS

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DEDICATION

I dedicate this dissertation to my family. Over the last 5 years you have stood by my side. Never once, did you make me feel any less of a daughter, sister, mother, or a wife for not attending every school event or every game because of my commitment to my research. I love you all more than you know. Thank you.

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Chapter One

Introduction

The focus of this dissertation is on the health disparities that manifest from differences in the delivery of medical services. Differences in the delivery of medical services occur between certain ethnic groups and socioeconomic groups. The difference in the delivery of medical services received by African Americans patients of lower socioeconomic status creates inequality throughout the medical industry. Healthcare practitioners deliver medical services; therefore, it is reasonable to suggest that many health care providers' stereotypes and bias contribute to an increasingly high percentage of health disparities in patients from lower socioeconomic minority groups. Furthermore, the primary interest in this study is the means by which health practitioners make clinical decisions, health recommendations and related healthcare outcomes resulting in medical inequality.

Background

The existence of health disparities confirms that not all patients, regardless of differences in patient demographics such as race, sex or socioeconomic status are provided quality healthcare (Agency for Healthcare Research and Quality,2002). Moreover, research suggests that health disparities may occur due to the inadequate delivery of medical services (Haist, Wilson, Lineberry, & Griffith, 2007; van Ryn, Burgess, Malat, & Griffin, 2006). The differences in the delivery of care and services to ethnic minorities and those of low socioeconomic status warrants examining the role healthcare providers play in the causation of these health disparities (Aberegg & Terry, 2004; Smedley, Stith, & Nelson, 2003a). The differences in the delivery of medical services can result in different healthcare outcomes and therefore, a health disparity. Some healthcare disparities can be attributed to

inadequacies in patient communication, shared decision-making between the patient and provider, and insufficient training of the healthcare provider (Green, Carney, Pallin, Ngo, Raymond, Iezzoni, & Banaji, 2007; Peek, Odoms-Young, Quinn, Gorawara-Bhat, Wilson & Chin, 2010b; Rathore, Lenert, Weinfurt, Tinoco, Taleghani, Harless & Schulman, 2000; van Ryn, Malat & Griffin, 2006; van Ryn & Burke, 2000).

However, few studies to date have evaluated the routine screening practices delivered by healthcare practitioners, such as Physician Assistants (PAs), as a possible source of healthcare disparities reported amongst racial/ethnic minorities. Physician Assistants play an important role in the delivery of services; and for that reason, PAs cannot be ignored nor disregarded when examining the causes of healthcare disparities in patients of lower socioeconomic minority status. The possibility that a patient's race and socioeconomic status may influence the delivery of services by Physician Assistants must be examined.

Purpose of the Study

The purposes of this study are to 1) identify disparities in routine screening practices of Physician Assistants and 2) determine if such differences are associated with the patients' race and socioeconomic status.

Significance of the Study

Health Disparities

The U.S. Department of Health and Human Services (USDHHS) defines health disparity as

a type of difference in health that is closely linked with social or economic disadvantage. Specifically, USDHHS states that health disparities negatively affect groups of people who have systematically experienced greater social or economic

obstacles to health ... These obstacles stem from characteristics historically linked to discrimination or exclusion as a result of race or ethnicity, religion, socioeconomic status, gender, mental health, disability, sexual orientation, or geographic location (U.S. Department of Health and Human Services, 2009).

Race and socioeconomic status are most salient when describing disparities in health. African American men experience more adverse health outcomes than any other race or gender, with higher mortality rates in all leading causes of death in the US population (Kennard, 2006). The mortality rate for African Americans is higher than those of Caucasians for heart disease, stroke, cancer, asthma, influenza, pneumonia, diabetes, and HIV/AIDS (Office of Minority Health, 2011). African American patients are less likely than Caucasians patients to have controlled hypertension (Downie, 2011). In addition to these statistics, studies have shown that a patient's race significantly affects the rate of asthma-related hospitalizations and the likelihood of receiving appropriate long-term control medications (Everage, Pearlman, Sutton, & Goldman, 2010; Gessner, 2003). Furthermore, the adult obesity rate for African Americans and Hispanics is higher in almost every state when compared to Caucasians (Levi, Segal, Laurent, & Kohn, 2011). African Americans and Hispanics are twice as likely as Caucasians to have diabetes. Those with diabetes may suffer from other adverse diseases such as end stage renal disease and lower extremity amputations (Levine et al, 2001).

Ethnic minority group members and low socioeconomic status group members receive sub-standard healthcare (American College of Physicians, 2010), and are also less likely to receive preventative healthcare services (Minsky-Kelly, Hamberger, Pape, & Wolff, 2005). Moreover, individuals of low socioeconomic status and ethnic minority group membership constitute the highest percentage of uninsured individuals in the United States (i.e., greater than 50 percent)(U.S. Department of Health and Human Services,

2010)). The American Sociological Association states “that racial and ethnic differences in health outcomes stem from socioeconomic inequalities, adverse conditions in segregated neighborhoods, as well as institutional practices that favor whites over minorities” (American Sociological Association, 2005, p. 11). Ethnic minority group members make up the largest representation of those living in poverty (American Psychological Association, 2012). Low income, education and occupational attainment affect insurance status, access to care and health status (American Psychological Association, 2012), with uninsured populations having higher percentage of individuals seeking late or overdue care and/ or treatment. The lack of treatment subsequently leads to poor health outcomes (U.S. Cancer Statistics Working Group, 2010). Additionally, healthcare disparities persist among elderly members of ethnic minority groups, despite universal health insurance coverage with Medicare (Pamies, 2009). Specifically, minorities 65 years of age or older are 30% less likely than their Caucasian counterparts to receive preventative immunizations such as influenza and pneumonia (Office of Minority Health, 2011). Disparities in the rates of preventable hospitalizations are reportedly higher among ethnic minorities and those of low socioeconomic status, with African Americans experiencing a rate more than double that of Caucasians (Centers for Disease Control and Prevention, 2011).

Delivery of Service and Healthcare Disparities

Healthcare is the delivery of services which includes the diagnosis, treatment and prevention of diseases, illnesses and injuries as well as other physical and psychological impairments in humans (Committee on the Future of Primary Care Institute of Medicine, 1996). Healthcare practitioners that have completed training in medicine, dentistry, pharmacy, related health sciences and nursing deliver health services. This training emphasizes providing quality healthcare to all patients, regardless of differences in patient

demographics, such as race, sex, socioeconomic status (Institute of Medicine, 2002). Despite training programs and policies established to support innovations for providing quality healthcare services, race/ethnicity and socioeconomic status continue to be associated with disparities in healthcare delivery and health outcomes (Bach, Pham, Schrag, Tate, & Hargraves, 2004; Kilbourne, Switzer, Hyman, Crowley-Matoka, & Fine, 2006).

Healthcare Disparities

The literature suggests that healthcare disparities are more prominent among ethnic minorities, even after socioeconomic factors are controlled. “Even after adjusting for insurance and socioeconomic status, members of certain racial and ethnic groups are less likely to receive routine and preventative care and when they receive care, it is more often of lower quality” (American College of Physicians, 2010, p. 1). Research has suggested that practitioner biases or prejudices that emerge during the delivery of services often (i.e., screening, diagnosis, and treatment) lead to healthcare disparities and thus, health disparities (Green et al., 2007; Peek et al., 2010b; Rathore et al., 2000; van Ryn & Burke, 2000). One study found that in 21,629 patients with similar complaints of chest pain that visited the emergency room from 1997-2006; race and insurance status had an influence on the delivery of services. In comparison to Caucasian patients, minority patients, patients with Medicaid and the uninsured were less likely to have a diagnostic test ordered such as, ECG, pulse oximetry, cardiac monitor and cardiac enzymes (López, Wilper, Cervantes, Betancourt, & Green, 2010).

In addition, one study has shown that facilities treating African American patients were less likely than those treating Caucasian patients to have access to board certified

physicians, high quality diagnostic and treatment modalities, and adequate referral services (Bach, Pham, Schrag, Tate, & Hargraves, 2004).

Summary

The following study will examine routine screening practices delivered by Physician Assistants as a possible source of healthcare disparities. The research literature suggests that health disparities can manifest from differences in delivery of services, which results in an inequality. Race and minority status of patient's influence the degree in which these services differ. Healthcare practitioners deliver these services; therefore, it is reasonable to suggest that healthcare providers may contribute to health disparities. The purposes of this study are to 1) identify disparities in routine screening practices of Physician Assistants and 2) determine if such differences are associated with the patients' race and socioeconomic status.

Chapter one provides an overview of health disparities and rationale for why these disparities may exist. The overview provides a foundation for the accompanying research goals in this study. Chapter one also provides a brief discussion on the methodological procedures involved in this dissertation research. Chapter two of this proposal provides a review of the research literature, explicitly discussing health and healthcare disparities. Chapter three outlines the data gathering procedures used and describes the methodology process to be used. Chapter four will present the study results. Chapter five will contain a discussion of the study findings and conclusions along with recommendations for future research.

Chapter Two:

Review of the Literature

Chapter two of this dissertation provides information about health disparities in the United States. The literature cited uncovers the connection between ethnic minorities and low socioeconomic status with health disparities. This chapter also highlights the connection between health disparities and differences in the delivery of services.

Health Disparities

A health disparity refers to a higher burden of disease, illness, injury, whether physical or mental, or health risk that is experienced by one population compared to another (Kaiser Family Foundation, 2008). There is not a single root cause of health disparities. Rather, they are multifactorial and prevalent in every aspect of the healthcare delivery system, from insurance coverage, patient provider communication to the appropriateness and effectiveness of care (Centers for Disease Control and Prevention, 2011). Factors including employment, educational attainment, environment, segregation, personal health and lifestyle behavior can contribute to health disparities (American Psychological Association, 2012). Race and socioeconomic status are most salient when describing health disparities (American College of Physicians, 2010).

Health Disparities and Race

Regarding health disparities, the literature is replete with data suggesting that ethnic minorities suffer from chronic illnesses and diseases at a higher rate than Caucasians (Smedley, Stith, & Nelson, 2003b). Coronary heart disease is the leading cause of death among men with increasing rates seen among African American men and women when

compared to any other racial group. “Coronary heart disease and stroke are not only leading causes of death in the United States, but also account for the largest proportion of inequality in life expectancy between whites and African Americans, despite the existence of low-cost, highly effective preventive treatment” (Frieden, 2011, p. 1). African Americans are also 1.5 times more likely to have hypertension than Caucasians (Centers for Disease Control and Prevention, 2010). African Americans are 30 percent more likely than Caucasians to die from heart disease, despite having a six percent occurrence rate (Office of Minority Health, 2011). Additionally, African American children have a 80% higher incidence rate of asthma, with a mortality rate seven times that of non-Hispanic white children (Office of Minority Health, 2011).

Health disparities are found among many other diseases. New AIDS diagnoses occur at a disproportionate rate, with reported cases being nine times higher among African Americans and three times higher among Hispanics than Caucasians (Agency of Health Care Research and Quality, 2009). African Americans have worse health outcomes following a cardiovascular event and are more likely to die from cardiovascular procedures than members of other ethnic groups, including Caucasians (Spertus, Safley, Garg, Jones, & Peterson, 2005; Trivedi, Sequist, & Ayanian, 2006). Ethnic minorities are also twice as likely as Caucasians to develop diabetes and suffer adverse health outcomes (Levine, 2001).

In addition to cardiovascular and respiratory diseases, there are other health disparities seen in cancer. Health disparities in cancer screening, diagnosis and treatment among ethnic minority group members have been documented in the literature (American Cancer Society, 2011; Bao, Fox, & Escarce, 2007; Miranda, Tarraf, & González, 2011; Siminoff, Graham, & Gordon, 2006; van Ryn et al., 2006; Weng & Korte, 2012). The

American Cancer Society (2011) states that “African Americans have the highest death rate and shortest survival of any racial and ethnic group in the US for most cancers” (American Cancer Society, 2011). African American women have a lower incidence of developing breast cancer when compared to Caucasian women; however, African American women have a higher mortality rate resulting from cancer than women in other ethnic groups (Miranda et al., 2011). This finding is consistent with the low rates of early breast cancer detection and disparities found among preventative screening procedures for mammograms among African American women (Bailey et al., 1997).

Research has documented that the influence of race on health disparities exists even after socioeconomic factors and access to care variables have been controlled (Geiger, 2003; Saha, Freeman, Toure, Tippens, Weeks, Ibrahim, 2008; Smedley, Stith, & Nelson, 2003a). Saha et al. (2008) reviewed the literature published over a forty-year period (1966-2006) pertaining to the quality of health outcomes among U.S. military veterans utilizing the Veterans Administration (V.A.) healthcare system. The researchers found that disparities in the delivery of services significantly contributed to veterans’ health outcomes. Specifically, the study results showed that African American patients seemed less informed, asked fewer questions concerning care and were more skeptical of their care than were their Caucasian counterparts. This resulted in the patients’ seeking external resources for medical information. Researchers also found that a provider’s clinical judgment and the facilities where the delivery of services occurs might contribute to disparities seen between African American and Caucasian patients. Moreover, the authors found that members of ethnic minority groups received differential treatment and care, particularly during surgical

procedures, medication management and in the provision of treatment options compared to Caucasian patients (Saha et al., 2008). The prevalence of health disparities is multifactorial.

Health Disparities and Socioeconomic Status

The prevalence of health disparities among ethnic minority group members and those of low socioeconomic status may result from several factors such as employment status, educational attainment, geographic location, personal health and lifestyle behavior. Each of these factors and their relationship to health disparities is discussed below.

Segregation

Health disparities are rooted in a social, geographical and historical context (Williams & Sternthal, 2010). The prevalence of health disparities among minorities has been associated with segregation (Pamies & Nsiah-Kumi, 2009). Racial segregation is said to determine one's economic status, quality of education, quality of housing, and employment opportunities (Health Policy Institute of Ohio, 2004; William & Collins, 2001). Therefore, it is not surprising that poverty disproportionately affects minorities. The U.S. Census reports that 24 percent of African Americans in comparison to 8.2 percent of Caucasians are living in poverty (Office of Minority Health, 2011). In 2010, African Americans made up 27.4 percent of those living in poverty, in comparison to 9.9 percent of non-Hispanic whites (Ache, Shannon, Heckman, Diehl, & Willis, 2011). The unemployment rate for African Americans is twice that for Caucasians (Office of Minority Health, 2011). Each of these impact access to healthcare and therefore, affects health outcomes (Cooper, 2010). This type of de facto segregation persists without imposed legal sanctions.

Along with these race-based segregation factors, environmental factors such as air quality, exposure to environmentally hazardous living conditions can directly affect health,

particularly for those individuals disproportionately exposed to such conditions because of racial and socioeconomic status-based segregation. Specifically, exposures to environmental hazards are more likely to occur in communities that are concentrated with poverty and minorities (Smedley, 2011; Smedley et al., 2003a). The Joint Center for Health Policy Institute found that “56% of residents in neighborhoods with commercial hazardous waste facilities are people of color even though they comprise less than 30% of the U.S. population” (Smedley, 2011). The results of this exposure to environmental hazards have proven deleterious. For example, pregnant women exposed to environmental hazards have a higher incidence of birth defects. Furthermore, African American infants whose parents lived within areas containing disproportionately higher levels of environmental hazards suffer twice the rate of fetal mortality than any other racial group (Centers for Disease Control and Prevention, 2010).

Access to Quality Care

Cities largely populated by African Americans have worse healthcare compared to cities whose populations are predominately of another racial group (Pamies & Nsiah-Kumi, 2009). Hospitals that served a large population of African American patients and low socioeconomic status patients have been found to be of lower quality and higher cost. Such findings have resulted in increased mortality rates and negative health outcomes (Jha, Orav, & Epstein, 2011). African American infants in the U.S. are twice as likely to die in the first month of life and four times more likely to die in infancy (Ache et al., 2011). A study by Hebert, Chassin and Howell (2011) found that in New York City, African American women were more likely to deliver at high risk hospitals, which resulted in increased rates of infant mortality. The study findings suggested that delivering at low risk hospitals would decrease

mortality rates by 6.7 death per 1000 births, eliminating one-third of the race disparity in births (Hebert, Chassin, & Howell, 2011).

Access to quality care extends beyond facility access (Agency for Health Research and Quality, 2009). A survey study of 4,355 physicians found that those who treated a majority of African American patients were less likely to be board certified and reported having inadequate access to resources that would increase the quality care to those patients in comparison to those who treated a majority of Caucasian patients (Bach et al., 2004). The literature has documented disparities in the treatment recommendations for patients with pneumonia. Those patients with pneumonia who received recommended hospital care was lower for African Americans (76.9 percent), Asians (75.8 percent), and Hispanics (74.2 percent), when compared with whites (81.5 percent) (AHRQ, 2009).

Health insurance is a primary determinate for access to quality care. Not having insurance creates a barrier to healthcare access. Uninsured individuals have a higher percentage of delayed care. This often leads to delayed treatment and subsequently, poor health outcomes. In 2010, the percentage of uninsured in the U. S. population was higher among minorities, 20.8 percent for African Americans as compared to 11.7 percent Caucasians (Centers for Disease Control and Prevention, 2010). Reports show that 73 percent of adults less than 65 years old with private insurance had excellent or good health compared to 55 percent of adults without health insurance and 41 percent of adults with Medicaid (Centers for Disease Control and Prevention, 2010). Moreover, uninsured individuals are less likely to receive preventative care and are more likely to utilize emergency room services.

Having access to care can significantly lower mortality rates. Even when patients have insurance but are faced with challenges to see a provider or must wait long periods of time to receive care, quality of care is compromised (Betancourt, Green, Carrillo, & Ananeh-Firempong 2003).

Healthcare and Physician Assistants

The causes of significant ailments among minority populations such as African American and low-income individuals are certainly not limited to contextual factors. The differences and inequalities in the delivery of service received by patients can also lead to health disparities (Kilbourne, Switzer, Hyman, Crowley-Matoka, & Fine, 2006).

Practitioners who have medical training in areas of medicine, dentistry, pharmacy, related health sciences and nursing provide healthcare services delivery, often referred to as primary care. Examples of these practitioners include medical doctors, Physician Assistants (PAs), nurses and therapists. These practitioners work to deliver a wide range of primary services that optimize patients' health outcomes. Primary care is considered:

Comprehensive first contact and continuing care for persons with any undiagnosed sign, symptom, or health concern (the "undifferentiated" patient) not limited by problem origin (biological, behavioral, or social), organ system, or diagnosis. This includes health promotion, disease prevention, health maintenance, counseling, patient education and diagnosis and treatment of acute and chronic illnesses in a variety of health care settings (American Academy of Family Physicians, 2012, para.3 &4).

Primary care often serves as an entryway into the healthcare system. In the primary care clinical setting, general medical doctors, midlevel providers such as Physician Assistants (PAs), and nurses work as a team to provide primary care services.

Physician Assistants often serve as the initial healthcare practitioner who performs clinical preventative services, such as routine health screenings, comprehensive medical exams and health maintenance procedures. Thus, Physician Assistants are important members of the medical team in the healthcare system. With the rapid decline of the physician workforce, Physician Assistants have been suggested as the solution to fulfill the growing need for primary care healthcare providers (Park, Cherry, & Decker, 2011). The Physician Assistant profession is the fastest growing healthcare profession and can be found working with roughly 49% of all physicians in the United States (Park et al., 2011; U.S. Bureau of Labor Statistics, 2010-2011; U.S. Bureau of Labor Statistics, 2010). They extend a physician's reach by a third, which translates into more people having access to care, including preventative care (American Academy of Physician Assistants, 2008).

Patients view Physician Assistants as compassionate healthcare providers. Research has shown that patients are more likely to be satisfied with the level of care given when a Physician Assistant provided this care (Counselman, Graffeo & Hill, 2000; Roblin, 2004). Counselman et al (2000) examined patient satisfaction with care given by Physician Assistants in the emergency room. Patients reported being satisfied with care (mean patient satisfaction score of 93(95% CI, 90.27 to 95.73). Furthermore, patients were willing to accept care from a PA rather than wait longer to be seen by a physician, with only a few patients (12%) willing to wait longer to be seen by a physician. The quality of care given by a Physician Assistant is seen to be comparable to care given by physicians (Wilson, Landon, Hirschhorn, McInnes, Ding, Marsden, & Cleary, 2005). Studies suggest that patients who have previously received healthcare from a PA are comfortable receiving care from a Physician Assistant in future healthcare visit (88%) (Kentucky Health Issues Poll, 2013).

Healthcare services provided by PAs are typically referred to as clinical preventative services. Clinical preventative services focus on prevention and health promotion of all patients. These services include, but are not limited to, screening procedures and tests; counseling; patient education; immunization and health maintenance. Patients who receive preventative care services—services designed to prevent the onset or slow the progression of illness/disease—will often have them delivered by Physician Assistants. It is possible that healthcare services delivered by providers are differentiated, therefore contributing to healthcare disparities. The differentiated healthcare services provided are possible anecdotes to health disparities.

Healthcare Disparities

A healthcare disparity is the difference in types of services (i.e., access to care, quality of care, diagnosis and treatment) available to an individual that are not based on the health needs of that individual (Kaiser Family Foundation, 2008). These healthcare disparities produce unequal differences typically found in health outcomes. The differences in the delivery of quality healthcare contribute to health disparities and furthermore, the extent of these disparities is greatly influenced by a patient race and minority status (Betancourt, 2006). Thus, quality of care, access to care, patient-provider relationship and healthcare workforce diversity may be correlated with healthcare disparities (Saha & Shipman, 2006).

A large body of research documents the influence of race and ethnicity on the delivery of quality of healthcare. Bhandari and colleagues (2005) found that stroke patients admitted to an Inpatient Stroke Rehabilitation Unit between 1995 and 2001 received differentiated care based on the patient's race. Specifically, African American patients with

higher occurrences of lower functional improvement scores had increased odds of early hospital discharge (Bhandari, Kushel, Price, & Schillinger, 2005).

Van Ryn et al (2006) conducted a study on whether a physician's perceptions of patients' demographics influenced treatment recommendations. Data were collected on 4,907 patients with coronary artery disease that underwent an angiogram procedure in one of eight New York State hospitals between 1996 and 1998. Patients were categorized into three groups as being appropriate, inappropriate or uncertain to meet the criteria for treatment modalities of coronary artery bypass graft surgery (CABG) and percutaneous transluminal coronary angioplasty (PTCA). Those patients classified as appropriate to receive CABG (1261) were further randomized (614) in order to group those who had identified their treating physicians. Self-administered surveys focusing on clinical encounter and treatment decision-making were mailed to those physicians identified. The goal of the study was to determine factors that influenced the relationship between the patient's race and the physician's treatment recommendations. The study found that race and gender significantly influenced recommendations for coronary artery bypass surgery (CABG). Only 21 percent of African American male patients received recommendations in comparison to 40 percent of Caucasian and non-white Hispanic patients. However, there was no significant difference between African American women and Caucasian men and women (van Ryn et al., 2006). The study also found that a patient's insurance status influenced treatment recommendations for a CABG, with differences between patients with Medicaid or no insurance (26%) versus Medicare or private coverage (43%) (van Ryn et al., 2006).

Epstein and Piana (2003) found that Caucasian patients were more likely to receive cardiac revascularization than African American patients, even when the procedure was clinically indicated for both groups (40% vs. 23-24%) (Epstein et al., 2003). Lopez et al. (2010) found that over a 10-year period, minorities, Medicaid insured patients and uninsured patients that presented to the emergency room for chest pain were less likely than Caucasians and those with private insurance to 1) be triaged, and 2) receive diagnostic modalities of electrocardiogram, cardiac enzymes, cardiac monitor and pulse oximetry. According to the authors, this unequal delivery of care and delayed diagnosis may result in an increased incidence of mortality, pulmonary embolism and pneumothorax; which, affects health outcomes for many cardiac patients (López, Wilper, Cervantes, Betancourt, & Green, 2010).

Healthcare disparities occur between both genders of ethnic group members. African American women are less likely to receive a diagnosis of breast cancer and are 36 percent more likely to die from the disease than Caucasian women (Office of Minority Health, 2011). Researchers found that the race and ethnicity of a breast cancer patient influenced how the oncologist communicated with the patient (Siminoff et al., 2006). The study used the Roter Interaction Analysis System (RIAS) to examine the communication behavior patterns between patients, their family members and physicians and any differences based on race and socioeconomic status. Twelve communication variables of the patients and physicians were examined. The study examined the communication behaviors of 405 breast cancer patients based on age (≤ 60 young, >60 old), race (white or non-white), education level (\leq high school or $>$ high school), and income (low= \leq \$25,000, medium= \$25,000-50,000, and high ($>$ \$50,000)). The median values were used to compare

between groups, however, the study failed to mention the range for each data set analyzed. The results suggest that physicians provided more counseling and more patient education was given to patients who were younger than 60 as compared to those older than 60 years of age (226 versus 157), Caucasian versus those of non-white racial status (median = 191 versus 142, $p < 0.01$) and those better educated (median = 206.5 versus 165, $p < 0.01$). Counseling was more likely done with those possessing higher incomes (median = 227.5) as opposed to medium income (183.5) and low-income (152.5) patients ($p < 0.01$). Furthermore, the study found that physicians were more likely to have engaged in relationship building with white patients than non-whites patients (62 versus 47, $p < 0.01$) and those thought to be more educated (median = 62 versus 54.25, $p < 0.05$).

Even with income held constant, race-based health disparities persist in cancer diagnosis. Weng & Korte (2012) used the Surveillance, Epidemiology, and End Results (SEER) Limited-Uses Data, RUCC (Rural-Urban Continuum Codes) dataset and SAIPE (Small Area Income & Poverty Estimates) dataset to analyze 17 different geographical cancer registries from 1988-2005. The data were grouped by residency (rural/urban), county population and degree of urbanization descriptors (metro/non-metro), and county wealth (wealthy/poor). The study examined whether the recommendations for undergoing surgery were predicted by a patient's race. The results were statistically significant with an odds ratio of 2.0 with a 95% confidence interval of 1.9 to 2.1. The 95% confidence interval of odds ratio is between 1.9 and 2.1, indicating that there is a positive correlation between surgical recommendation and a patient's race and that the odds of not receiving appropriate surgical treatment are significantly higher for African American patients as compared to Caucasian patients. African American patients with oral cancer were two times less likely

to receive appropriate surgical treatment recommendations when compared to Caucasian patients. Along with race, geographic location also influenced treatment recommendations. Recommendations for undergoing surgery were four times less likely if patient was African American and resided in a rural area (OR, 4.4; 95% CI, 2.6–7.5) (Weng & Korte, 2012). Minority, low income, Medicaid insured patients and uninsured patients were more likely than Caucasians and privately insured patients to have a delayed diagnosis, which subsequently affects mortality and survival rates (Weng & Korte, 2012).

Along with data supporting the presence of physical health disparities, there are data to show disparities in mental health as well. Members of ethnic minority groups are affected by major depression more frequently than Caucasians (Alexandre, Younis, Martins, & Richard, 2010; U.S. Surgeon General, 2001). Dunlop, Song, Lyons, Manheim & Chang (2003) found that African Americans and Hispanics experienced increased rates of major depression compared to Caucasians. A study by Alexandre, Younis, Martins and Richard (2010) found that white youth (36%) received adequate mental healthcare when compared to non-white youth (28%), with the odds of receiving adequate mental healthcare being 1.5 times higher among whites compared to non-whites (Alexandre, 2010). Accessibility and limited availability of mental health services significantly affect ethnic minority groups (U.S. Surgeon General, 2001). This association was related to the lack of insurance and unemployment (Dunlop, Song, Lyons, Manheim, & Chang, 2003). Healthcare disparities are not only seen with access to care but in other aspects, such as communication, that constitute an essential aspect of the delivery of care.

Healthcare Disparities and Patient-Practitioner Relationship

Communication plays a vital role in delivery of quality healthcare. In the clinical setting, communication is in every aspect of clinical decision-making. When there is poor communication between medical providers and patients, there will inadvertently be adverse outcomes for patients. For communication to be effective, the patient must comprehend it.

Health literacy is the extent to which an individual has the ability to acquire, process and comprehend basic health information and available services that are required to make appropriate health decisions (HRSA, 2011). “Problems with health literacy can make it difficult to complete intake forms, enroll in insurance programs, read appointment slips, and understand how to navigate the health care system” (Health Policy Institute of Ohio, 2004).

Barriers to health literacy include language or limited English proficiency (LEP), cultural differences and limited educational attainment. Hispanic patients with limited English proficiency are less likely to seek regular medical care (AHRQ, 2003). Research suggests that low income African American patients show decreased rates of health literacy and are less likely to have input in medical decisions about their care (Fiscella, 2007). When patients perceive that practitioners prioritize their care, they become active in health decisions, which results in improved patient compliance and health outcomes. Some studies suggest that ethnic minority patients prefer healthcare practitioners for which they share race and ethnic characteristic (Chen, Fryer, Phillips, Wilson, & Pathman, 2005; Cooper-Patrick et al., 1999; Saha, Taggart, Komaromy, & Bindman, 2000). Furthermore, this preference has a direct correlation to the patients’ perceived level of care received (Siegel, Ward, Brawley, & Jemal, 2011). Some studies suggest that minority patients are more

satisfied and perceive that they receive higher quality healthcare from minority providers (Laveist & Nuru-Jeter, 2002; Peek et al, 2010a; Somnath Saha et al., 2008).

If individual patients perceive that the healthcare they are receiving is rooted in discrimination, racism, or cultural discordance, then the quality of patient- practitioner communication is decreased resulting in worse quality of healthcare (Peek et al., 2010a). The Agency for Healthcare Research and Quality conducted a study that examined perceptions of communication and care delivered by physicians. The results reported that minority patients were more likely to report poor communication with their healthcare practitioners. The patients in the study defined poor communication as; “the providers sometimes or never listened carefully,” “didn’t explain things clearly,” and “showed a lack of respect or encounter time.” The study also showed that minorities were less likely to take part in the treatment component of clinical decision-making (Agency for Healthcare Research and Quality, 2010). The study suggests that the perceived quality and quantity of communication between the patient and practitioner was affected by the beliefs and attitudes of both the patient and provider. The quality and quantity of communication delivered by the provider can be affected by the beliefs and attitudes rooted in prejudice and discrimination.

Discrimination and Provider Behavior

The literature suggests that health disparities may result from prejudice and discriminatory behavior of the practitioner (Green et al., 2007; Peek et al., 2010a; Rathore et al., 2000; van Ryn & Burke, 2000). Jones (2000) defines prejudice as “differential assumptions about the abilities, motives and intentions of others according to their race and discrimination as differential actions towards others according to their race” (Jones, 2000).

Discrimination can unjustly link race and health (Hebert, Sisk, & Howell, 2008).

Discrimination can be in the form of biases or stereotypes that the practitioner has towards a patient and can occur in any part of the healthcare delivery process. There may be provider biases or prejudices that emerge in the screening, diagnosis and treatment given to patients, all of which can lead to a healthcare disparity. The effects of race and socioeconomic status on a practitioner's perceptions and attitudes of minority patients have been correlated with negative health outcomes (Burgess, Warren, Phelan, Dovidio, & van Ryn, 2010; Ryn & Burke, 2000; Burgess et al., 2008; Balsa & McGuire, 2003; van Ryn, Burgess, Malat, & Griffin, 2006).

A study by Finucane and Carresse (1990) found that medical staff participating in clinical case presentations were more likely to specify the race of a patient when the individual was African American. This study also found that unfavorable characteristics such as, "illiteracy, low intelligence, uncooperativeness, anger, violence, criminal record, obesity, unkemptness, unemployment, alcohol or drug abuse, multiparty, teenage pregnancy, AIDS or positive test for HIV" were consistently mentioned when the race of the patient was African American in comparison to the race of a patient who was Caucasian (Finucane & Carrese, 1990).

The American Medical Association (AMA) states that 55 percent of physicians agreed that in comparison to white patients, minority patients received lower quality healthcare and 62 percent of physicians disclosed that they have witnessed lower quality healthcare being delivered to a patient based on his or her race or ethnicity (American College of Physicians, 2010). A study by van Ryn et al. (2000) concluded that race and socio-demographic characteristic of a patient influenced the level of care delivered by

physicians. The study indicated that physicians held increased negative perceptions of a patient's intelligence, personality and behavior tendencies toward African American patients from low socioeconomic and middle socioeconomic groups as compared to Caucasian patients from high socioeconomic groups (van Ryn & Burke, 2000). Green et al. (2007) conducted the first documented study of its kind that measured physicians' race preference and perceptions of patient cooperation using the Implicit Association Test. The study examined 287 medical residents' clinical decision recommendations for African American and Caucasian patients with acute coronary syndrome (ACS). Study participants were randomized to a clinical vignette of an African American or Caucasian patient presenting to the emergency room with symptoms of ACS. A questionnaire and three different Implicit Association Tests (IATs) followed the vignettes. The instruments measured perceived cooperation, race preference, and cooperation with medical procedures. The results showed that physicians reported no explicit preference for white versus black patients or differences in perceived cooperativeness. In contrast, IATs revealed implicit preference favoring Caucasian Americans (mean IAT score = 0.36, $p < .001$, one-sample t test) and implicit stereotypes of African Americans as less cooperative with medical procedures (mean IAT score 0.22, $p < .001$), and less cooperative generally (mean IAT score 0.30, $p < .001$). Correlations between increased implicit bias and likelihood of treatment with thrombolytics, showed that physicians were more likely to treat Caucasian patients as compared to treating African American patients ($p = .009$). The results indicated a significant disconnect between physicians' unconscious and conscious bias, with race being the main factor (Green et al., 2007). "Between 2004 and 2006, more than 2,500 doctors took the Implicit Association Test, or IAT, which attempts to measure test-takers' unconscious preferences by asking them to quickly associate 'good' words such as joy and

love and ‘bad’ words such as evil and nasty with white or black faces. White, Asian and Hispanic doctors showed preferences for whites over African Americans, while black physicians showed no significant preference, the study said. These unconscious preferences for whites were startling in that they were two to three times' higher than the physicians' self-reported attitudes” (O'Reilly, 2009, para.3). Research suggests that the differences in providers’ attitudes and perceptions of patients are strongly correlated to the patients’ race and not the race of the provider (Cook, McGuire, & Zuvekas, 2009; Kilpatrick, 2004). Sabin et al. (2009) conducted a study on explicit and implicit attitudes about race and found that Caucasian physicians held implicit preference for Caucasians over African Americans, in comparison to African American physicians who displayed no implicit racial bias. Having inadequate representation of minority providers may lead to inequalities in the delivery of services.

Impact of Health Disparities at the Institutional Level

Inadequate minority representation in governance, clinical leadership and administrative roles create a disconnect between the healthcare systems and the minority populations they serve (Betancourt et al., 2003). The American Medical Association states that unconscious perceptions of biases and stereotypes can only change when educators integrate cultural awareness, knowledge, and skills in all aspects of medical training and in practice (American Medical Association, 2010). The Institute of Medicine (IOM) published the widely referenced reports “*Crossing the Quality Chasm*” and “*Unequal Treatment: Confronting Racial and Ethnic Disparities in Healthcare*”, which revealed the extent of inequalities in the delivery of healthcare in the United States. The report emphasized that diversity of the healthcare workforce, patient-centered care and cultural competency training

are potential means to eliminating racial and ethnic disparities (Institute of Medicine, 2002; Lopez, Vranceanu, Cohen, Betancourt, & Weissman, 2008). The issues surrounding the lack of diversity in provider workforce may start with disparities in education.

Diversity in Medical Education Programs

Lack of underrepresented minority students continues to be a salient issue within health professions educational institutions. The increase in the academic performance gap among underrepresented minorities in STEM educational programs have led to decrease representation in medical programs. The inequality of the education received and the lack available resources to minority students continue to put them at a disadvantage and maintain social immobility. Decreased availability of pipeline programs in science, technology, engineer and mathematics in K-12 education along with lack of sufficient institutional resources such as financial support and faculty mentoring have been documented as barriers to increasing the underrepresented minority student presence in medical programs (Rumala & Cason, 2007). The American Medical Association has taken a position on diversifying the healthcare workforce by suggesting medical programs include fostering community partnerships for the initiation of pipeline programs, recruitment and retention efforts of minority students and faculty, and increased financial funding and support as ways to successfully increase diversity within medical education programs (American College of Physicians, 2010). Currently underrepresented minority faculty make up less than 10% of faculty in medical programs in the United States (Association for American Medical Colleges, 2011). Underrepresentation of minority students and faculty in medical education programs lead to unequal representation in the healthcare workforce.

Workforce Diversity

Inequalities noted in medical education programs are displayed in the lack of diverse faculty educators and graduating healthcare providers' highlights an area for immediate concern. Research shows that minority healthcare providers perceived that experiences that resulted from racism and prejudice materialized at the beginning of their medical education (Johansson, Jones, Watkins, Haisfield-Wolfe, & Gaston-Johansson, 2011). The patient population is becoming increasingly more diverse. Demographic predictions by the U.S. Census Bureau report, "Minorities, now roughly one-third of the U.S. population, are expected to become the majority in 2042, with the nation projected to be 54 percent minority in 2050. By 2023, minorities will comprise more than half of all children" (U.S. Census Bureau, 2008). Unfortunately, the growth in the population has not resulted in a parallel increase in the percentage of underrepresented minority healthcare providers. Currently, minorities account for less than 8 percent of all medical doctors (American Medical Association, 2010) and 6 percent of all Physician Assistants (American Academy of Physician Assistants, 2009). Minority healthcare practitioners are more likely than non-minorities to provide care to underserved areas (Kramer, Lorenzon, & Mueller, 2004). Not only do we lack minority physicians in primary care but this is more evident in medical specialties (Hargraves, 2001). The lack of minority providers able to deliver care is directly related to the number of minority student representation in medical education programs.

Summary

Chapter two discusses several factors that contribute to health disparities and the affect health disparities have on minorities. This chapter defines and outlines health disparities, and healthcare disparities specifically detailing the influence of race and

socioeconomic status. Race and socioeconomic status influence economic resources, level of education and living environment. These have an effect on the access to care, availability of resources and therefore the quality of services delivered. It is possible that the differences in the delivery of services lead to healthcare disparities. Healthcare providers such as Physician Assistants provide care that should be free from prejudice or bias however, research suggest otherwise.

The goal of this study is to fill gaps in the literature by examining the parallel connection between health disparities and the delivery of services. Acknowledging the existence of disparities is an important initial step. However, understanding the underlying cause is essential in eliminating disparities in health and healthcare.

Chapter Three

Methodology

The purposes of this study are 1) to identify and evaluate potential disparities in routine screening practices of Physician Assistants and 2) to determine if differences in screening practices are associated with patients' race and socioeconomic status.

Research Questions

The literature review provided evidence to support the influence that race and socioeconomic status have on health disparities and healthcare disparities. The goal of this study is to analyze whether routine screening recommendations vary according to a patient's race and socioeconomic status. The variable of interest is Physician Assistants routine screening recommendations. This research study intends to test the hypothesis and answer the question stated below.

Research question 1. What are the routine screening recommendation practices among Physician Assistants in this study across the four clinical vignette groups?

Hypotheses

H₀: There are no differences in the reported routine screening recommendation practices of Physician Assistants assigned to the clinical vignettes in this study.

H₁: There are differences in reported the routine screening recommendation practices of Physician Assistants assigned to the clinical vignettes in this study.

H_{1a}: Physician Assistants assigned to the African American patient scenario will report significantly lower routine screen recommendations as compared to Physician Assistants assigned to the Caucasian patient scenario.

H_{1b}: Physician Assistants assigned to the lower socioeconomic status patient scenario are less likely to offer appropriate preventative routine screen recommendations as compared to Physician Assistants assigned to the high socioeconomic status patient scenario.

Methods

Research Design

The study used a 2x2 factorial experimental research design that utilized written clinical vignettes. The variables are race and socioeconomic status. Each variable, race and socioeconomic status, had two levels, African American/Caucasian and waitress with high school diploma/lawyer with doctorate degree. A survey instrument provided data used in this study. The population of interest was practicing Physician Assistants in the state of Kentucky.

Research Participants

The target population consists of current practicing Physician Assistants in Kentucky. Access to an electronic mailing list of all current practicing Physician Assistants was obtained via the Kentucky Physician Assistant Association. Membership to this association is voluntary; however, the association collects information on all practicing Physician Assistants in Kentucky. The Kentucky Physician Assistants Association receives Kentucky provider information from the national association, American Association for Physician Assistants. The American Academy of Physician Assistants collects data on all Physician Assistants in the United States. The population includes all practicing Physician

Assistants in the practices and subspecialty practices of Family Medicine, Emergency Medicine, Internal Medicine and Women's Health. To resemble the general population of Physician Assistants, the study participants were gathered through convenience sampling procedure. According to the American Academy of Physician Assistants (AAPA), there are 918 certified Physician Assistants in the state of Kentucky (American Academy of Physician Assistants, 2011). Email addresses are an optional item collected by the AAPA. Therefore, of those total certified Physician Assistants in the state of Kentucky, email addresses were obtained for 723 certified practicing Physician Assistants in Kentucky. The data were securely stored in the Qualtrics survey database under a secure account. Internet protocols that could identify participants were collected for tracking purposes. IRB approval was obtained prior to collecting any data.

Instrumentation

The survey instrument consisted of a clinical vignette and a four point Likert- type questionnaire. The instrument was developed specifically for the purposes of this study. After a review of the literature and feedback from a panel of experts in the field of medical education and medical research, a final survey instrument was created. A description of the contents included in the survey instrument is provided in this section.

Clinical Vignette. This study will utilize a modified version of an original vignette created and used in research conducted by Baig and Hesler (2008). Permission from the authors was obtained for use in this study. The criteria for developing the clinical vignette and determining preventative measures was based on 1) clinical experience as a result of the researcher being a practicing Physician Assistant and 2) practice guidelines established by U.S. Department of Health and Human Services for a woman between the ages of 18-39.

The written clinical vignette portrayed a female patient who presents to the medical office for a routine women's health examination. A visual image of the patient was displayed in the survey.

The clinical vignette portrayed a female patient who presents to the medical office for a routine women's health examination. This included some components of the history of present illness, past medical history, and social history. Race (African American or Caucasian) and educational attainment /occupational (waitress with a high school diploma / lawyer with a doctorate degree) were modified in the clinical vignettes. To eliminate bias in the assignment, the participants were randomized to receive one of the four experimental clinical vignettes.

Survey Clinical Vignette. *Ms. M is a 32-year old woman who is coming in today to establish care with your practice. She does not routinely see a provider and mostly seeks treatment when she gets sick during the winter. She brings up no concerns today except for having occasional mild tension headaches relieved with OTC analgesics. She denies any change in her symptoms.*

The patient denies any fevers, chills, photophobia, neck rigidity, nausea, vomiting. She is adopted and is unaware of any information concerning her family history. Her self-reported social history indicates that she is currently employed as a (waitress/ lawyer). Her highest level of education attained was a (high school diploma/ doctorate degree). Her physical examination is unremarkable. A Pap smear was completed today. She was also given a refill on her birth control pills.

Clinical vignettes are the most commonly used tool to evaluate effectiveness of training or teaching in medical education (Peabody, Luck & Jeff, 2000). They are also used to examine the quality of healthcare delivery in the clinical setting (LaVeist, 1994; Peabody et al., 2004; Peabody, Luck & Jeff, 2000; Peabody & Liu, 2007). Studies have found written clinical vignettes to have increased validity and reliability when compared to using the more commonly used standardized patient encounters and chart review abstracts (Braveman, Cubbin, Marchi, Egerter, & Chavez, 2001; Braveman, Egerter, Chideya, Marchi, Metzler, Posner 2005; Miech & Hauser, 2001). Studies found that internal validity of vignettes can be established by developing scenarios based on existing literature, expert panel review and pretesting to ensure internal validity (Flaskerud, 1979; Peabody et al., 2004).

The clinical vignettes should portray a consistent standardized scenario within the same study to assure validity. Medical researchers' use of written clinical vignettes provides the benefits of substantial cost savings and time management. Clinical vignettes cost less than do standardized patient actors. Standardized patient actors are trained to portray the role of a patient to enhance and evaluate the medical training of providers (Talente, Haist, & Wilson, 2007) They can be completed in less time than it takes to conduct a chart review or complete a standardized patient training program (Veloski, Tai, Evans, & Nash, 2005). In addition to utilizing clinical vignettes to evaluate medical training, they have also been used to examine correlations between providers' attitudes and perceptions of patients and the quality of care delivered (American Sociological Association, 2003; Winker, 2004).

Measurement

Variables

Patient Characteristics Independent Variables. The independent variables are patient race and socioeconomic status. Variables of race and socioeconomic status are an important explanation for health disparities (Gerbert et al., 2002; Williamson et al., 2004). Race and socioeconomic status were dichotomous variables. The variable of patient race was either African American or Caucasian.

Socioeconomic status is a categorical variable. Socioeconomic status was defined and measured using the highest level of education completed and occupational status (waitress with a high school diploma/ lawyer with a doctorate degree). This variable has been noted in the literature to have a strong correlation to health outcomes and social policy implications among health researchers (Balsa & McGuire, 2003). The literature suggests that income and education/occupational status are the most widely used variables in medical research when measuring socioeconomic status (Green et al., 2007; Haider & et al., 2011; van Ryn et al., 2006). Thus, added information was given in the clinical vignette to correspond to the educational level completed (Oakes & Rossi, 2003). The occupations chosen to represent socioeconomic status are based on the Nams-Powers-Boyd Occupational Status Scale; which uses income, educational attainment, gender and occupation to measure socioeconomic status on a scale from 0-100, with a score of 100 being physicians or chief executive officer (Nam & Boyd, 2004). On this scale, a lawyer receives a score of 99 and a waitress receives a score of 20.

Physician Response Dependent Variable. The study seeks to evaluate routine screening recommendation practices for Physician Assistants based on specific preventative

healthcare issues. The survey instrument included questions about the likelihood decisions on screening recommendations, familiarity and knowledge of routine screening recommendations guidelines. Refer to Appendix A for operational definitions of these variables.

The entire clinical vignette was displayed on one page. There were six separate sets of questions, each set displayed on a single separate page. The study participants were not allowed to go back to previous questions as they advance through each set of questions. The first question in the survey asked each participant to indicate how likely he or she is to include screening recommendations when obtaining a medical history on the patient described in the vignette. Screening recommendations were generated from national practice guidelines and evidence-based medicine was used as dependent variables. Each participant received a total score for each Likert scale by totaling the item scores from each.

Screening recommendations were compiled and placed into separate categories consisting of items defined as screening recommendations and screening tests/procedures recommendation. The total items for screening recommendations equal 17 and for screening recommendations tests/procedures equal 15. Each screening recommendation category was measured using a 4-point Likert scale of 1=Very Unlikely, 2=Unlikely, 3=Likely, 4=Very Likely.

Data Collection

The study was submitted to the University of Kentucky Institutional Review Board for approval. A survey design was used for the purposes of collecting data. To address content and construct validity, a peer review invitation was sent electronically to four

faculty from the College of Medicine and College of Health Sciences at the University of Kentucky to review and evaluate the validity of the clinical vignette. The reviewers are experts in the field of medical education and medical research, with knowledge related to the contents of the survey. All reviewers have state, regional and national publications and presentations on medical education and medical research. Each reviewer was invited to take the survey. The invitation informed the reviewer that the feedback provided was confidential. At the end of each set of questions, an additional open-ended question was asked concerning the survey instrument content, format of delivery, question clarity, item scoring and length and ease of completion. Follow-up phone calls and email correspondence helped clarify any additional questions that may have occurred. This allowed for an evaluation of the instrument's content and the need for additional modifications. Application for IRB approval is included in Appendix B and vitas for expert panelists are included in the Appendix D.

A cover letter containing a description of the study, details of the informed consent procedures and the researcher's contact information was included in the initial email invitations. The cover letter explained the process of informed consent and options for not participating in the study. Internal grant funding was secured to offer incentives to participants for completion of the survey in the form of \$10 Amazon e-gift cards. Participants had the option to enter in a random drawing at the conclusion of the survey. The gift cards were 50 randomly selected study participants that completed the survey. Winners were notified by email. All identifiable information was kept confidential and deleted at the conclusion of the survey. Cover letter and survey instrument are included in Appendix C.

Past studies of this type have documented a response rate of 30% to 80% respectively (Dresselhaus et al., 2004; Peabody et al., 2004). The instrument was an internet-administered survey with targeted response rate of 20 to 40%. The survey was anonymous; no internet protocol addresses were collected. The survey was emailed to ensure response rates and survey data were collected over a two week window. To increase predicted response rates, all of the participants received a follow-up email reminder in 48 hours after the initial request and 48 hours after the subsequent reminder. One week after the subsequent email reminder, a repeat mailing of the survey was sent to all responders. Cover letter, instructions and survey instrument are provided in Appendix C.

Data Analysis

The two independent variables are race (African American or Caucasian) and socioeconomic status (waitress with a high school diploma/ lawyer with a doctorate degree). There were four groups formed by the combination of levels, 1) African American/waitress with a high school diploma, 2) Caucasian/waitress with a high school diploma, 3) African American/ lawyer with a doctorate degree) and , 4) Caucasian/ lawyer with a doctorate degree). The data collected are described and statistically analyzed with the purpose of answering the research question below.

Research Question Analysis

Research question one is inferential in nature with the purpose of examining the routine screening recommendation practices. Calculating a total mean score for each dependent variable provided information on whether there were differences in the overall recommendation patterns. Univariate analysis of variance will analyze any differences between the group means. Sub-setting may be done to examine differences between

specific groups. The means and standard deviations were calculated for continuous variables. Each recommendation item was measured using Likert scales. The Likert items range from 1= Very Unlikely to 4=Very Likely. A contingency table for each of the four clinical vignette groups will display the means, standard deviation and frequencies of each item. Bar graphs will display distribution of data.

Summary

A multivariate analysis of variance examined whether there is a high likelihood of suggesting routine screening recommendations based on the clinical vignette received by the study participants. For each of the four clinical vignettes, mean scores were calculated for the likelihood of suggesting screening recommendations and screening test recommendations. Utilizing a multivariate analysis of variance protects against committing a Type I error. A MANOVA will not allow for further analysis if the outcome is not significant. The Bonferroni correction was used to protect from Type I error. Differences found among the means will undergo additional post-hoc testing, which will provide information concerning which groups means differ significantly. Any significant outcomes that resulted from the MANOVA were further explored using a univariate analysis. Univariate analysis will calculate and describe recommendation practices for dependent variables that were statistically significant.

Chapter Four

Results

Chapter four of this dissertation provides detailed information on the data collection efforts and the data analysis plan and results. The chapter was organized in three sections: 1) demographic characteristics of the survey participants, 2) data collection and descriptive statistics for participant survey responses and, 3) hypothesis testing and summary results of the MANOVA examining the practices of Physician Assistants.

Survey Response

The survey instrument was emailed to 723 Physician Assistants in Kentucky. Of those 723 emails, 112 of the participants' emails were excluded from the list because they did not meet inclusion criteria of practicing in Kentucky. To be included in study, participants had to be currently practicing Physician Assistants in Kentucky. The total number of valid email addresses for Physician Assistants practicing in Kentucky was 611. Of the 611 emailed participants, a total of 142 responded to the survey. There were eight survey participants that chose not to participate in the study; these participants opted out of the survey using the available survey option or through contacting the researcher. Of those eight, four PA participants opted out and did not offer a reason for declining and the other four participants were unable to complete the survey; three indicated to the researcher that they had technical difficulty and one tried to participate after the survey had expired. The response rate was 23 percent. Studies suggest possible reasons why practitioners that do not respond to surveys mostly consist of lack of time, perceived significance of study and concern for confidentiality (VanGeest, Johnson & Welch, 2007). None of these reasons

were expressed in my study. The high rate of non-responders is important in assessing the validity of this study. A high rate of non-responders can increase the incidence of bias, threatening the validity of the study, thus affecting the generalizability. However, the characteristics of the non-responders were similar to those of the responders; the generalizability to the Kentucky Physician Assistant population is unaffected by the response rate (Kellerman & Herold, 2001). Respondents that completed 25 out of 32 questions or 78% of the survey were included in the data results. Those that completed the survey were included in the data analysis. Those respondents with incomplete surveys were eliminated through listwise deletion. Listwise deletion will exclude the entire case from the data analysis if any of the variables have missing values. After listwise deletion, the final number of responses included in the data analysis was 112.

Descriptive Statistics

The overall response rate of this study was 23 percent. To assess the validity of this study, characteristics of non-responders should be compared to responders. Comparing characteristics of the non-responders to the responders identifies potential biases. The data collected did not provide information on non-responders. However, examining the demographic characteristics of Physician Assistants in the United States provided information on whether these characteristics were mirrored among the survey responders.

The American Academy of Physician Assistants reported in the 2010 Census Report, that the total population of PAs in Kentucky was 936 (American Academy of Physician Assistants, 2010). Of the total population of PAs, females accounted for 66.9%, while males accounted for 31.9%. Gender was not specified for 1.2% of the respondents. This disproportionate distribution is also reflected in other demographic characteristics such as

race and ethnicity; with Caucasian, non-Hispanics representing 72 % of the population as compared to African Americans and Hispanics at 0.2%, Asians at 0.4% and Unknown at .003%. Race and ethnicity was unknown for 19% of the respondents. Descriptive statistics reflecting the demographics for all of study participants and cross tabulations were done for each clinical vignette group are reported in Tables 1 thru 7. Of study participants, 68.9 percent were females and 28.7 percent were males. Caucasians disproportionately represented the study population at 92.7 percent, with 2.7 percent African American and 1.8 percent Asian (Table 1 and 3). These statistics suggest that the study participants have similar demographic characteristics similar to the reported population of Physician Assistants in Kentucky.

Table 1

Demographic Results of Physician Assistant Survey Participants

Variables	Physician Assistants Respondents (N=112)	Kentucky Physician Assistants (N=936)
Gender		
Male	28.7% (n=31)	31.9% (n=299)
Female	68.8% (n=77)	66.9% (n=627)
Race (n=110)		
African-American/Black	2.7% (n=3)	2.1% (n=20)
Hispanic/Latino	0.0% (n=0)	2.0% (n= 19)
White, non-Hispanic	92.7% (n=102)	72.0% (n=675)
Asian, Pacific Islander or Indian subcontinent	1.8% (n=2)	4.2% (n=40)
Race/Ethnicity not listed, please specify	2.7% (n=3)	0.3% (n=3)
Age (n=110)		
20-29	14.5% (n=16)	N/A
30-39	33.6% (n=37)	
40-49	25.5%(n=28)	
50-59	15.5%(n=17)	
60 or <	10.7%(n=12)	

Table 1 (Continued)

Demographic Results of Physician Assistant Survey Participants

Variables	Physician Assistants Study Respondents (N=112)	Kentucky Physician Assistants (N=936)
Years in Practice		
< 5	27.5% (n=30)	N/A
5-9	27.5% (n=30)	
10-14	19.3% (n=21)	
15-19	9.2% (n=10)	
20 or more	16.5% (n=18)	
Practice Specialty		
Emergency Medicine	18.2% (n=20)	11.0% (n= 109)
Family Practice	23.6% (n=26)	37.2% (n= 349) ^a
General Surgery	.9% (n=1)	1.6% (n= 34)
Hematology/Oncology	.9% (n=1)	11.0% (n= 109)
Internal Medicine	10.9% (n=12)	10.2% (n= 96)
Neurology/surgery	3.6% (n=4)	2.5% (n= 24) ^b
Otorhinolaryngology	1.8% (n=2)	N/A
Orthopedic/Surgery	10% (n=11)	0.6% (n= 5)
Pediatrics	1.8% (n=2)	5.5% (n= 52)
Plastic Surgery	.9% (n=1)	1.4% (n= 13)
Urology	.9% (n=1)	0.0% (n= 0)
Other	21.8% (n=24)	0.4% (n= 4)
Practice Environment		
Hospital based	25.5% (n=28)	26.8% (n= 251)
Individual practice	13.6% (n=15)	12.3% (n= 116)
Small group practice (≥ 5)	29.1% (n=32)	N/A
Large group practice (≤ 6)	22.7% (n=25)	N/A
Other	9.1% (n=10)	N/A
Practice Location		
Urban	30.3% (n=33)	
Suburban	32.1% (n=35)	
Rural	37.6% (n=41)	

Note. ^a. This is representative of family medicine, with or without urgent care, general internal medicine, general pediatrics and obstetrics and gynecology. ^b. Combined neurology and neurosurgery

Over half of the study participants have been practicing for nine years or less (55%, n=60), with a majority between the ages of 30-39 (33.6%, n=37) and 40-49 (25.5%, n=28). The majority of Physician Assistants participating in the study practice family medicine, 23.6 %, followed by emergency medicine at 18 %. Practice location was proportional between urban, suburban and rural location (30.3%, 32.1%, and 37.6%, respectively).

Cross-tabulations were done on the demographic characteristics for each of the four clinical vignette groups. All participants were randomly assigned to receive one of the four clinical vignettes; reducing any effects of selection bias. The variability of demographic characteristics in each group was used to emphasize potential variables that could be used in a subset analysis exploring the differences between each group.

Characteristics for gender in each of the four groups, showed that female participants outnumbered male participants at a 2:1 ratio (Table 2). These findings were similar to the previous results on the entire population of study participants found in Table 1.

Table 2

Distribution of Gender of Respondents in each Clinical Vignette Group

Gender	Group in four categories				Total
	AA LSES	WW LSES	WW HSES	AA HSES	
Male	6	9	10	6	31
Female	18	20	20	19	77
Total	24	29	30	25	108

Note. AA= African American woman, WW= Caucasian woman, LSES= low socioeconomic status, HSES= high socioeconomic status

Similar results were seen with further descriptive analysis of the survey participants' race/ethnicity. The race and ethnicity of the respondents consisted predominantly of Caucasian physician assistants (102 out of 112, 92.7%) (Table 3). The spread of participants does not reflect a normal distribution; therefore, further significance testing for differences between variables would be inappropriate.

Table 3
Distribution of Race and Ethnicity of Respondents

Race and Ethnicity	Group in four categories				Total (Percentage)
	AA LSES	WW LSES	WW HSES	AA HSES	
African-American/Black	0	1	0	2	3 (2.7%)
White, non-Hispanic	23	27	29	23	102 (92.0%)
Asian, Pacific Islander	1	0	0	1	2 (1.8%)
Race/Ethnicity not listed	0	1	1	1	3 (2.7%)
Total	24	29	30	27	110 (100)

Note. AA= African American woman, WW= Caucasian woman, LSES= low socioeconomic status, HSES= high socioeconomic status

The age range for participants was 20 to greater than 60 years of age with the majority of respondents being between 30-39 years of age (33.6%) and 40-49 years of age (25.4%) (Table 4). However, the age range of respondents for each clinical vignette showed a normal distribution of approximation, suggesting that age was not a confounding difference between groups (Figure1).

Table 4

Distribution of Age of Respondents in each Clinical Vignette Group

Age Range	Group in four categories				Total (%)
	AA LSES	WW LSES	WW HSES	AA HSES	
20-29	2	4	5	5	16 (14.5%)
30-39	6	10	10	11	37 (33.6%)
40-49	8	8	7	5	28 (25.4%)
50-59	5	3	5	4	17 (15.4%)
60 or greater	3	4	3	2	12 (10.9%)
Total	24	29	30	27	110(100%)

Note. AA= African American woman, WW= Caucasian woman, LSES= low socioeconomic status, HSES= high socioeconomic status.

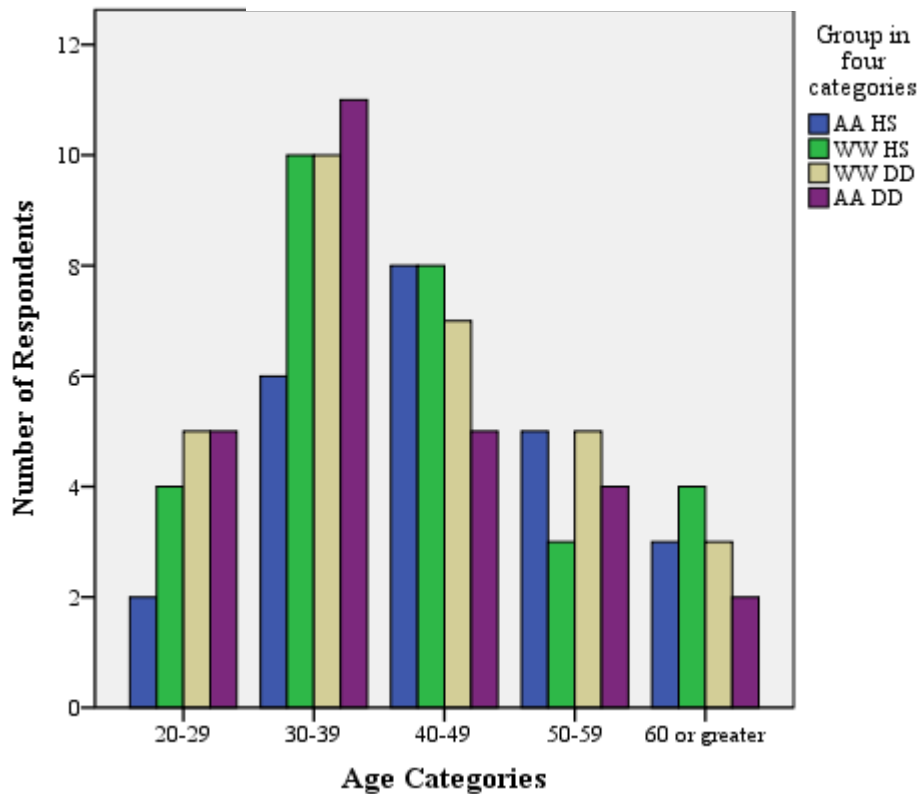


Figure 1. Distribution of Age of Respondents

There is a large amount of variability in demographic characteristics seen in years in practice, practice type and practice location among the respondents (Tables 5- 7, Figures 2-3). The majority of respondents have practice for nine years or less (<5 years at 27.5% and 5-9 years at 27.5%), and followed by 10-14 years in practice (19.3%) (Table 5, Figure 2). Surprisingly, the participants with next highest percentage of practice years was 20 years or greater (16.5%), followed by 15-19 years in practice (9.2%).

Table 5

Distribution of Years in Practice among Respondents in each Clinical Vignette Group

		Group in four categories				Total (Percentage)
		AA	WW	WW	AA	
		LSES	LSES	HSES	HSES	
How many years have you been practicing medicine as a physician assistant in this community?	< 5	4	10	8	8	30 (27.5%)
	5-9	5	9	11	5	30 (27.5%)
	10-14	5	4	6	6	21(19.3%)
	15-19	2	3	1	4	10 (9.2%)
	20 or >	8	3	4	3	18 (16.5%)
		24	29	30	26	109 (100%)

Note. AA= African American woman, WW= Caucasian woman, LSES= low socioeconomic status, HSES= high socioeconomic status.

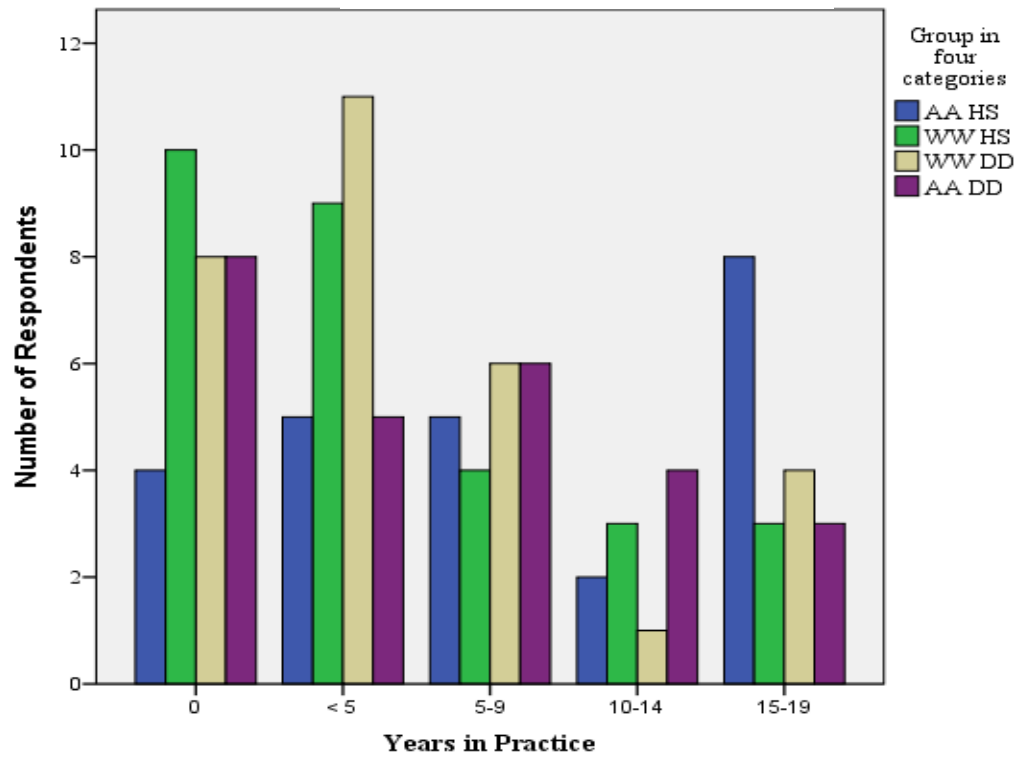


Figure 2. Distribution of Years in Practice among Respondents

The responses of the survey participants on characteristics of their primary practice showed that a majority of respondents practice in a small group setting of five or less practitioners (29.1%), followed by hospital type setting (25.0%), large group practice with greater than six practitioners (22.7%) and individual practice (13.6%). The primary practice type is well distributed among survey participants (Table 6, Figure 3).

Table 6

Distribution of Primary Practice Type of Respondents in each Clinical Vignette Group

Primary Practice Type	Group in four categories				Total (%)
	AA	WW	WW	AA	
	LSES	LSES	HSES	HSES	
Hospital Based	6	8	7	7	28 (25.0%)
Individual Practice	6	3	4	2	15 (13.6%)
Small group (≤5)	6	10	9	7	32 (29.1%)
Large group (≥6)	5	6	6	8	25 (22.7%)
Other	1	2	4	3	10 (9.1%)
Total	24	29	30	27	110 (100%)

Note. AA= African American woman, WW= Caucasian woman, LSES= low socioeconomic status, HSES= high socioeconomic status.

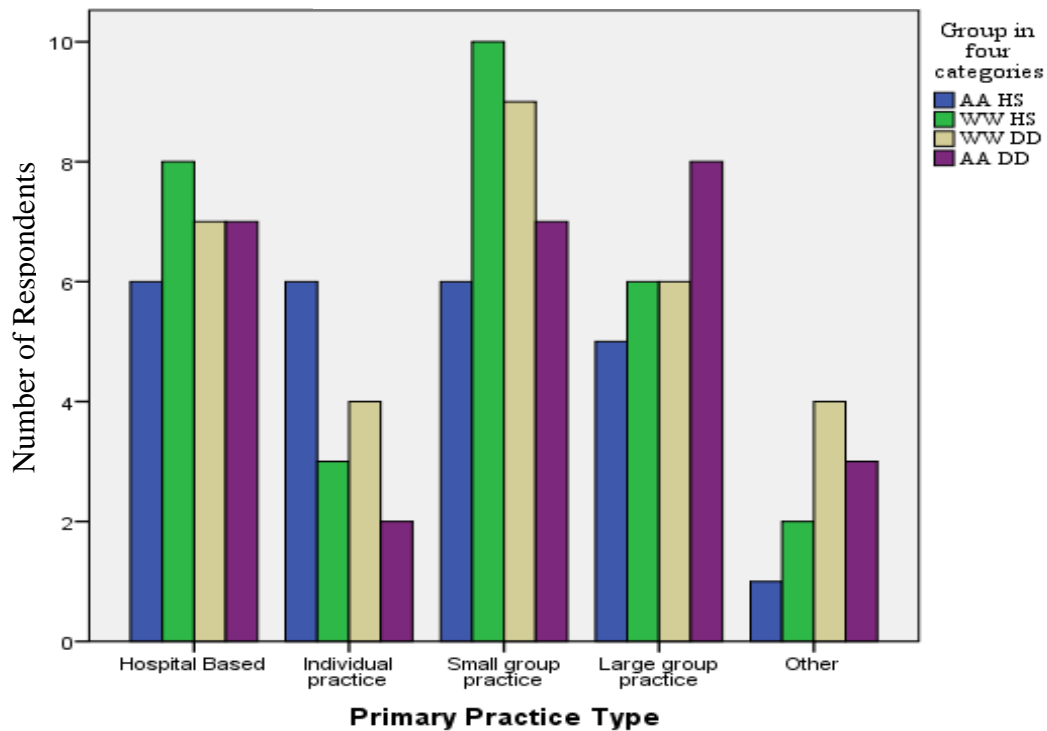


Figure 3. Distribution of Primary Practice Type of Respondents

Practice location was relatively evenly distributed among survey participants. Of the survey participants that responded, a majority practiced in a rural setting (37.6%), followed by suburban (32.1%) and urban (30.3%) (Table 7 and Figure 4).

Table 7

Distribution of Primary Practice Location of Respondents in each Clinical Vignette Group

		Group in four categories				Total (Percentage)
		AA LSES	WW LSES	WW HSES	AA HSES	
Practice Location	Urban	10	7	10	6	33 (30.3%)
	Suburban	5	7	12	11	35 (32.1%)
	Rural	9	14	8	10	41 (37.6%)
Total		24	28	30	27	109 (100%)

Note. AA= African American woman, WW= Caucasian woman, LSES= low socioeconomic status, HSES= high socioeconomic status.

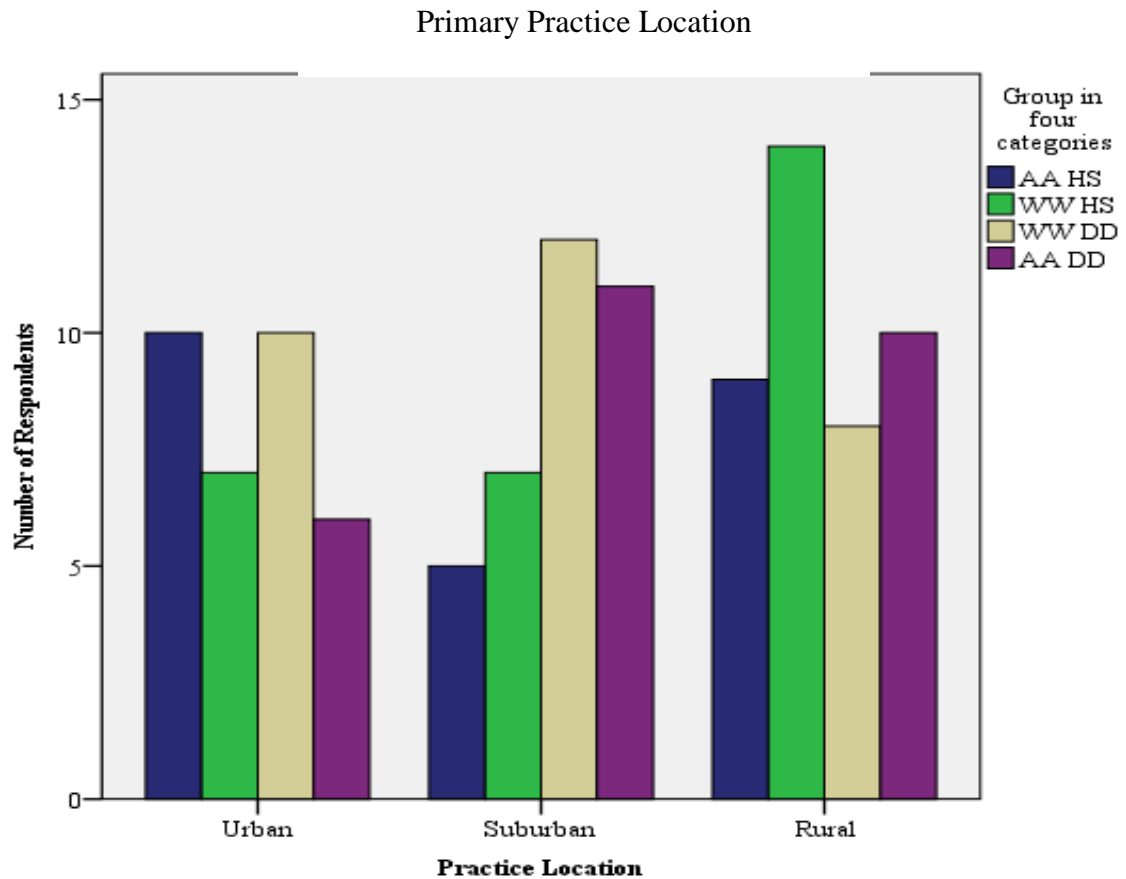


Figure 4. Distribution of Primary Practice Location of Respondents

Statistical Analysis

Research Question 1

The purpose of research question one was to examine the routine screening practice recommendations among Physician Assistants in this study. To answer this question, a total score was calculated for each of the 17 screening recommendations and the 15 screening test recommendations. Each recommendation item was measured using Likert scales. The Likert items range from 1= Very Unlikely to 4=Very Likely. The hypotheses examined were constructed on differences in reported screening recommendations.

Hypotheses

H₀: There are no differences in the reported routine screening recommendation practices of Physician Assistants assigned to the clinical vignettes in this study.

H₁: There are differences in reported the routine screening recommendation practices of Physician Assistants assigned to the clinical vignettes in this study.

H_{1a}: Physician Assistants assigned to the African American patient scenario will report significantly lower routine screening recommendations as compared to Physician Assistants assigned to the Caucasian patient scenario.

H_{1b}: Physician Assistants assigned to the lower socioeconomic status patient scenario are less likely to offer appropriate preventative routine screening recommendations as compared to Physician Assistants assigned to the high socioeconomic status patient scenario.

The dependent variables used in this study are interval variables composed of Likert items ranging from 1= Very Unlikely to 4=Very Likely. The means and standard deviations were calculated for each of the 17 screening recommendation dependent variables and the

15 screening recommendation test. The means and standard deviations for the dependent variables were separated by the four clinical vignette combinations created from the two independent variables with two levels of race (African American and Caucasian) and socioeconomic status (low socioeconomic status and high socioeconomic status) (Table 8).

Table 8

Descriptive Statistics of Clinical Vignette Groups

	Race_SES									
	AA & LSES		WW& LSES		WW & HSES		AA & HSES		Total	
	<i>n= 25</i>		<i>n=29</i>		<i>n=30</i>		<i>n=28</i>		<i>N=112</i>	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Dental Health	1.96	1.01	1.86	.83	1.90	.80	1.893	.92	1.90	.88
HTN	3.44	.768	3.66	.48	3.77	.43	3.39	.83	3.57	.65
Lipid	3.28	.843	3.38	.77	3.60	.56	3.36	.83	3.41	.75
Alcohol	3.36	.757	3.48	.63	3.30	.88	3.21	.79	3.34	.77
Breast CA	3.24	.879	3.41	.78	3.50	.68	3.29	.81	3.37	.78
Tobacco	3.60	.707	3.69	.54	3.70	.60	3.50	.69	3.63	.63
Diabetes	3.40	.764	3.52	.63	3.50	.63	3.36	.95	3.45	.75
Pre Concept	2.48	1.04	2.31	.81	2.50	1.07	2.36	1.02	2.41	.98
Sexual Health	3.00	1.00	2.69	.81	2.87	.94	2.54	1.13	2.77	.98
Sedentary LS	3.00	.866	2.90	.98	2.67	.96	2.57	.92	2.78	.94
IPV	2.20	.913	2.17	.81	1.90	.76	2.00	.82	2.06	.82
Diet Exercise	3.20	.816	3.07	.96	2.97	.85	2.86	.93	3.02	.89
Obesity	2.76	.926	3.07	.84	3.00	.91	2.61	1.10	2.87	.95
Depression	2.76	.879	2.93	.92	2.77	.82	2.46	.92	2.73	.89
CA Prevent	2.68	.852	2.83	.81	2.67	.88	2.64	.83	2.71	.83
Immunization	2.68	1.03	3.03	.82	2.93	.91	2.21	.79	.93	2.72
Firearm Safe	1.52	.510	1.66	.61	1.50	.57	1.54	.64	1.55	.58

Note. AA= African American woman, WW= Caucasian woman, LSES= low socioeconomic status, HSES= high socioeconomic status. Higher scores indicate the increased likelihood that the recommendation is offered.

Table 8 (Continued)

Descriptive Statistics of Clinical Vignette Groups

	Race_SES									
	AA & LSES		WW & LSES		WW & HSES		AA & HSES		Total	
	<i>n</i> = 25		<i>n</i> = 29		<i>n</i> = 30		<i>n</i> = 28		<i>N</i> = 112	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
BP Reading	3.96	.200	3.93	.26	3.90	.40	3.75	.65	3.88	.42
Mammogram	2.28	1.17	2.90	1.01	2.50	1.00	2.71	.85	2.61	1.02
Cervical CA/P	3.48	.918	3.55	.69	3.67	.66	3.46	.64	3.54	.72
CBC	3.32	.852	3.41	.73	3.63	.62	3.11	.83	3.38	.77
Lipid Panel	3.36	.81	3.24	.83	3.63	.62	3.18	.77	3.36	.77
TSH	3.32	.85	3.24	.79	3.60	.62	3.07	.81	3.31	.78
Blood Glucose	3.36	.81	3.28	.84	3.63	.56	3.14	.80	3.36	.77
Stool Guaiac	2.00	.87	2.45	.83	2.00	.91	1.82	.67	2.07	.85
Colonoscopy	1.52	.59	1.90	.72	1.87	.78	1.75	.75	1.77	.72
Liver Function	2.92	1.07	2.97	.98	3.27	.94	2.86	.97	3.01	.99
Renal Function	2.96	.98	3.14	.95	3.33	.88	2.89	.99	3.09	.95
HIV testing	2.24	.83	1.97	.73	2.20	.71	2.00	.82	2.10	.77
TB Screen test	1.96	.74	1.86	.69	1.83	.70	1.75	.65	1.85	.69
Iron	2.12	.78	2.55	.99	2.20	.85	2.32	.77	2.30	.86
FolateB12	2.12	.78	2.31	.80	2.27	.87	2.21	.74	2.23	.79

Note. AA= African American woman, WW= Caucasian woman, LSES= low socioeconomic status, HSES= high socioeconomic status. Higher scores indicate the increased likelihood that the recommendation is offered.

Multivariate analysis of variance was conducted to identify differences in the dependent variables as a function of race and socioeconomic status.

The multivariate analysis was conducted as a general linear model using the Statistical Package for Social Sciences (SPSS v. 21.0) software. Multivariate analysis was used to examine the mean scores for the likelihood of suggesting screening recommendations and screening test recommendations for each of the two independent variables of race and socioeconomic status. To proceed with a MANOVA, equality of covariance matrices and homogeneity of

variance assumptions had to be satisfied. The Box's Test evaluated the assumption that the covariance across matrices was the same across both independent variables. The Box's Test showed that the covariances were significantly different. This suggested that assumption of homogeneity of covariance was violated. Therefore, the null hypothesis cannot be rejected. However, Box's Test is sensitive to having equal sample sizes across groups, affecting the test robustness. Each cell had an unequal number of respondents suggesting that robustness cannot be assumed in the MANOVA (Table 8). To account for an unequal number of respondents, a Type III sum of squares was used to correct for the unequal number of respondents and lack of balance across the two independent variables of race and socioeconomic status.

Homogeneity of error variances was evaluated using Levene's test. The Levene's test was not significant for any of the dependent variables, confirming that the assumption of equality of error variances was equal across all the dependent variables ($p > .001$). The assumption of independence was met due to random sampling procedures. The sample means for each dependent variable are approximately normally distributed with appropriate skewness and kurtosis. These findings suggest that the assumption of homogeneity of covariance was violated.

Screening Recommendations: MANOVA Results

Multivariate test violations were further evaluated for robustness. Cohen's criteria were used to examine the effect size. The criteria suggest that the effect size is small when η^2 is equal to .01, medium effect when η^2 is equal to .06 and a larger effect size when η^2 is equal or greater than 0.14 or greater is considered large (Cohen, 1988). With an alpha level = .05, a one-way MANOVA showed statistical significant main effect for race differences on screening recommendations Pillai's Trace (V) = .26, $F(17, 92) = 1.87$, $p = .03$, $\eta^2 = .26$,

observed power =.94 (Table 9). These findings are statistically significant but not clinically significant.

However, it did not show a statistically significant result based on an $\alpha = .05$ for socioeconomic status and the interaction term of race and socioeconomic status. There was a large main effect for difference in screening recommendations for socioeconomic status Pillai's Trace (V) = .11, $F(17, 92) = .68$, $p = .82$, $\eta^2 = .43$, or the interaction term of race and socioeconomic status, Pillai's Trace (V) = .110, $F(17, 92) = .67$, $p = .82$, $\eta^2 = .43$ (Table 9). This finding could be due to the study sample size. Based on these findings, the null hypothesis indicating no differences in the reported routine screening recommendation practices of Physician Assistants was rejected. The alternative hypothesis indicated differences in reported the routine screening recommendation practices of Physician Assistants was accepted.

Table 9

Multivariate Statistical Results for Screening Recommendations

	Effect	Value	F	H df	Error df	Sig.	η^2	Observed Power ^c
recodedPtRace	Pillai's Trace	.257	1.88 ^b	17.00	92.00	.03	.26	.94
	Wilks' Lambda	.743	1.88 ^b	17.00	92.00	.03	.26	.94
	Hotelling's Trace	.347	1.88 ^b	17.00	92.00	.03	.26	.94
	Roy's Largest	.347	1.88 ^b	17.00	92.00	.03	.26	.94
recodedPtSES1	Root							
	Pillai's Trace	.111	.68 ^b	17.00	92.00	.82	.11	.43
	Wilks' Lambda	.889	.68 ^b	17.00	92.00	.82	.11	.43
	Hotelling's Trace	.125	.68 ^b	17.00	92.00	.82	.11	.43
recodedPtRace * recodedPtSES	Roy's Largest	.125	.68 ^b	17.00	92.00	.82	.11	.43
	Root							
	Pillai's Trace	.110	.67 ^b	17.00	92.00	.82	.11	.43
	Wilks' Lambda	.890	.67 ^b	17.00	92.00	.82	.11	.43
	Hotelling's Trace	.124	.67 ^b	17.00	92.00	.82	.11	.43
	Roy's Largest	.124	.67 ^b	17.00	92.00	.82	.11	.43
	Root							

a. Design: Intercept + recodedPtRace + recodedPtSES1

b. Exact statistic

c. Computed using alpha = .05

The significant MANOVA results justified proceeding with analysis of the alternative hypotheses; H_{1a} : Physician Assistants assigned to the African American patient scenario will report significantly lower routine screen recommendations as compared to Physician Assistants assigned to the Caucasian patient scenario.

The differences between African American patients and Caucasian patients in the clinical vignette on the screening recommendations variables was statistically significant, Pillai's Trace (V) = .26, $F(17, 92) = 1.87$, $p = .03$, $\eta^2 = .26$, observed power = .94 (Table 9).

Pearson r coefficient correlation analysis was used to show any relationship or correlation

between the independent variables and the dependent variables. Cohen's criteria were used to examine the effect size of the result. The effect sizes suggest the following: a r equal to .10 have small effects, r equal to .30 have medium effects and r equal to .50 or greater indicate large effects. (Cohen, 1988). The analysis revealed that the independent variable of race had a positive relationship with three dependent variables, HTN $r(112) = .23, p = 0.016$, Obesity $r(112) = .19, p = .049$ and Immunization $r(112) = .30, p = .002$. The mean scores were statistically significantly different between Caucasian women and African American women on hypertension screening ($p = .016$), Obesity ($p = .049$) and Immunizations ($p = .003$) (Table 10).

ANOVA Results Related to Routine Screening Recommendations

Univariate analysis was conducted to examine the overall main effect. Multiple ANOVAs increase the incidence of family wise error or Type I error, rejecting the null hypothesis when it is true. A software calculated Bonferroni correction ($p = .02$) was used to protect against alpha inflation at the level of multiple univariate ANOVAs. Applying this correction reduced the chance of family wise error that the probability that any one of the significance test is a Type I error.

Follow-up univariate ANOVAs showed that the main effect for race has a statistically significant effect on screening recommendations of Hypertension (HTN), $F(1,112) = 5.832; p = .017; \eta^2 = .051$, Immunization $F(1,112) = 10.20; p = .002; \eta^2 = .086$. With the corrected alpha, $p = .02$ Obesity $F(1,112) = 3.82; p = .053; \eta^2 = .03$ was not significant (Table 10). Post hoc testing performed on only two independent variable groups would produce previous results from the omnibus test and therefore are not required.

Pairwise comparison tests showed that for African American patients in the clinical vignette had significantly lower mean screening recommendations for hypertension (HTN) ($p = 0.17$), Obesity ($p = .05$), and Immunizations ($p = .002$) (Table 11).

Table 10

ANOVA Results for Screening Recommendations for Race and Socioeconomic Status

Source	Dependent Variable	Mean Sq	F	Sig	Partial Eta	Observed Power
recodedPtRace	DentalHealth	.057	.072	.789	.001	.058
	HTN	2.41	5.83	.017	.051	.668
	Lipid	.816	1.433	.234	.013	.220
	Alcohol	.303	.511	.476	.005	.109
	BreastCA	1.04	1.69	.196	.015	.252
	Tobacco	.585	1.45	.231	.013	.223
	DiabetesM	.471	.832	.364	.008	.148
	PreConception	.005	.005	.943	.000	.051
	SexualHealth	.003	.003	.956	.000	.050
	SedentaryLifestyle	.000	.001	.982	.000	.050
	IPV	.113	.168	.683	.002	.069
	DietExercise	.003	.004	.949	.000	.050
	Obesity	3.43	3.82	.053	.034	.491
	Depression	1.561	1.99	.161	.018	.287
	CancerPrevention	.205	.288	.592	.003	.083
	ImmunizationHx	8.03	10.20	.002	.086	.886
	FirearmSafety	.069	.200	.656	.002	.073

Table 10 (Continued)

ANOVA Results for Screening Recommendations for Race and Socioeconomic Status

Source	Dependent Variable	Mean Sq	F	Sig	Partial Eta	Observed Power
PtRace * PtSES1	DentalHealth	.077	.097	.756	.001	.061
	HTN	.175	.423	.517	.004	.099
	Lipid	.144	.252	.617	.002	.079
	Alcohol	.010	.016	.899	.000	.052
	BreastCA	.011	.018	.892	.000	.052
	Tobacco	.085	.211	.647	.002	.074
	DiabetesM	.005	.008	.929	.000	.051
	PreConception	.680	.691	.408	.006	.131
	SexualHealth	2.865	3.015	.085	.027	.406
	SedentaryLifestyle	.275	.315	.576	.003	.086
	IPV	.037	.054	.816	.001	.056
	DietExercise	.403	.505	.479	.005	.108
	Obesity	.049	.055	.816	.001	.056
	Depression	.120	.153	.696	.001	.067
	CancerPrevention	.107	.150	.699	.001	.067
	ImmunizationHx	.926	1.177	.280	.011	.189
	FirearmSafety	.203	.590	.444	.005	.119

Table 11

Multiple Comparisons of Screening Recommendations

Dependent Variable	(I) Pt Race in Vignette	(J) Pt Race in Vignette	Mean Difference (I-J)	Std. Error	Sig. ^b	95% Confidence Interval for Difference	
						Lower Bound	Upper Bound
DentalHealth	AA	WW	.045	.169	.789	-.289	.380
	WW	AA	-.045	.169	.789	-.380	.289
HTN	AA	WW	-.294*	.122	.017	-.536*	-.053
	WW	AA	.294*	.122	.017	.053*	.536
Lipid	AA	WW	-.171	.143	.234	-.454	.112
	WW	AA	.171	.143	.234	-.112	.454
Alcohol	AA	WW	-.104	.146	.476	-.393	.185
	WW	AA	.104	.146	.476	-.185	.393
BreastCA	AA	WW	-.194	.149	.196	-.489	.101
	WW	AA	.194	.149	.196	-.101	.489
Tobacco	AA	WW	-.145	.120	.231	-.383	.093
	WW	AA	.145	.120	.231	-.093	.383
DiabetesM	AA	WW	-.130	.143	.364	-.413	.153
	WW	AA	.130	.143	.364	-.153	.413
PreConception	AA	WW	.013	.188	.943	-.359	.386
	WW	AA	-.013	.188	.943	-.386	.359
SexualHealth	AA	WW	-.010	.185	.956	-.376	.356
	WW	AA	.010	.185	.956	-.356	.376
SedentaryLifestyle	AA	WW	.004	.177	.982	-.347	.355
	WW	AA	-.004	.177	.982	-.355	.347

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.

Table 11 (Continued)

Multiple Comparisons of Screening Recommendations

Dependent Variable	(I) Pt Race in Vignette	(J) Pt Race in Vignette	Mean Difference (I-J)	Std. Error	Sig. ^b	95% Confidence Interval for Difference	
						Lower Bound	Upper Bound
IPV	AA	WW	.064	.156	.683	-.245	.372
	WW	AA	-.064	.156	.683	-.372	.245
DietExercise	AA	WW	.011	.169	.949	-.325	.346
	WW	AA	-.011	.169	.949	-.346	.325
Obesity	AA	WW	-.351	.180	.053	-.707	.005
	WW	AA	.351	.180	.053	-.005	.707
Depression	AA	WW	-.237	.168	.161	-.569	.096
	WW	AA	.237	.168	.161	-.096	.569
CancerPrevention	AA	WW	-.086	.160	.592	-.402	.231
	WW	AA	.086	.160	.592	-.231	.402
ImmunizationHx	AA	WW	-.537*	.168	.002	-.870*	-.204
	WW	AA	.537*	.168	.002	.204*	.870
FirearmSafety	AA	WW	-.050	.111	.656	-.270	.171
	WW	AA	.050	.111	.656	-.171	.270

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.

Screening Recommendations Mean Scores

Upon investigating the means, it appears that the main effect for race occurs with only three of the 17 screening recommendation variables. The means for the seventeen screening recommendations can be found in Table 34. Based on the mean Likert scale score for screening recommendations African American patients in the clinical vignette were less likely to receive recommendations, when compared to the Caucasian patient in the clinical vignette for nine of the 17 screening recommendations variable, HTN ($M= 3.42, SE=.09, M= 3.71, SE=.08$), Lipids ($M= 3.32, SE=.1 M= 3.50, SE=.10$), Alcohol ($M= 3.29, SE=.11, M= 3.4, SE=.10$), Breast Cancer ($M= 3.27, SE=.11, M= 3.50, SE=.10$), Tobacco ($M= 3.55, SE=.09, M= 3.70, SE=.09$), Diabetes ($M= 3.38, SE=.10, M= 3.51, SE=.10$), Obesity ($M= 2.68, SE=.13, M= 3.03, SE=.12$), Depression ($M= 2.61, SE=.12, M= 2.85, SE=.12$), Immunization ($M= 2.43, SE=.12, M= 2.98, SE=.12$) (Table 12).

Eight screening recommendations were fairly similar for both African American patients and Caucasian patients in the clinical vignette however; four of these show an increase bias toward African American patients receiving recommendations. Those that were similar include, Dental Health ($M= 1.93, SE=.12, M= 1.88, SE=.12$), Sedentary Lifestyle ($M= 2.79, SE=.13, M= 2.78, SE=.12$), Diet and Exercise ($M= 3.03, SE=.12, M= 3.02, SE=.12$) and Preconception counseling ($M= 2.42, SE=.14, M= 2.40, SE=.13$). The four recommendations that showed a decrease likelihood towards the African American patients receiving screening recommendations were, Sexual Health ($M= 2.77, SE=.13, M= 2.78, SE=.13$), Firearm Safety ($M= 1.53, SE=.08, M= 1.58, SE=.08$), Cancer Prevention ($M= 2.66, SE=.12, M= 2.75, SE=.11$), and Intimate Partner Violence (IPV) ($M= 2.04, SE=.11, M= 2.10, SE=.11$) (Table 12). Participants were less likely to recommend hypertension (HTN) screening to African American women ($M= 3.42, SE=.09$) when

compared to Caucasian women ($M= 3.71, SE =.08$). The respondents were also less likely to recommend Obesity screening to African American women ($M= 2.68, SE= .13$) when compared to Caucasian women ($M= 3.03, SE =.12$) and Immunization screening to African American women ($M= 2.45, SE= .12$) when compared to Caucasian women ($M= 2.98, SE =.12$) (Table 12).

Table 12

Mean Estimates for Screening Recommendation based on Race

<i>Estimates</i>					
Dependent Variable	Pt Race in Vignette	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
DentalHealth	AA	1.93	.12	1.68	2.17
	WW	1.88	.12	1.65	2.11
HTN	AA	3.42	.09	3.24	3.59
	WW	3.71	.08	3.55	3.88
Lipid	AA	3.32	.10	3.11	3.52
	WW	3.49	.10	3.30	3.68
Alcohol	AA	3.29	.11	3.08	3.50
	WW	3.39	.10	3.19	3.59
BreastCA	AA	3.26	.11	3.05	3.48
	WW	3.46	.10	3.25	3.66
Tobacco	AA	3.55	.09	3.38	3.72
	WW	3.70	.08	3.53	3.86
DiabetesM	AA	3.38	.10	3.17	3.58
	WW	3.51	.10	3.31	3.70
PreConception	AA	2.42	.14	2.15	2.69
	WW	2.41	.13	2.15	2.66
SexualHealth	AA	2.77	.13	2.50	3.03
	WW	2.78	.13	2.53	3.03
SedentaryLifestyle	AA	2.79	.13	2.53	3.04
	WW	2.78	.12	2.54	3.02
IPV	AA	2.10	.11	1.88	2.32
	WW	2.04	.11	1.82	2.25
DietExercise	AA	3.03	.12	2.79	3.27
	WW	3.02	.12	2.79	3.25
Obesity	AA	2.68	.13	2.43	2.94
	WW	3.03	.12	2.79	3.28
Depression	AA	2.61	.12	2.37	2.85
	WW	2.85	.12	2.62	3.07
CancerPrevention	AA	2.66	.12	2.43	2.89
	WW	2.75	.11	2.53	2.97
ImmunizationHx	AA	2.45	.12	2.21	2.69
	WW	2.98	.12	2.76	3.23
FirearmSafety	AA	1.53	.08	1.37	1.68
	WW	1.58	.08	1.43	1.73

Screening Test Recommendations: MANOVA Results

Multivariate test violations were further evaluated for robustness. Cohen's criteria were used to determine the effect sizes for the results. The effect size is small when η^2 is equal to .01, medium effect when η^2 is equal to .06 and a larger effect size when η^2 is equal or greater than .14 or greater is considered large (Cohen, 1988).. With an alpha level = .05, a one-way MANOVA did not showed a statistically significant main effect for race on screening test recommendations, Pillai's Trace (V) = .135, $F(15, 94) = .85$, $p = .62$, $\eta^2 = .12$, observed power = .52 (Table 13) or socioeconomic status on screening test recommendations Pillai's Trace (V) = .135, $F(15, 94) = .98$, $p = .48$, $\eta^2 = .14$, observed power = .60 (Table 13). However, there was a statistically significant main effect for difference screening test recommendation for the interaction term of race and socioeconomic status, Pillai's Trace (V) = 2.57, $F(15, 94) = 2.164$, $p = .013$, $\eta^2 = .257$, observed power = .956 (Table 13).

The multivariate statistical analysis did not reveal a significant main effect for the separate independent variable of race or socioeconomic status. Therefore, further analysis of the two independent variables was not warranted. The main effect was seen only for the interaction term for race and socioeconomic status on screening recommendation test. The interaction term of race and socioeconomic status was not hypothesized.

Table 13

Multivariate Statistical Tests for Screening Test Recommendations^a

Effect	Value	F	H df	Error df	Sig.	η^2	Observed Power ^c	
recodedPtRace	Pillai's Trace	.12	.85 ^b	15.00	94.00	.619	.120	.519
	Wilks'	.88	.85 ^b	15.00	94.00	.619	.120	.519
	Lambda							
recodedPtSES1	Hotelling's Trace	.14	.85 ^b	15.00	94.00	.619	.120	.519
	Roy's Largest Root	.14	.85 ^b	15.00	94.00	.619	.120	.519
	Pillai's Trace	.14	.98 ^b	15.00	94.00	.482	.135	.595
recodedPtRace	Wilks'	.87	.98 ^b	15.00	94.00	.482	.135	.595
	Lambda							
	Hotelling's Trace	.16	.98 ^b	15.00	94.00	.482	.135	.595
recodedPtSES1	Roy's Largest Root	.16	.98 ^b	15.00	94.00	.482	.135	.595
	Pillai's Trace	.26	2.16 ^b	15.00	94.00	.013	.257	.956
	Wilks'	.74	2.16 ^b	15.00	94.00	.013	.257	.956
recodedPtRace	Lambda							
*	Hotelling's Trace	.35	2.16 ^b	15.00	94.00	.013	.257	.956
recodedPtSES1	Roy's Largest Root	.35	2.16 ^b	15.00	94.00	.013	.257	.956

a. Design: Intercept + recodedPtRace + recodedPtSES1

b. Exact statistic

c. Computed using alpha = .05

ANOVA Results Related To Routine Screening Test Recommendations

The significant MANOVA results justified proceeding with analysis of the alternative hypotheses; H_1 : There are differences in the reporting of routine screening recommendation practices of Physician Assistants assigned to the clinical vignettes in this study. H_{1a} : Physician Assistants assigned to the African American patient scenario will

report significantly lower routine screen recommendations as compared to Physician Assistants assigned to the Caucasian patient scenario.

To protect against alpha inflation at the level of multiple univariate ANOVAs, a self-calculated $p = .003$ ($.05/15$) Bonferroni correction was used to reduce the chance of family-wise error increasing the likelihood of Type I error being committed.

With the Bonferroni correction applied, a one-way analysis of variance revealed that the effects for the interaction term for race and socioeconomic status were not statistically significant for screening test recommendation of Mammograms, $F(1, 108) = 4.68, p < .05; \eta^2 = .57$, Lipid Panel, $F(1, 108) = 3.98, p < .05; \eta^2 = .51$, Thyroid (TSH), $F(1, 108) = 4.35, p < .05; \eta^2 = .54$, and Blood Glucose test, $F(1, 108) = 4.01, p < .05; \eta^2 = .51$ (Table 14).

Table 14

ANOVA Results for Screening Test Recommendations

Source	Dependent Variable	Mean Sq.	F	Sig	Partial Eta	Observed Power
PtRace * PtSES	BP reading	.22	1.28	.26	.01	.20
	Mammogram	4.80	4.68	.03	.04	.57
	Cervical CA/Pap	.12	.23	.64	.00	.08
	CBC	1.30	2.27	.14	.02	.32
	Lipid Panel	2.29	3.98	.05	.04	.51
	TSH	2.57	4.35	.04	.04	.54
	Bld Glucose	2.30	4.01	.04	.04	.51
	Stool Guaiac	.51	.75	.39	.00	.14
	Colonoscopy	.47	.91	.34	.00	.16
	Liver Function	.92	.94	.34	.01	.16
	Renal Function	.48	.53	.47	.01	.11
	HIV testing	1.57	2.63	.11	.02	.36
	TB Screen test	.23	.48	.49	.00	.11
	Iron	2.13	2.93	.09	.03	.40
	FolateB12	.13	.21	.65	.00	.07

Screening Test Recommendations Mean Scores

The mean scores for screening test recommendations did, however, reveal some interesting results. Those participants assigned to the clinical vignette of an African American woman from a low socioeconomic status, were statistically less likely to recommend a mammogram as a screening test ($M=2.28$, $SE= 1.17$), when compared to those assigned to the clinical vignettes of a Caucasian women from high socioeconomic status ($M=2.50$, $SE= 1.00$), African American women from high socioeconomic status ($M = 2.71$, $SE=.85$) and Caucasian women from low socioeconomic status ($M=2.90$, $SE=1.01$) (Table 15).

The F statistics for a Lipid Panel, $F (1, 108) = 3.98$, $p <.05$, was non-significant with the adjusted p value. The mean scores for screening test recommendations revealed that participants assigned to the clinical vignette of an African American woman from higher socioeconomic status were less likely to recommend a Lipid Panel as a screening test ($M=3.18$, $SE= .77$), when compared to Caucasian woman from low socioeconomic status ($M= 3.24$, $SE= .81$), African American woman from a low socioeconomic status ($M= 3.36$, $SE=.81$), and Caucasian woman from high socioeconomic status ($M=3.63$, $SEE= .61$) (Table 15).

The F statistics for a Thyroid (TSH), $F (1, 108) = 4.34$, $p <.05$; partial eta squared = .542, was non-significant with the adjusted p value. The mean scores for screening test recommendations revealed that participants assigned to the clinical vignette of an African American woman from higher socioeconomic status were less likely to recommend a Thyroid (TSH) test as a screening test ($M=3.07$ $SE= .81$), when compared to Caucasian women from low socioeconomic status ($M= 3.24$, $SE= .78$) African American women from

a low socioeconomic status ($M= 3.32, SE= .85$) and Caucasian women from high socioeconomic status ($M=3.60, SE= .62$) (Table 15)

The F statistics for a Blood Glucose test, $F (1, 108) = 4.01, p <.05$; partial eta squared = .510, was non-significant with the adjusted p value (Table 14). The mean scores for screening test recommendations revealed that participants assigned to the clinical vignette of an African American woman from higher socioeconomic status were less likely to recommend a Blood Glucose test as a screening test ($M=3.14, SE= .80$), when compared to Caucasian women from low socioeconomic status ($M= 3.28, SE= .84$) African American women from a low socioeconomic status ($M= 3.36 SE= .81$) and Caucasian women from high socioeconomic status ($M=3.63 SE= .55$) (Table 15)

Table 15 Comparison of Screening Test Recommendations for Interaction Term

Dependent Variable	Pt Race in Vignette	Pt SES in Vignette	Mean	Std. Error	95% Confidence Interval	
					Lower Bound	Upper Bound
BPreading	AA	LSES	3.96	.08	3.80	4.13
		HSES	3.75	.08	3.59	3.91
	WW	LSES	3.93	.07	3.78	4.08
		HSES	3.90	.08	3.75	4.05
Mammogram	AA	LSES	2.28	.20	1.88	2.68
		HSES	2.71	.19	2.34	3.09
	WW	LSES	2.89	.19	2.52	3.27
		HSES	2.50	.19	2.13	2.87
CervicalCAPap	AA	LSES	3.48	.15	3.19	3.77
		HSES	3.46	.14	3.19	3.74
	WW	LSES	3.55	.14	3.28	3.82
		HSES	3.67	.13	3.40	3.93
CBC	AA	LSES	3.32	.15	3.02	3.62
		HSES	3.11	.14	2.82	3.39
	WW	LSES	3.41	.14	3.14	3.69
		HSES	3.63	.14	3.36	3.91
LipidPanel	AA	LSES	3.36	.15	3.06	3.66
		HSES	3.18	.14	2.89	3.46
	WW	LSES	3.24	.14	2.96	3.52
		HSES	3.63	.14	3.36	3.91
TSH	AA	LSES	3.32	.15	3.02	3.63
		HSES	3.07	.14	2.78	3.36
	WW	LSES	3.24	.14	2.96	3.52
		HSES	3.60	.14	3.32	3.88
BldGlucose	AA	LSES	3.36	.15	3.06	3.66
		HSES	3.14	.14	2.86	3.43
	WW	LSES	3.28	.14	2.99	3.56
		HSES	3.63	.14	3.36	3.90
StoolGuaiaac	AA	LSES	2.00	.17	1.67	2.33
		HSES	1.82	.16	1.51	2.13
	WW	LSES	2.45	.15	2.15	2.75
		HSES	2.00	.15	1.70	2.29
Colonoscopy	AA	LSES	1.52	.14	1.24	1.81
		HSES	1.75	.14	1.48	2.02
	WW	LSES	1.90	.13	1.63	2.16
		HSES	1.87	.13	1.61	2.13
LiverFunction	AA	LSES	2.92	.20	2.53	3.31
		HSES	2.86	.19	2.49	3.23
	WW	LSES	2.97	.18	2.60	3.33
		HSES	3.27	.18	2.91	3.63

Table 15 (Continued) Comparison of Screening Test Recommendations for Interaction Term

Dependent Variable	Pt Race in Vignette	Pt SES in Vignette	Mean	Std. Error	95% Confidence Interval	
					Lower Bound	Upper Bound
RenalFunction	AA	LSES	2.96	.19	2.58	3.34
		HSES	2.89	.18	2.54	3.25
	WW	LSES	3.14	.18	2.79	3.49
		HSES	3.33	.17	2.99	3.68
HIVtesting	AA	LSES	2.24	.15	1.93	2.55
		HSES	2.00	.15	1.71	2.29
	WW	LSES	1.97	.14	1.68	2.25
		HSES	2.20	.14	1.92	2.48
TBScreeentest	AA	LSES	1.96	.14	1.69	2.24
		HSES	1.75	.13	1.49	2.01
	WW	LSES	1.86	.13	1.61	2.12
		HSES	1.83	.13	1.58	2.08
Iron	AA	LSES	2.12	.17	1.78	2.46
		HSES	2.32	.16	2.00	2.64
	WW	LSES	2.55	.16	2.24	2.87
		HSES	2.20	.16	1.89	2.51
FolateB12	AA	LSES	2.12	.16	1.80	2.44
		HSES	2.21	.15	1.91	2.52
	WW	LSES	2.31	.15	2.02	2.61
		HSES	2.27	.15	1.98	2.56

Summary

This chapter provided a description of the sample using demographic characteristics. The overall multivariate analysis conducted showed that there was a significant main effect on race for three dependent variables in screening recommendations and the interaction term of race and socioeconomic status on four dependent variables in the screening test recommendations category. Findings for ANOVA are divided between main effects (race or socioeconomic status effect) and interaction (race and socioeconomic status effect). There was a statistically significant main effect of race Pillai's Trace (V) = 2.57, $F(17, 92) = 1.87$, $p = .03$, $\eta^2 = .257$, observed power = .937 (Table 9), on differences in screening recommendations for Hypertension (HTN), $F(1, 112) = 5.832$; $p = .017$; $\eta^2 = .051$, Immunization, $F(1, 112) = 10.20$; $p = .002$; $\eta^2 = .086$ (Table 10). The interaction term for race and socioeconomic status was statistically significant, Pillai's Trace (V) = 2.57, $F(15, 94) = 2.164$, $p = .013$, $\eta^2 = .257$, observed power = .956 (Table 13), for difference in screening test recommendations for Mammogram, $F(1, 108) = 4.68$, $p < .05$; $\eta^2 = .57$ Lipid Panel, $F(1, 108) = 3.98$, $p < .05$; $\eta^2 = .50$, Thyroid, $F(1, 108) = 4.34$, $p < .05$; $\eta^2 = .54$, Blood Glucose, $F(1, 108) = 4.011$, $p < .05$; $\eta^2 = .51$ (Table 14). Further univariate analyses of the data were evaluated using separate univariate analyses of variance utilizing software generated and self-calculated Bonferroni correction to evaluate statistical significance for each dependent variable. Statistical significant differences for race on screening recommendations were confirmed after Bonferroni correction was applied however, differences were not found after Bonferroni correction for the interaction term of race and socioeconomic status on screening test recommendations.

Chapter Five

Discussion and Conclusion

Chapter five provides a review of the overall purpose of the study and the intended purposes. This chapter provides a discussion on the interpretation of the results and study limitations. The conclusion provides implications for future research concerning health disparities and healthcare disparities.

The purpose of this study was to evaluate the routine screening recommendations of Physician Assistants. The study also sought to identify any potential disparities in screening recommendation practices that were associated with a patient's race and socioeconomic status. A review of the literature on health disparities and healthcare disparities provided a foundation for understanding the role of healthcare providers in the delivery of services. The literature also provided justification for conducting this study. This study was designed as a 2x2 factorial experiment, utilizing a survey instrument comprised of written clinical vignettes and Likert scale items. The survey instrument provided the reports on recommendation patterns of Physician Assistants in Kentucky ($N=112$). The independent variables were race and socioeconomic status, each with two levels (African American/Caucasian and waitress with high school diploma/ lawyer with doctorate degree).

Interpretation of the study findings are based on the foundation provided in the literature on health disparities and healthcare disparities. This chapter is organized to discuss 1) key findings in the study results, 2) future research recommendations and implications, and 3) study limitations.

Interpretation of Study Results

The research question examined the routine screening recommendation practices among Physician Assistants in this study across four clinical vignette groups. The research hypotheses H₁, H_{1a}, and H_{1b} suggested that the reported routine screening recommendations of Physician Assistants would differ among randomly assigned clinical vignette groups, categorized by the patient's race and socioeconomic status. There were two independent variables with two levels: race, African American and Caucasian and socioeconomic status, high socioeconomic status and low socioeconomic status. The independent variables were divided into two groups, screening recommendation of 17 variables and screening test recommendations of 15 variables. The study results are presented in following sections.

Screening Recommendation Results

The study results revealed that the patient's race influenced differences found in three screening recommendations. There was a statistically significant difference in screening recommendations based on the main effect of race. Differences in screening recommendations for were found for Hypertension (HTN), Obesity and Immunization.

The mean scores of the screening recommendations for Hypertension and Immunizations showed significant differences. The findings suggest that the hypothetical African American female patients, as represented in the clinical vignettes, were less likely to receive screening recommendations for Hypertension, Immunizations when compared to the Caucasian female patients.

Screening for hypertension could aid in preventing the development of chronic medical conditions such as end stage renal failure, stroke, and myocardial infarctions. This is a major risk factor for ethnic minority women, with the incidence rates for hypertension

being higher for African American women than for Caucasian women (Williams, 2008). The study findings support national trends on healthcare disparities with African Americans being less likely to receive screening for hypertension (10%) and immunizations (35%) than Caucasians (National Commission on Prevention Priorities, 2007). The findings for obesity screening were not statistically significant but worth mentioning. Screening recommendations for obesity were inconsistent with previous study findings that suggested provider's perceived it to be less important to screen for obesity for Caucasian patients when compared to African American patients (Baig & Heisler, 2008). The results from this study showed that the African American female patient were less likely to receive screening recommendations for obesity when compared to Caucasian female patient.

Screening Test Recommendation Results

The results of this study found that race and socioeconomic status influenced differences found in four screening recommendation test. The interaction term for race and socioeconomic status had a statistically significant main effect on screening test recommendations for Mammogram, Lipid Panel, Blood Glucose and Thyroid (TSH). After applying the Bonferroni correction, the initial statistical findings proved to be statistically insignificant. Despite these results, the findings are still worth mentioning since they provide an overall insight in screening practices. Differences for screening test recommendations were seen found among the mean scores for the four screening test, Mammogram, Lipid Panel, Blood Glucose and Thyroid (TSH).

The mean scores suggested that the clinical vignette with the African American female patient of lower socioeconomic status was less likely to receive screening test recommendation for Mammogram, when compared to the Caucasian female patient of

higher socioeconomic status, followed by the African American female patient of higher socioeconomic status and Caucasian female patient of lower socioeconomic status, respectively

The mean scores for the screening test recommendations for a Lipid Panel suggested that the clinical vignette of an African American woman from higher socioeconomic status were less likely to receive recommendation for a Lipid Panel when compared to Caucasian woman from low socioeconomic status, African American woman from a low socioeconomic status and Caucasian woman from high socioeconomic status, respectively.

The mean scores for the screening test recommendations for Blood Glucose suggested that the clinical vignette of an African American woman from higher socioeconomic status were less likely to receive recommendation for a Blood Glucose test when compared to Caucasian woman from low socioeconomic status, African American woman from a low socioeconomic status and Caucasian woman from high socioeconomic status, respectively.

The mean scores for the screening test recommendations for a Thyroid (TSH) test suggested that the clinical vignette of an African American woman from higher socioeconomic status were less likely to receive recommendation for a Blood Glucose test when compared to Caucasian woman from low socioeconomic status, African American woman from a low socioeconomic status and Caucasian woman from high socioeconomic status, respectively

Race has been correlated to the quality health care and access to care a patient receives. Moreover, the National Healthcare Disparities Report concludes that overall, African Americans receive poorer quality healthcare and have worse access to care than

Caucasians (National Healthcare Disparities Report, 2013). These findings suggest that race may have a greater influence on screening recommendations than socioeconomic status. In previous studies where socioeconomic status is held constant, race continued to be influential in the delivery of healthcare services (Saha et al., 2008)

The study results for the likelihood of recommending a mammogram screening test supports findings of low rates of early breast cancer detection and disparities found among African American women (Bailey et al., 1997). Other studies suggest that minority and poor patients are less likely to have discussed or receive patient education on screening for colon, breast or prostate cancer when compared to Caucasian patients who have medical visits with the same provider (Bao, Fox, & Escarce, 2007). Cossrow and Falkner (2004) conducted a systematic review of the literature on the prevalence of obesity and associated metabolic disorders such as, diabetes and cardiovascular disease. The study found that obesity and associated disorders had a greater adverse impact on health outcomes on African Americans and Hispanics when compared to Caucasians. The incidence of breast cancer mortality, cardiovascular disease and diabetes is highest for ethnic minorities, making it crucial that members of ethnic minority groups receive adequate preventive screening.

The literature on healthcare disparities suggests that race and socioeconomic status can influence and result in differences in the delivery of services. Studies suggest that a patient's demographic characteristics, specifically those who are African Americans and those of lower socioeconomic status, receive differentiated health care. This differentiated care results in unequal health outcomes (Siminoff, et al., 2006, Weng & Korte, 2012, van Ryn, et al., 2006).

Siminoff et al.(2006) researched found that the race and ethnicity of a breast cancer patient influenced provider communication with a patient. The study used the Roter Interaction Analysis System (RIAS) to examine twelve communication behavior patterns between patients, their family members and physicians and any differences based on race and socioeconomic status. The results suggest that physicians provided more counseling and more patient education was given to patients who were younger than 60, Caucasian, those better educational backgrounds and those who had higher incomes

Weng & Korte (2012) examined whether the recommendations for undergoing surgery were predicted by a patient's race. Using data from the Surveillance, Epidemiology, and End Results (SEER) Limited-Uses Data, RUCC (Rural-Urban Continuum Codes) dataset and SAIPE (Small Area Income & Poverty Estimates) dataset to analyze 17 different geographical cancer registries from 1988-2005. The study found a positive correlation between surgical recommendation and a patient's race and that the odds of not receiving appropriate surgical treatment or treatment recommendations were higher for African American patients as compared to Caucasian patients. These results mirrored findings for patients who resided in a rural area, were of low socioeconomic status and those who were uninsured.

Van Ryn et al (2006) examined whether a physician's perceptions of patients' demographic characteristics influenced treatment recommendations. Data gathered on patients with coronary artery disease who underwent an angiogram procedure in one eighth of New York State hospitals between 1996 and 1998. The treating physician were identified and mailed a self-administered survey focusing on clinical encounter and treatment. The study found that race and gender significantly influenced recommendations for coronary

artery bypass surgery (CABG). The study found that African American male patients were less likely to receive recommendations for coronary artery bypass when compared to African American women and Caucasian men and women. Those with state sponsored insurance or no insurance were also less likely to receive surgical recommendations when compared to those with private insurance (van Ryn et al., 2006).

Research has suggested that race and socioeconomic status can influence the delivery of healthcare services. The results of this study found that race influenced screening recommendations practices for Hypertension, Obesity and Immunizations. The clinical vignettes with African American female patients were less likely to receive screening recommendations when compared to Caucasian female patients. The study also found that race and socioeconomic status influenced screening test recommendations for Mammogram, Lipid Panel, Blood Glucose and Thyroid (TSH). The clinical vignette with an African American female from low socioeconomic status was less likely to receive a Mammogram screening test when compared to the Caucasian female patient from a high or low socioeconomic status and an African American female from a lower socioeconomic status. African American female patients from a high socioeconomic status were less likely to receive screening test recommendations for Lipid Panel, Blood Glucose and TSH when compared to the Caucasian female patient from a low socioeconomic status, African American female patient from a low socioeconomic status and a Caucasian patient from a high socioeconomic status.

This study is the first of its kind to include Physician Assistants as the study participants. Physician Assistants commonly provide preventative healthcare services and are more often the initial provider for such services. This makes them an integral part of the

healthcare system. The hypotheses predicted that there would be differences in routine screening recommendations that were influenced by the patient's race and socioeconomic status. Additionally, this study hypothesized that lower screening recommendation scores would occur in clinical vignettes were the patient was African American or from a lower socioeconomic status. This study explored whether Physician Assistants provided differentiated care to patients based on their demographic characteristics.

From the findings of this study, it can be concluded that race and socioeconomic status continues to be a significant factor in the prevalence of healthcare disparities. More importantly, this study suggests that Physician Assistants may provide differentiated care based on a patient's race and socioeconomic status.

Recommendations for Future Research and Implications

This study provides results of providers' reaction to race preferences. However, this study does not examine possible explanations related to discrimination or biases based on at the level of the patient. We are unsure why minority patients may not adhere to medical treatment plans or why they may have poorer health than non-minorities. Research suggest that this may occur due to lack of trust in the medical profession among certain ethnic groups, lack of access and compliance of the patient, and differences in cultural and personal beliefs when seeking care (Sue & Dhindsa, 2006). Moreover, all of these possible reasons could be based on negative stereotypes of ethnic minorities by creating a stereotype threat.

Stereotype threat and how it affects the trainers and subsequently the training must be examined. Stereotype threat refers to the risk of validating and confirming negative characteristics about a group of people. This occurs when "cues in the environment make

negative stereotypes associated with an individual's group status salient, triggering physiological and psychological processes that have detrimental consequences for behavior" (Burgess, Warren, Phelan, Dovidio, & van Ryn, 2010). Patients feelings of discrimination or biases that are based on stereotype characteristics have been negatively correlated to health outcomes. We know from the literature that the interaction, communication, and relationship a patient has with a provider can influence the health outcomes of the patient. Stereotype threat can affect every aspect of the patient encounter, from what a patient may share with a providers, what a patient understands about their health and even what a patient believes to be true about their health (Aronson, Burgess, Phelan, & Juarez, 2013). To reduce stereotype threat, we must examine possible solutions at the individual and insitutional level that promote equality.

Physician Assistant programs should have their educational curriculum and institutional policies examined for adequate cultural competency training. Institutional policies, such as those set by the Liaison Committee on Medical Education (LCME), have been established to ensure that educational institutions are including cultural competency training and education in the curriculum for all medical education programs. According to the accreditation standard for physician assistant education, B1.06, physician assistant programs are required to quip students with the necessary knowledge and skills to provide medical care to patients from diverse population (Accreditation Standards for Physician Assistant Education, 2012). However, programs are not required to provide evidence using measurable outcomes. Future accreditation standards should include mandatory requirements of measurable outcomes reflecting such competencies.

Interactions among people from diverse backgrounds have been found to be important in transforming knowledge, beliefs, attitudes and perceptions. “Because culture is so complex, so shape-shifting, and so ultimately inseparable from its social and economic context, it is impossible to consider as an isolated or static phenomenon. Thus, attempts to ‘learn’ or ‘teach’ about culture outside of the context of lived reality will inevitably fail”(Colley, 2010). Cultural sensitivity and awareness must start with the provider’s self-reflection of one’s own cultural, family values, prejudices, and biases. Cultural competency has been referred to as a process in which healthcare providers develop skills for respecting and acknowledging differences in diverse populations.

Culture competency has had a major influence in medical training, education and the delivery of quality healthcare (Betancourt, 2006; Dogra, 2001; Marzan et al., 2009; Murray-García & García, 2008; Musolino et al., 2010; Wilkerson, Fung, May, & Elliott, 2010). Perceptions of cultural factors, such as race, help seeking behaviors, language, cultural beliefs, appeared to have most significantly influenced the relationship between the patient and the provider (Wilkerson, et al., 2010). There has been a direct correlation between culturally competent providers and patient satisfaction. Paez et al. (2008) conducted the first study of its kind analyzing the association between a physician cultural competence and the patient rating of the patient-physician relationship. Patients of diverse populations reported higher satisfaction and increased motivation to communicate with provider. The study found that those providers that self-identified as culturally competent, work in clinics that employ a higher percentage of minority staff, provide patient education material for diverse cultures and also offered training in cultural diversity (Paez, Allen, Beach, Carson, & Cooper, 2009; Paez, Allen, Carson, & Cooper, 2008).

Cultural competency training and education suggest promoting the development of skills, knowledge and attitudes that embraces and respects differences in diverse populations. The shift towards a more diverse population provides clear justification for producing a more diverse group of healthcare provider, with the knowledge, attitudes, and skills of all sociocultural factors to individuals involved in building a trusting relationship; the patient and provider.

Programs should consider implementing cultural awareness through diverse modalities. Cultural awareness could be implemented in the curriculum and assessed through workshops, objective structured clinical examinations (OSCE), diverse clinical clerkship. The use of clinical vignettes could be implemented as part of the standard training protocol and an outcome measure device. Clinical vignettes could serve as a measure of quality assurance. Programs should consider creating culturally sensitive formative and summative assessment tools to examine the knowledge, attitude and skills of the students. These findings will allow us to recognize whether we are training and educating culturally competent Physician Assistants to deliver undifferentiated healthcare to the nation's growing diverse population. The results could provide some justification for mandating that Physician Assistants receive continuing medical education on cultural competency and disparities in health and healthcare. Future research should include examining the recommendation outcomes of Physician Assistants who have received cultural competency training and its impact on the prevalence and prevention of disparities in health and healthcare.

The results of this study have implications concerning future research. Future research should look at the impact of demographic characteristics of Physician Assistants on screening recommendations. Future research should include PAs from other states,

expanding the sample population. The study population of PAs in Kentucky did not provide enough adequate data to analyze the impact of demographic characteristic specifically, the impact of the PA's race and ethnic characteristics. Past research suggest that providers from similar backgrounds will have less implicit bias, therefore more likely to provide equal care across all patients.

Study Limitations and Recommendations for Improvement

There were several limitations that may have affected the results of the MANOVA. The group cell sizes were unequal, violating a requirement for the MANOVA. There were fewer participants assigned to the clinical vignette groups of the African American woman of low socioeconomic status ($n=25$) and the African American woman of high socioeconomic status ($n=28$) when compared to the vignette groups of the Caucasian woman of lower socioeconomic status ($n=29$) and the Caucasian woman of high socioeconomic status ($n = 30$). To avoid this initially, the participants were randomly assigned to clinical vignette groups, however, the total number of participants taking the study were not equal.

In this study, the interaction term of race and socioeconomic status was the variable of interest, however, statistically significant differences were found for the independent variable of race across the dependent variables of screening recommendations. The unequal sample sizes in each cell and the number of dependent variables decrease the power of the chosen statistical test, therefore, not revealing true statistically significant differences. Increasing the number of study participants will likely reduce this problem. Additionally, calculating a stronger grouping of variables for analysis of variance will decrease the

number of dependent variables. This can be done by examining multicollinearity among the dependent variables; providing information on the intercorrelation of the dependent variables. Dependent variables that are highly intercorrelated, having a coefficient of 0.7 or higher, should be combined into a single factor for analysis. Combining the variables will decrease the standard error therefore decreasing the incidence of Type II error. Future studies should limit the number of dependent variables.

The clinical vignette included only one female patient, who was either African American/Caucasian and from a low or high socioeconomic status. The study used a pictorial representation of a female patient. The picture was identical except for modifications to the skin color of the patient. The skin color of the patient was modified to represent African American or Caucasian. Jewelry and clothing items were absent from the picture to remove any visual effects of different socioeconomic statuses. The clinical vignette was presented in the same format across all four clinical vignette groups, controlling for differences in the clinical presentation. By decreasing the variations among vignette, the data can only provide specific generalizations. Health and healthcare disparities occur among all genders, races and socioeconomic statuses.

In the clinical vignette, socioeconomic status is represented by employment status and education level. Future research should consider giving socioeconomic status an aesthetic property in the vignette. Appearance can negotiate first impressions however; several variables should be included and measured independently to examine how they may contribute to the study outcomes (American Psychological Association, 2007). Socioeconomic status can be defined in many ways however, that meaning may not be equivalent across groups of those studied. Subset analysis within in groups will provide

better results. Future studies should include diverse clinical vignettes that vary in a patient's demographic characteristics.

The clinical vignette created covered a clinical visit for preventative health maintenance. Physician Assistants are generalist, however, the demographic questionnaire provided data to show that PAs practice in a variety of medical specialties. Future studies should include clinical vignettes of clinical presentations that are specifically tailored to the different medical specialties.

The method used to deliver the survey instrument has external validity limitations. This study is delimited to study participants who are 1) nationally certified Physician Assistants practicing in the state of Kentucky. Physician Assistants that have not taken and passed their national board certification exam are excluded as participants in this study. The results from the proposed study are generalizable only to certified Physician Assistants in the state of Kentucky. The random sample of participants could expand to several other states, improving generalizability. Internet-based data collection has limitations, specifically those associated with technology failure and accessibility. Email accessibility and restrictions can be challenging. The study participants cannot ask for clarity or explanations of any questions. It is possible that a representative sample of the target population will not have the opportunity to take the survey due to internet resources or lack of the necessary skills to navigate through the technology. Multiple modalities of delivery could improve response rates and study results.

Conclusion

Despite programs and policies established to support innovations for providing undifferentiated healthcare, disparities still exist. There have been no studies to date that evaluate the delivery of healthcare services by Physician Assistants. This study fills gaps in the literature on the role that Physician Assistants have in the prevalence of healthcare disparities. This study illustrates the possible ways in which Physician Assistants may contribute to the prevalence of health and healthcare disparities. Patient characteristics of race and socioeconomic status contributed to differentiated screening recommendation practices among Physician Assistants. Possible solutions to addressing healthcare disparities may begin with incorporating cultural competency in medical education and clinical training of Physician Assistants. By doing so, results in a more culturally sensitive and responsive provider that is better equipped to care for the needs of this nation's growing diverse population. Huckabee & Matkin (2012) states that "A 6-year analysis of the National Ambulatory Medical Care Survey data revealed that patients were more likely to visit a PA in rural areas than urban areas, and nonwhite patients were more likely to visit PAs than were white patients". This suggest that PAs will likely encounter patients from diverse backgrounds and therefore, cultural competency training and education is essential in preventing disparities. Providing educational context around culture coupled with increased exposure to diverse patient populations allows providers to address their own biases and stereotypes and cultural awareness. The study provides insight into possible prevention strategies and future studies implications on health and healthcare disparities.

APPENDICES

Appendix A: Operational Definitions of Variables

Appendix B: Institutional Review Board Application (will provide)

Appendix C: Survey Cover Letter

Survey Instrument

Appendix D: Cover Letter to Expert Panel

Abstract to Expert Panel

Expert Panel Survey Instrument

Curriculum Vitae of Expert Panel

Vita

Appendix A
Operational Definitions of Variables

Variables	Coding	Data	Analysis
Patient Race	Race= X₁, Coded African American=1 Caucasian=2	Two levels categorical nominal	Descriptive <i>M/SD/f</i>
Patient Socioeconomic Status	Socioeconomic Status= X₂ Coded High school= 1 Doctorate degree=2	Two levels categorical nominal	Descriptive <i>M/SD/f</i>
Physician Assistant Characteristics	Gender= Male (1) Female (2) Race/Ethnicity African-American/Black) (1) Hispanic/Latino (2) White, non-Hispanic, (3) American Indian or Alaskan Native (4) Asian, Pacific Islander or Indian subcontinent (5) Race/Ethnicity not listed, please specify (6)	Descriptive Categorical Nominal	Descriptive <i>M/SD/f</i>

Appendix A (Continued)

Operational Definitions of Variables

Variables	Coding	Data	Analysis
	<p>Age 20-29 (1) 30-39 (2) 40- 49 (3) 50-59 (4) >60 (5)</p> <p>Years in practice < 5 (0) 5-9 (1) 10-14 (2) 15-19 (3) 20 or more (4)</p> <p style="text-align: center;">Medical Practice specialty</p> <p>General Medicine Emergency Medicine (1) Family Practice (2) Pediatrics (11) Internal Medicine (5) Obstetrics/Gynecology(7)</p> <p>Specialty/Subspecialty General Surgery (Curet, Schermer, Demarest, Bieneik, & Curet)) Hematology/Oncology (4) Otorhinolaryngology (8) Ophthalmology (9) Orthopedic/Surgery (10) Neurology/Neurosurgery (6) Plastic Surgery (12) Urology (13)</p> <p>Primary Practice Environment Hospital based (0) Individual practice (1) Small group practice (5 or fewer physicians) (2) Large group practice (6 or more physicians) (3) Other (4)</p> <p>Practice location Urban (1) Suburban (2) Rural (3)</p>	<p>Descriptive</p> <p>Categorical</p> <p>Nominal</p>	<p>Descriptive</p> <p><i>M/SD/f</i></p>

Appendix A (Continued)

Operational Definitions of Variables

Variables	Questions	Coding	Data/Scale	Analysis
Physician Assistant recomme ndation behaviors	When obtaining a medical history on this patient, how likely are you to include the screening practices below?	Dental Health Hypertension Disease Lipid Disorder Alcohol or Drug Use Breast Cancer Tobacco Use Diabetes Mellitus Pre Conception Counseling Sexual Health/ Behavior Sedentary Lifestyle Intimate Partner Violence Diet/Exercise Obesity Depression Cancer Prevention Immunization History Firearm Safety	Attitudinal Continuous Ordinal data 1=Very Unlikely 2=Unlikely 3= Likely 4= Very Likely	MANOVA
	When obtaining a medical history on this patient, how likely are you to include the screening tests/procedures below?	Blood Pressure Reading Mammogram Cervical Cancer/Pap Smear Comprehensive Blood Count Lipid Panel Thyroid Stimulating Hormone Glucose Levels Stool Guaiac Colonoscopy Liver Function Panel (blood) Renal Function Panel (urine and blood) HIV-Western Blot Tuberculosis Iron Levels Folate/B12 Levels	Attitudinal Continuous Ordinal 1=Very Unlikely, 2= Unlikely, 3= Likely 4= Very Likely	MANOVA

Appendix A (Continued)

Operational Definitions of Variables

Variables	Questions	Coding	Scale	Analysis
Knowledge of routine screening recommendations	Many items from the list below can be included in a routine screening exam for a woman between 25- 35 years of age. For the items listed, please choose those you feel must be recommended, could be recommended or should not be recommended.	Dental Health Hypertension Disease Lipid Disorder Alcohol or Drug Use Breast Cancer Tobacco Use Diabetes Mellitus Pre Conception /Counseling Sexual Health/ Behavior Sedentary Lifestyle Intimate Partner Violence Diet/Exercise Obesity Depression Cancer Prevention Immunization History Firearm Safety	Attitudinal scale Continuous Ordinal data 1= Should not recommend 2= Could recommend 3=Must recommend 0= Unsure	MANOVA
	Many items from the list below can be included in a routine screening exam for a woman between 25- 35 years of age. For the items listed, please choose those you feel must be recommended, could be recommended or should not be recommended.	Blood Pressure Reading Mammogram Cervical Cancer/Pap Smear Comprehensive Blood Count Lipid Panel Thyroid Stimulating Hormone Glucose Levels Stool Guaic Colonoscopy Liver Function Panel (blood) Renal Function Panel (urine and blood) HIV-Western Blot Tuberculosis Iron Levels Folate/B12 Levels	Attitudinal Continuous Ordinal data 1= Should not recommend 2= Could recommend 3=Must recommend 0= Unsure	

Appendix B
Institutional Review Board Application



Office of Research Integrity
 IRB, IACUC, RDRC
 315 Kinkead Hall
 Lexington, KY 40506-0057
 859 257-9428
 fax 859 257-8995
 www.research.uky.edu/ori/

Initial Review

Approval Ends
 February 12, 2014

IRB Number
 13-0013-P4S

TO: DeShana Collett, MSPAS,PA-C
 Clinical Sciences/PA Program
 205C Wethington Bldg 0200
 PI phone #: (859) 218-0845

FROM: Chairperson/Vice Chairperson
 Non-medical Institutional Review Board (IRB)

SUBJECT: Approval of Protocol Number 13-0013-P4S

DATE: February 14, 2013

On February 13, 2013, the Non-medical Institutional Review Board approved your protocol entitled:

The Influence of Race and Socioeconomic Status on Routine Screening Practices of Physician Assistants

Approval is effective from February 13, 2013 until February 12, 2014 and extends to any consent/assent form, cover letter, and/or phone script. If applicable, attached is the IRB approved consent/assent document(s) to be used when enrolling subjects. **[Note, subjects can only be enrolled using consent/assent forms which have a valid "IRB Approval" stamp unless special waiver has been obtained from the IRB.]** Prior to the end of this period, you will be sent a Continuation Review Report Form which must be completed and returned to the Office of Research Integrity so that the protocol can be reviewed and approved for the next period.

In implementing the research activities, you are responsible for complying with IRB decisions, conditions and requirements. The research procedures should be implemented as approved in the IRB protocol. It is the principal investigators responsibility to ensure any changes planned for the research are submitted for review and approval by the IRB prior to implementation. Protocol changes made without prior IRB approval to eliminate apparent hazards to the subject(s) should be reported in writing immediately to the IRB. Furthermore, discontinuing a study or completion of a study is considered a change in the protocol's status and therefore the IRB should be promptly notified in writing.

For information describing investigator responsibilities after obtaining IRB approval, download and read the document "PI Guidance to Responsibilities, Qualifications, Records and Documentation of Human Subjects Research" from the Office of Research Integrity's Guidance and Policy Documents web page [<http://www.research.uky.edu/ori/human/guidance.htm#PIresp>]. Additional information regarding IRB review, federal regulations, and institutional policies may be found through ORI's web site [<http://www.research.uky.edu/ori>]. If you have questions, need additional information, or would like a paper copy of the above mentioned document, contact the Office of Research Integrity at (859) 257-9428.

Chairperson/Vice Chairperson



Appendix C
Survey Content
Survey Cover Letter
Survey Instrument

Dear Physician Assistant,

I am a Physician Assistant and doctoral student conducting a study on how Physician Assistants in the Commonwealth of Kentucky visualize and perform initial patient assessments. The study is described in the following paragraphs and is being done as a part of my dissertation requirements at the University of Kentucky.

Purpose: This study is being conducted to examine routine screening practices of practicing Physician Assistants. You are invited to take part in a study because you are a practicing Physician Assistants in Kentucky. The aims of this study are to explore Physician Assistants attitudes and practice behaviors toward routine preventative screening recommendations. There is no right or wrong answers; the study is interested in your opinions. Your participation is voluntary.

Procedures: It will take you approximately 10-15 minutes to complete the survey consisting of reading a clinical vignette followed by questions about your attitudes and practice behaviors toward routine preventative screening recommendations and demographic questions.

Risks and Benefits: There are no anticipated risks associated with participation in this study. There will be no penalty should you choose not to participate in this study. You are free to exit the survey at any time for any reason by closing the survey window. There are no anticipated direct benefits to you for your participation in this study. The overall benefits of this study include providing the researcher with a better understanding of how Physician Assistants perceive healthcare delivery. This information will provide information that may be applicable to future health policy standards of care for clinical practices.

Costs: There is no cost to participate in this study. The survey will take 10 – 15 minutes to complete.

Compensation: For participating and completing this study, you have the option to enter in a random drawing to receive a \$10 Amazon e-Gift Card. The odds of winning from the drawing are 1 in 14. The random drawing will occur at the conclusion of the study. Winners will be notified by email. All identifiable information will be kept confidential and deleted at the conclusion of the study.

Confidentiality: This survey is anonymous and confidential; however, complete anonymity over the internet cannot be guaranteed. Deletion of the survey address from your browser window will increase the probability for maintaining confidentiality. Neither identifiable information nor IP addresses will be collected. Any publications or presentations of the research results will not disclose individual information, as they are not collected. Data generated by the study may be reviewed by the University of Kentucky Institutional Review Board and the members of the researcher's dissertation committee.

Standard Disclosure regarding the use of an online survey company. *“Please be aware, while we make every effort to safeguard your data once received from the online survey/data gathering company, given the nature of online surveys, as with anything involving the Internet, we can never guarantee the confidentiality of the data while still on the survey/data gathering company's servers, or while en route to either them or us. It is also possible the raw data collected for research purposes may be used for marketing or reporting purposes by the survey/data gathering company after the research is concluded, depending on the company's Terms of Service and Privacy policies.”*

If you have any questions concerning your rights as a research participant, you may contact the University Of Kentucky Office Of Research Integrity at 859-257-9428, toll free number: 866-400-9428

By beginning the survey, you are confirming that you are at least 18 years of age or older. By entering the survey, you are consenting to participate in the survey and are giving permission for the data to be used in research.

If you have any questions about the study, please feel free to contact the researcher at the telephone number or email listed below.

Click here to enter the study:

Follow this link to the Survey:

[Take the Survey](#)

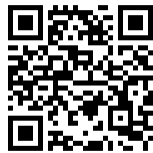
Or copy and paste the URL below into your internet browser:

https://uky.qualtrics.com/WRQualtricsSurveyEngine/?Q_SS=9WTLFRRmmSm7V9r_24azGAh4qZ_ZbcyM&_=1

Follow the link to opt out of future emails:

[Click here to unsubscribe](#)

For Smart Phones: you may also use the QR Code for easy access:



Thank you for your participation,
DeShana Collett, MSPAS, PA-C
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University of Kentucky
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Fax: (859)-257-2454

Faculty Advisors:

Judy J. Jackson, Educational Policy and Procedure
Kenneth Tyler, Educational, School and Counseling Psychology

Physician Assistant Routine Screening Practices Survey

This survey will provide information concerning routine screening practices among Physician Assistants in Kentucky. All information provided will remain confidential. You are consenting to taking the survey if you proceeding beyond this introduction. Thank you for taking the time to participate in this 10-15 minute survey.

DeShana Collett, MSPAS, PA-C

Doctoral Candidate Educational Policy & Procedure in Higher Education

University of Kentucky

dcolletpac@uky.edu

Q1. The next section of the survey will consist of a clinical vignette followed by several questions related to routine screening practices

Ms. M is a 32-year old woman who is coming in today to establish care with your practice. She does not routinely see a provider and mostly seeks treatment when she gets sick during the winter. She brings up no concerns today except for having occasional mild tension headaches relieved with OTC analgesics. She denies any change in her symptoms. The patient denies any fevers, chills, photophobia, neck rigidity, nausea, vomiting.

The patient reports that she is adopted and is unaware of any information concerning her family history. Her self-reported social history indicates that she is currently employed as a waitress. Her highest level of education attained was a high school diploma. Her physical examination is unremarkable. A Pap smear was completed today. She was also given a refill on her birth control pills.



Ms. M is a Caucasian 32-year old woman who is coming in today to establish care with your practice. She does not routinely see a provider and mostly seeks treatment when she gets sick during the winter. She brings up no concerns today except for having occasional mild tension headaches relieved with OTC analgesics. She denies any change in her symptoms. The patient denies any fevers, chills, photophobia, neck rigidity, nausea, vomiting.

The patient reports that she is adopted and is unaware of any information concerning her family history. Her self-reported social history indicates that she is currently employed as a lawyer. Her highest level of education attained was a white doctorate degree. Her physical examination is unremarkable. A Pap smear was completed today. She was also given a refill on her birth control pills.



Ms. M is a $\{e://Field/African%20American\}$ 32-year old woman who is coming in today to establish care with your practice. She does not routinely see a provider and mostly seeks treatment when she gets sick during the winter. She brings up no concerns today except for having occasional mild tension headaches relieved with OTC analgesics. She denies any change in her symptoms. The patient denies any fevers, chills, photophobia, neck rigidity, nausea, vomiting.

The patient reports that she is adopted and is unaware of any information concerning her family history. Her self-reported social history indicates that she is currently employed as a lawyer. Her highest level of education attained was a $\{e://Field/black%20doctorate%20degree\}$ doctorate degree. Her physical examination is unremarkable. A Pap smear was completed today. She was also given a refill on her birth control pills.



Ms. M is a $\{e://Field/Caucasian\}$ 32-year old woman who is coming in today to establish care with your practice. She does not routinely see a provider and mostly seeks treatment when she gets sick during the winter. She brings up no concerns today except for having occasional mild tension headaches relieved with OTC analgesics. She denies any change in her symptoms. The patient denies any fevers, chills, photophobia, neck rigidity, nausea, vomiting.

The patient reports that she is adopted and is unaware of any information concerning her family history. Her self-reported social history indicates that she is currently employed as a waitress. Her highest level of education attained was a $\{e://Field/white\%20high\%20school\}$ high school. Her physical examination is unremarkable. A Pap smear was completed today. She was also given a refill on her birth control pills.



The next set of questions pertain to the patient in the clinical vignette.

When obtaining a medical history on this patient, how likely are you to include the screening practices below?

	Very Unlikely (1)	Unlikely (2)	Likely (3)	Very Likely (4)
Dental Health (1)				
Hypertension (2)				
Lipid Disorder (3)				
Alcohol/Drug Use (4)				
Breast Cancer (5)				
Tobacco Dependency/Abuse (6)				
Diabetes Mellitus (7)				
Pre-Conception Counseling (8)				
Sexual Health/Behavior (9)				
Sedentary Lifestyle (10)				
Intimate Partner Violence (11)				
Diet/Exercise (12)				
Obesity (13)				
Depression (14)				
Cancer Prevention (15)				
Immunization History (16)				
Firearm Safety (17)				

When obtaining a medical history on this patient, how likely are you to include the screening tests/procedures below?

	Very Unlikely (1)	Unlikely (2)	Likely (3)	Very Likely (4)
Blood Pressure Reading (1)				
Mammogram (2)				
Cervical Cancer/Pap Smear (3)				
Comprehensive Blood Count (4)				
Lipid Panel (5)				
Thyroid Stimulating Hormone (6)				
Blood Glucose Levels (7)				
Stool Guaiac (8)				
Colonoscopy (9)				
Liver Function Panel (10)				
Renal Function Panel (11)				
HIV Screening Test (12)				
Tuberculosis (13)				
Iron Level (14)				
Folate/B12 Levels (15)				

The next set of questions are pertaining to your overall knowledge of preventative screening guidelines

Many items from the list below can be included in a routine screening exam for a woman between 25- 35 years of age. For the items listed, please choose those you feel should not be recommended, could be recommended or must be recommended.

	Should not recommend (1)	Could recommend (2)	Must recommend (3)	Unsure (0)
Dental Health (1)				
Hypertension (2)				
Lipid Disorder (3)				
Alcohol/Drug Use (4)				
Breast Cancer (5)				
Tobacco Dependency/Abuse (6)				
Diabetes Mellitus (7)				
Pre-Conception Counseling (8)				
Sexual Health/Behavior (9)				
Sedentary Lifestyle (10)				
Intimate Partner Violence (11)				
Diet/Exercise (12)				
Obesity (13)				
Depression (14)				
Cancer Prevention (15)				
Immunization History (16)				
Firearm Safety (17)				

Many items from the list below can be included in a routine screening exam for a woman between 25- 35 years of age. For the items listed, please choose those you feel should not be recommended, could be recommended or must be recommended.

	Should not recommend (1)	Could recommend (2)	Must recommend (3)	Unsure (0)
Blood Pressure reading (1)				
Mammogram (2)				
Cervical Cancer/Pap Smear (3)				
Comprehensive Blood Count (4)				
Lipid Panel (5)				
Thyroid Stimulating Hormone (6)				
Blood Glucose Levels (7)				
Stool Guaiac (8)				
Colonoscopy (9)				
Liver Function Panel (10)				
Renal Function Panel (11)				
HIV screening test (12)				
Tuberculosis (13)				
Iron Level (14)				
Folate/B12 levels (15)				

The next several questions pertain to your demographic information.

What is your gender?

Male (1)

Female (2)

Which of the following best describes your racial/ethnic group?

African-American/Black (not of Hispanic origin) (1)

Hispanic/Latino (Spanish culture or origin regardless of race) (2)

White, non-Hispanic, originating in Europe, North Africa or Middle East (3)

American Indian or Alaskan Native (4)

Asian, Pacific Islander or Indian subcontinent (5)

Race/Ethnicity not listed, please specify (6) _____

In the age range provided, please choose the one that contains your current age?

20-29 (1)

30-39 (2)

40-49 (3)

50-59 (4)

60 or greater (5)

How many years have you been practicing medicine in this community?

< 5 (0)

5-9 (1)

10-14 (2)

15-19 (3)

20 or more (4)

What is your medical specialty?

Emergency Medicine (1)

Family Practice (2)

General Surgery (3)

Hematology/Oncology (4)

Internal Medicine (5)

Neurology/Neurosurgery (6)

Obstetrics/Gynecology (7)

Otorhinolaryngology (8)

Ophthalmology (9)
Orthopedic/Surgery (10)
Pediatrics (11)
Plastic Surgery (12)
Urology (13)
Other(14)_____

Primary Practice Type

Hospital based (0)
Solo practice (1)
Small group practice (5 or fewer physicians) (2)
Large group practice (6 or more physicians) (3)
Other (4) _____

Please enter in the zip code for the location of your primary practice. If you have multiply practice location, please enter the zip code for the location you considered as your primary practice. (5 digit zip code)

Practice Location

Urban (1)
Suburban (2)
Rural (3)

Thank you for completing the survey. As a way of thanking you for your participation, you can agree to be randomly selected to receive \$ 10 Visa Gift Card. Do you wish to participate in a drawing to receive a \$10 Visa Gift card?

Yes (1)
No (2)

If No Is Selected, Then Skip to End of Survey

Please provide the information below so you can be included in a drawing for the \$10 Visa Gift Card. This information will not be associated with your answers provided in the survey.

First Name (1)

Last Name (2)

Email address (3)

Appendix D.

Expert Panel Content

Abstract to Expert Panel

Curriculum Vitae

David Fahringer, MSPH, PA-C

Phyllis Nash, PhD

John F. Wilson, PhD

Gerry Gairola, PhD

Greetings,

As you are aware, I am a Doctoral candidate in Educational Policy and Procedure at the University of Kentucky conducting dissertation research on Physician Assistants routine screening recommendations for a preventative health exam. I am writing to invite you as an expert panel reviewer. I have identified a panel of experts in the field medical education and medical research to help validate the survey instrument.

The purposes of this study are to 1) identify disparities in routine screening practices of Physician Assistants and 2) determine if such differences are associated with the patients' race and socioeconomic status.

I am attaching an abstract of the dissertation for your review prior to accepting this invitation. The survey instrument consist of six questions followed by response items and seven demographic question sets. A text format of the online survey tool is also attached. Instructions and procedures for conducting the review are included in the online survey. Your feedback is using an online assessment tool. IRB approval will be submitted following the completion of a revised survey instrument.

If you would like to accept this invitation, an electronic link to the survey instrument is provided. It is included below with the password.

https://uky.qualtrics.com/SE/?SID=SV_dahKFYnvvGdNtOJ

Password: Reviewer

I would like to have the completed reviews by Wednesday, November 21, 2012. If you have any questions or concerns, please contact me by cell phone at 859-492-6743.

Again, I want to thank you for taking the time to consider serving as an expert panel reviewer.

Sincerely,

DeShana Collett

DeShana Collett, MSPAS, PA-C

DeShana Collett, MSPAS, PA-C
Assistant Professor
Director of Admissions and Recruitment
Doctoral Candidate in Educational Policy
University of Kentucky, College of Health Sciences
Division of Physician Assistant Studies
900 S Limestone, CTW Bldg. Room 205c
Lexington, KY 40536-0200
Phone: (859) 218-0845
Fax: (859)-257-2454

Abstract

The existence of health disparities confirms that not all patients, regardless of differences in patient demographics such as race, sex or socioeconomic status are provided quality healthcare (Agency for Healthcare Research and Quality,2002). Moreover, research suggests that health disparities may occur due to the inadequate delivery of medical services (Haist, Wilson, Lineberry, & Griffith, 2007; van Ryn, Burgess, Malat, & Griffin, 2006). The differences in the delivery of care and services to ethnic minorities and those of low socioeconomic status warrants examining the role healthcare provider's play in the causation of these health disparities (Aberegg & Terry, 2004; Smedley, Stith, & Nelson, 2003a). The differences in the delivery of medical services can result in different healthcare outcomes and, therefore, a health disparity. Some healthcare disparities can be attributed to inadequacies in patient communication, shared decision-making between the patient and provider, and insufficient training of the healthcare provider (Green et al., 2007; Peek et al., 2010; Rathore et al., 2000; van Ryn et al., 2006; van Ryn & Burke, 2000).

However, few studies to date have evaluated the routine screening practices delivered by healthcare practitioners, such as Physician Assistants (PAs) as a possible source of healthcare disparities reported amongst racial/ethnic minorities. Physician Assistants play a pivotal role in the delivery of services. For that reason, PAs cannot be ignored nor disregarded when examining the causes of healthcare disparities in patients of lower socioeconomic minority status. The possibility that a patient's race and socioeconomic status may influence the delivery of services by Physician Assistants must be examined.

The Vitas for the expert panel have been modified to include only the following:

- Contact Information,
- Education and Professional Background,
- Honors/Awards,
- Publications and Grant Activity.

CURRICULUM VITAE

I. GENERAL INFORMATION

Name: David Fahringer, MSPH, PA-C
E-mail: dafahr1@yahoo.com

II. EDUCATION

Mt. Vernon Nazarene College
Mt. Vernon, Ohio Degree: AA, 1973

Southern Nazarene University
Bethany, Oklahoma Degree: BA, 1975

Research Medical Center
Kansas City, Missouri Radiology Technologist, 1977

University of Kentucky
College of Allied Health Degree: BS, 1988
Major: Physician Assistant
In Health Science

University of Kentucky
College of Medicine Degree: MSPH 1992
Major: Public Health

University of Kentucky
College of Public Health Degree: Dr. PH 2001- 2008 comp/ABD
Certificate in Gerontology Major: Public Health with emphasis in Gerontology

III. PROFESSIONAL EXPERIENCES

George Washington University
Department of Emergency Medicine
Medical Associate Faculty
Prince Sultan Military College of Health Sciences; Dhahran
Assistant Physician Department Head & Program Director
July 2010 – July 2012

WORKING SITE:

Prince Sultan Military College of Health Sciences
P.O. Box 946, Dhahran 31932, K.S.A.
Phone: (+966.3)840.5487/840.5455
Fax: (+966.3).8405577
www.psmchs.edu.sa

Associate Professor
University of Kentucky
Physician Assistant Studies Program

1994 – 2010 (2 year leave of absence until 2012), Sept. 2012 – current
“Acting” Division Director for Physician Assistant (6/2001 – 10/2003)
Director of Admission 2004-2010 (on sabbatical leave 2010-2012)

Radiologic Technologist - Staff Position
St. Joseph East Hospital
Lexington, KY.
August 1986 - 2010

Radiology Administrator
Department of Radiology/School of Radiology
Raleigh Fitkin Memorial Hospital
Manzini, Swaziland
Africa
1979 - 1986

Junior Supervisor, Department of Radiology
Research Medical Center
Kansas City, Missouri
1979

IV. ACADEMIC APPOINTMENTS

Associate Professor
Special Title Series
University of Kentucky
Physician Assistant Studies Program
1994 – current

Prince Sultan Military College of Health Sciences
Assistant Physician Department Head and Program Director; Saudi Arabia
Associate Professor
2010 - 2012

V. HOSPITAL OR CLINICAL APPOINTMENTS

Internal Medicine-GI	1999-2000	Hepatology Clinic
Preventive Medicine	1988-94	Senior Physician Assistant, Occupational Medicine Director of Clinical Services
Occupational Medicine	1988-94	Department of Preventive Medicine University of Kentucky College of Medicine Lexington, Ky. 405036-0284

XII. HONORS/SCHOLARSHIPS

Maurice A. Clay 1988 - Outstanding graduating senior in the College of Allied Health Professions of the University of Kentucky

Dean's Award for Excellence in Service 1988 - University of Kentucky

Physician Assistant National Student Scholarship 1988

Academic Excellence Scholarship, Spring-2001- University of Kentucky

XV. RESEARCH AND/OR CREATIVE PRODUCTIVITY

Publications:

International

Gairola, Gerry, Ph.D., Fahringer, D., “Physician Assistants in the United States” CAIPE – Bulletin (United Kingdom Centre for the Advancement of Interprofessional Education), No. 16: Spring, 1999.

Fahringer, D., Pike, S., Jolley, D., “Is the American Physician Assistant (PA) Model a Good Fit in the NHS?” Health Service Journal (England), accepted 9-06

Jolley, D., Benbow, S., Fahringer, D., & Pike, S., “Medical Care Practitioners: what will they have to off Old Age Psychiatry?” Newsletter of the Faculty of Psychiatry of Old Age, Royal College of Psychiatrists, Winter, No. 44, 2006.

Geza Bruckner, Ph.D, Janice Kuperstein, PhD, PT, MEd, David Fahringer, PA-C, MSPH, and William Elder, PhD, “Integrating complementary and alternative medicine into a health science curriculum”, International Journal on Disability and Human Development, Dev 8(2): 159-161, 2009

Publications:

National

Fahringer, D., Jennings, P., Pomeroy, C. “An Old Familiar Tune of the Ohio River Valley – Histoplasmosis”. JAAPA, Vol. 12, No. 9, 1999.

Jennings, P., Fahringer, D., Collins, Terrence; “Indoor Air Quality and the Role It Plays in Our Patients’ Overall Health. JAAPA, Vol. 13, No. 8, 2000.

Rainier, D., Stein, G., (authors), Connor, D., Davis, J., Fahringer, D., and other Reviewers; HIV Curriculum for Physician Assistants, 2nd Edition, National Aids Education & Training Centers Program, 1997.

Skaff, K., Rapp, D., Fahringer, D., “Assessment of Physician Assistants Admission Outcomes: Pre-PA through post-graduation”, Perspective on Physician Assistant Education, Vol. 9, No. 2. Spring, 1998.

Fahringer, D., Huff, B., “The Development and Use of Case Scenarios in Interdisciplinary and Community Health Education”, Journal of Allied Health, submitted, 1998.

Fahringer, D., Assell, R., Harrington, N., Maschio, G., and Stone, L.; “Integrating service-Learning as a Course into a University Curriculum”, Perspective on Physician Assistant Education, Vol. 11, No.3 Summer/Autumn 2000.

Schulman, E., Fahringer, D., "Systemic Practicum Evaluation for Program Improvement", Perspective on Physician Assistant Education, Vol. 10, No. 6, Autumn 2000.

Skaff, K., Toumey, C., Rapp, D., and Fahringer, D., "Defining and Measuring The Compassionate Qualities of Physician Assistants", Journal of the American Academy of Physician Assistants, Vol. 16, No.1, January 2003

Pike, S., Fahringer, D., "A PA Student's Prospective on Diabetes 'A Very Valuable Lesson Learned'", Perspective on Physician Assistant Education, final draft for submission.

Fahringer, D., "Does Study Abroad Have Educational Value? The University of Kentucky's Experience", Journal of Physician Assistant Education, Vol. 17 No.4 2007.

Publications: National

Kuilman, L.; Fahringer, D., Webber J.; and Begg, P.; "The Physician Assistant: 'Observations of the International Academy for Physician Associate Education', Journal of Health, submitted Nov. 2009.

Snyder, J., Lucich, J., Zorn, J., Enking, P., Barnett, J., and Fahringer, D.; "Clinical Coordinator and the Experiential Year in Physician Assistant Education", Journal of Physician Assistant Education, Vol. 21 No.4, 2010

Research:

Title: "Assessment of Clinical Coordinator's Burnout: Why is there a high turnover in this area of clinical Education?" Fahringer, D., Julie, K, Amon, Laura, Sekhon, Linda
Submitted: APAP research in-kind
Status: Not funded, 1998-1999

Title: "An Interactive Outcome(s) Model to Assess Physician Assistants Performance: A Report of a Case Study of the Graduating Class of 1994, Research Group on Admission Outcomes, Paper present at AAPA (May 1997). Fahringer, D., Rapp, D., Skaff, K.
Submitted: Not-funded
Status: 1995-97, (startup research which led to a funded project)

Title: "Documenting Educational Outcomes in Physician Assistant Practice": Phase II Collaboration with Nova Southeast University, University of Utah, and Interservice (DoD) PA Program with the military. Skaff, K., Rapp, D., Fahringer, D.,
Submitted: APAP
Status: Funded through APAP Research Foundation; \$ 5,000.00 –Funded (1998) Finished Phase II, results of this research project has led us to the next level, measuring compassion.

Title: "The University of Kentucky Project: PA-Connect": This dissemination project will expand the educational assessment reforms initiated at the University of Kentucky using Physician Assistant Studies as a model for other health professions' programs. Skaff, K., Rapp, D., Fahringer, D.
Submitted: FIPSE
Status: Not Funded, \$ 499,959.00, 1998

Title: Rural Health Interdisciplinary Training Grant; Mr. David Fahringer served as a Advisory Board Member and Clinical Coordinator for the Physician Assistant Students;

Submitted: U.S. Department of Health and Human Services – Bureau of Health Professions

Status: Funded: 1994-96, total direct costs, \$775,236.00

Title: “Improving the Health of Women and Children Through a Multi-Disciplinary Service Learning System”. Mr. David Fahringer served on the Advisory Committee for the Project, Pew Grant Planning Committee, and Service Learning Coordinator for the College of Allied Health.

Grant Activity – continue:

Submitted: Health Professions Schools in Service to the Nation Program, Funded by the Pew Charitable Trusts, The National Fund for Medical Education, The National Corporation for Community Service, & the Bureau for health Professions.

Status: Funded: 1995-98, Total direct costs, \$70,000.00

Title: “Aids Education and Training Center”. Mr. David Fahringer served as a consultant and Physician Assistant representative for the Great Lakes Tennessee Valley. This includes the states Michigan, Ohio, Kentucky, and Tennessee.

Submitted: Health Resources Services Administration –Ryan White Care Act Title IV

Status: Funded: 1995-97, \$80,000.00

Title: Rural Health Interdisciplinary Training Grant; Mr. David Fahringer served as a Advisory Board Member and Clinical Coordinator for the Physician Assistant Students;

Submitted: U.S. Department of Health and Human Services – Bureau of Health Professions

Status: Funded: 1997-99, total direct costs, \$614,239.00

Title: HIV Training Grant; Mr. David Fahringer served as the Clinical Coordinator for the Physician Assistant Students;

Submitted: U.S. Department of Health and Human Services – Bureau of Health Professions

Status: Funded: 1997-2000, Total direct costs, \$203,000.00

Title: “The University of Kentucky Project: PA-Connect” (1998-2001)

Submitted: FIPSE

Status: Not Funded: 1997.

Title: “Improving the Health of Women and Children Through a Multidisciplinary Service Learning System”

Submitted: “Innovations in Health Care: The AAPA-Pfizer Recognition Program

Status: Not Funded: 1997, \$5000.00 time \$5000.00

Grant Activity – continue:

Title: "Aids Education and Training Center". Mr. David Fahringer served as a consultant and Physician Assistant representative for the Great Lakes Tennessee Valley. This includes the states Michigan, Ohio, Kentucky, and Tennessee.

Submitted: Health Resources Services Administration –Ryan White Care Act Title IV
Status: Funded: 1998-99, \$44,000.

Title: Community Based Primary Health Care Partnership: University of Kentucky and Khabarovsk, Russia. Mr. David Fahringer serves as a consultant.

Submitted: United States Agency for International Development and American International Health Alliance.

Status: Funded: 1999-2002, Total direct cost \$750,000.00

Title: Appalachian Geriatric Clinical Clerkship Grant; Mr. David Fahringer served as a Advisory Board Member and Clinical Coordinator for the Physician Assistant Students;

Submitted: U.S. Department of Health and Human Services – Bureau of Health Professions

Status: Funded: 2000-2003, total direct costs, \$422,661.00

Title: The University of Kentucky Chandler Medical Center FIPSE Women's Health Grant; Mr. David Fahringer served on the College of Allied Health Professions task force to develop Structured Clinical Modules (SCIM) for students in the medical center.

Submitted: FIPSE

Status: Funded: (2000 –2003), Total direct cost, \$800,000.00

Title: Complementary and Alternative Medicine Development Grant,

Mr. David Fahringer will serve on the grant to develop course material to be integrated into the doctoral psychology and physician assistant courses.

Submitted: National Center for Complementary and Alternative Medicine

Status: Funded: (2000 –2007), Total direct cost, \$1,147,560.00

Grant Activity – continue:

Title: Preventive Medicine in PA primary care training. Mr. David Fahringer will help develop preventive medicine curriculum and teach the new material in the PA program.

Submitted: HRSA

Status: Submitted November 2002, (2003-2006), Total cost, \$514,220.00

Title: Bringing the Medical History out of the Closet. Mr. David Fahringer and Kevin Crabtree will develop an educational CD for all physician assistant programs on teaching physician assistant students to take medical history from LGBT patients. This grant idea was developed from a master's research project.

Submitted: Physician Assistant Foundation

Status: Submitted October 2005, (2005-2006), Total cost, \$3,500.00

Updated CV: 10/2012 Reference available upon request.

CURRICULUM VITAE

PHYLLIS JEAN PICKUP NASH

OFFICE ADDRESS: College of Medicine Department of Behavioral Science
117 Medical Behavioral Science Building
1100 VA Drive
Lexington, KY 40536-0086
Email: pnash@email.uky.edu

EDUCATION: West Virginia University
Morgantown, West Virginia
Master of Social Work 1979
Doctor of Education, Educational Psy/Communication Studies 1985

University of Kentucky
Lexington, Kentucky
Bachelor of Arts 1968
Psychology

ACADEMIC APPOINTMENTS:

Acting Associate Dean for Academic Affairs
University of Kentucky College of Health Sciences 2012-Present

Vice Chancellor for Academic Affairs and Student Affairs 1991-2003
University of Kentucky Chandler Medical Center

Professor 1995-Present
College of Medicine, Department of Behavioral Science
University of Kentucky

Professor-Joint Appointment 1995-Present
College of Medicine, Department of Surgery
University of Kentucky

Associate Professor-Joint Appointment 1990-1995
College of Medicine, Department of Surgery

Associate Professor 1988-1995
Tenure 1988
College of Medicine, Department of Behavioral Science
University of Kentucky

Visiting Lecturer 1987-1988
College of Medicine, Department of Behavioral Science
University of Kentucky

Assistant Professor 1982-1987
Tenure 1985
Department of Behavioral Medicine and Psychiatry
School of Medicine
West Virginia University

Instructor 1979-1982
Department of Behavioral Medicine and Psychiatry
School of Medicine
West Virginia University

ADMINISTRATIVE APPOINTMENTS:

Chief of Staff 2003
University of Kentucky Office of the President

Director, IRIS Project
60 million dollar project to change University's computer systems 2003-2008

CLINICAL PRACTICE:

Clinical Social Work, University of Kentucky 1987-Present
Clinical Social Work, West Virginia University 1979-1987

CLINICAL CREDENTIALS:

Social Work License
Kentucky 0481

HONORS:

YWCA Women of Achievement Award, 1996
Golden Key National Honor Society, 1995
Omicron Delta Kappa Leadership Honorary, 1994
Award for Excellence in Education
University of Kentucky Department of Surgery, 1990
Phi Kappa Phi, National Honor Society, 1985
West Virginia Social Worker of the Year, 1983

PUBLICATIONS:

Kwolek, D., Nora, A., NASH, P. A Women's Health Course for Education in Internal Medicine. Academic Medicine, 1999, 74(5), 593-594.

Blue, A. V., Stratton, T. D., Donnelly, M. B., NASH, P., & Schwartz, R. W. The Effects of Students' Communication Apprehension and Its Effects on PBL Performance. Medical Teacher, 1998, 20(3), 217-221.

Brandt, B., Quan, M., & NASH, P. The Community-Based Faculty Initiative and Interdisciplinary Service-Learning at the University of Kentucky Chandler Medical Center. Proceedings of the Academic-

Community Partnership Conference, Association of Academic Health Centers and the University of Iowa Health Science Center. Accepted for publication 1997.

Schwartz, R. W., Donnelly, M. B., Blue, A. V., Sloan, D. A., NASH, P. P., & Mayo, W. P. Student's Time Use in a Surgery Clerkship. Medical Teacher, 1997, 19(1), 15-18.

Blue, A. V., Donnelly, M. B., NASH, P. P., & Schwartz, R. W. The Effects of Students' Communication Comfort Levels on PBL Performance. Academic Medicine, Submitted.

Rubeck, R. F., Wilson, H. D., Wilson, E., Jarecky, R. K., & NASH, P. P. The Kentucky Medical Curriculum: A Response to the Call for Educational Reform: A GPEP Report Card. Journal of the Kentucky Medical Association, 1997, 9 25-34.

Mayo, P. W., Donnelly, M.B., NASH, P.P., & Schwartz, R.W. Characteristics of the Effective Tutor in a Problem-Based Surgery Clerkship. Teaching and Learning in Medicine 1993, 5(4), 227-233.

Haist, S. A., NASH, P. P., Elam, C. L. & Rich, E. C. Teaching in a Physical Diagnosis Course: Identifying Faculty Characteristics and Motivational Factors. Teaching and Learning in Medicine, 1993, 5(2), 72-76.

Jones, R. O., Donnelly, M. B., NASH, P. P., Young, A. B., & Schwartz, R. W. The Ongoing Development of a Problem-Based Surgery Clerkship: Year Three. Medical Teacher 1993, 15, 207-215.

Mayo, P., Donnelly, M., NASH, P., & Schwartz, R., Student Perceptions of Tutor Effectiveness in a Problem-based Surgery Clerkship. Teaching and Learning in Medicine, 1993, 5(4), 227-233.

Vasconez, H. C., Donnelly, M. B., Schwartz, R. W., NASH, P. P. & Young, A. B. Students' Perceptions of the Effectiveness of a Problem-Based Surgery Curriculum. Academic Medicine, 1993, 68, S28-S30.

NASH, P. J. P. & Nash, D. A. Moral Reasoning and Clinical Performance of Student Dentists, Journal of Dental Education, 1982, 46, 721-722. Journal of Dental Research, 1992, 061, 268 {Abstract}.

Schwartz, R. W., Donnelly, M. B., NASH, P. P., & Young, A. B. Developing Student's Cognitive Skills in a Problem-Based Surgery Curriculum. Academic Medicine, 1992, 67(10), 694-696.

Schwartz, R. W., Donnelly, M. B., Young, A. B., NASH, P. P., Witte, F.M., & Griffin, W. O. Undergraduate Surgical Education for the Twenty-First Century. Annals of Surgery, 1992, 216 (6), 639-647.

Schwartz, R. W., NASH, P. P., Middleton, J. L., Witte, F. M., Weeks, L. E. & Young, A. B. Problem-Based Learning in the Surgery Clerkship: A Change in Philosophy. Clinical Anatomy, 1992: 5, 69-77.

Schwartz, R., Donnelly, M., NASH, P. Johnson, S., Young, B., & Griffin, W. Problem-Based Learning: An Effective Educational Method for a Surgery Clerkship. Journal of Surgical Research, 1992, 53, 326-330.

Schwartz, R. W., NASH, P. P., Middleton, J. L., Witte, F. M., Weeks, L. E., & Young, A. B. Problem-Based Learning in the Surgery Clerkship: A Change in Philosophy. Journal of Clinical Anatomy, 1992, 5, 69-77.

Mayo, P W., Donnelly, M. B., NASH, P. P., & Schwartz, R. W. Characteristics of the Effective Tutor in a Problem-Based Surgery Clerkship. Focus on Surgical Education, 1991, 8(4), 16-17.

NASH, P. P., Donnelly M. B., & Schwartz, R. W. The Relationships between Psychosocial Variables and Achievement in a Problem-Based Clerkship. RIME, 1991.

Jones, R. O., Donnelly, M. B., NASH, P. P., Young, A. B., & Schwartz, R. W. The Ongoing Development of a Problem-Based Surgery Clerkship. Focus on Surgical Education 1991, 8(4), 12-13.

NASH, P., Schwartz, R., Middleton, J., Witte, F., & Young, B. The Structure of a Student Centered, Problem-Based Surgery Clerkship. Academic Medicine, 1991, 66(7), 415-417.

Schwartz, R., NASH, P., Middleton, J., Witte, F., & Young, B. The History of Developing a Student-Centered Problem-Based Surgery Clerkship. Teaching and Learning in Medicine, 1991, 3(1), 38-44.

Schwartz, R., Donnelly, M., NASH, P., Johnson, S., & Young, B. Interrelationships between knowledge and performance-based testing in a surgery clerkship. Research in Medical Education, Academic Medicine, 1991, 66, Supplement, S19-S20 {Abstract}.

NASH, P. P., Wilson, E. A., Wilson, H. D., & Schwartz, R. W. Administrative and Educational Perspectives on Problem-Based Learning in a Third-Year Surgical Clerkship. Academic Medicine, 1990, 65, 9. {Abstract}.

Schwartz, R., NASH, P., Middleton, J., Witte, F., Weeks, L. & Young, B. Problem-Based Learning in the Surgery Clerkship: A Change in Philosophy. Focus on Surgical Education, 1990, 8 (1), 16 (&13) {Abstract}.

NASH, P. J .P. The Influence of Communication Apprehension on the Hospital Course of Psychiatric Inpatients, West Virginia University, 1985, 220 pages.

NASH, P. J. P. & Nash, D. A. Moral Reasoning and Clinical Performance of Student Dentists. Journal of Dental Education, 1982, 46, 721-722.

Dated: November, 2012

CURRICULUM VITAE

John F. Wilson

Professor
Department of Behavioral Science
University of Kentucky College of Medicine
Lexington, KY 40536-0086
Phone: (859) 323-6257; jfwilson@uky.edu

Birth Date: 9/21/48
Springfield, Illinois
Home: 909 Edgewater Drive
Lexington, KY 40502
Phone: (859) 269-6729

EDUCATION:

College of the Holy Cross, B.A., Psychology, 1970
University of Michigan, M.A., Psychology, 1974
University of Michigan, Ph.D., Social Psychology, 1977

POSITIONS:

Assistant Professor, Department of Behavioral Science, College of Medicine, University of Kentucky, 1977-82; Associate Professor, 1982-2000, Professor 2000-
Associate Professor, Joint Appointment, Department of Psychology, 1988-2000.
Professor 2000-
Associate Professor, Joint Appointment, College of Nursing, 1988-2000,
Professor 2000-
Interim Chairperson, 2001-2002
Vice Chairperson, 2003-2006
Director of Graduate Studies 2007-2009
Associate Chairperson for Education 2007-

PROFESSIONAL ASSOCIATIONS:

American Psychological Association
Society of General Internal Medicine

FELLOWSHIPS AND HONORS:

Provost's Outstanding Teacher Award, 2011
University of Kentucky College of Medicine, William B. Willard Dean's Award for service to the College, 2002.
University of Kentucky, William B. Sturgill Award for Graduate Education, 2002.
Master Teacher Award, University of Kentucky College of Medicine, 1995
Silver Pointer Teaching Award, 1980-81, Medical Class of 1984
Departmental Associate, Psychology Department, University of Michigan, 1976
Rackham Prize Fellow, Horace H. Rackham School of Graduate Studies, University of Michigan, 1973-74
National Science Foundation Individual Fellowship, 1970-72
Woodrow Wilson Fellow, 1970
New England Psychological Association Honorary Fellow, 1969-70

CONSULTING AND RELATED ACTIVITIES:

Contributing consultant, audiovisual services, Addison-Wesley Publishing, 1975-76

Member, Advisory Board, Lexington Rape Crisis Center, 1978-1985

Audiovisual consultant, American Association of Medical Colleges, 1978-1984

Consultant, Mentor Corporation, Santa Barbara, California regarding FDA hearings on efficacy of Silicon Breast Implants, 1991-1992.

Member, Outcomes Measurement Research Task Group, Research Constituency Center, Nursing Service Board of Directors, Veteran's Administration, 1995.

Program Reviewer and Examiner, Kuwait Medical School, 2007

Journal and Grant Reviewer:

Psychosomatic Medicine

Fertility and Sterility

Stemmler Fund for Medical Education

PUBLICATIONS:

Journal Articles

Selby, L., Hoellein, A, and Wilson, J.F. (2011) Are primary care providers uncomfortable providing routine preventive care for inflammatory bowel disease patients. Digestive Diseases and Sciences, 56: 819-824.

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Wilson, J.F. Effectiveness of coping interventions. Invited Keynote Address at University of Rochester Conference on Stress, Coping Processing, and Health Outcomes: New Directions for Theory Development and Research. April 14-15, 1988, Rochester, NY.

RECENT (2006-2011) PAPERS, PRESENTATIONS, AND PUBLISHED ABSTRACTS:

N. Soares, K. Moffett, and J F Wilson Medical Students' Perceptions of Working with Children at the Start of the Pediatric Clerkship. Presented at the Annual Meeting of the Society for Developmental and Behavioral Pediatrics, San Antonio, Tx. Sept. 2011.

Rudy, D.W, Wilson, J.F., Pfeifle, A., Wiese, J. Use of contract learning in a doctoring course. Presented at the Annual meeting of the Society for General Internal Medicine, Phoenix Arizona. May 5, 2011.

Brown, JC, Bingcang, CM Wilson, JF, Hoellein, AR., Medical students' changing attitudes toward persons living with HIV. Presentation at the Southern Society for General Internal Medicine, New Orleans, LA, Feb, 2011.

Flynn, JC, Naveen, MM, Lineberry, MJ, Griffith, CH, Wilson, JF. Hoellein, AR, Resident rating of inpatient complexity related to patient self-ratings: a qualitative study. Presentation at the Southern Society for General Internal Medicine, New Orleans, LA, Feb, 2011.

Naveen, MM, Kokajko L, Rhea, J., Wilson, J.F., Hoellein A.R. Do residents enjoy taking care of complex patients? Presentation at the Southern Society for General Internal Medicine, New Orleans, Feb. 2011.

Piercey, R. R., Denton, F. N., & Wilson, J. F. *Medical humanities: Student choices and reflections*. Paper presented at the Southern regional meeting for the Society of General Internal Medicine, New Orleans, LA, Feb. 2010.

Denton, F. N., Piercey, R. R., & Wilson, J. F. *Students' engagement in longitudinal clinical experiences*. Poster session presented at the Southern regional meeting for the Society of General Internal Medicine, New Orleans, LA, Feb. 2010.

McKinney K, Wilson, J.F. First year medical student perspectives on the transition from class to the clinic. Presentations at the Southern Society of General Internal Medicine, New Orleans, March 20-24,2010.

Romond, J. Wilson, J.F. Perceptions of the inpatient team: a qualitative analysis of inpatient comments. Presentations at the Southern Society of General Internal Medicine, New Orleans, March 20-24,2010.

Hoellein, AR, Wilson, J.F. Inpatient satisfaction on teaching teams. Presentations at the Southern Society of General Internal Medicine, New Orleans, March 20-24,2009.

Lampson E., Wilson, J.F. Presence of medical students and time required on patient rounds. Presentation at the Southern Society of General Internal Medicine, March 20-24,2009.

Webster. J.M., Staton-Tindall, M., Dickson, M. F., Wasarhaley, N., Leukefeld, C., Wilson, J F., Gender differences in employment and employment barriers among drug abusers. Poster session presented at the annual meeting of the College on Problems of Drug Dependence, Reno/Sparks, NV. June, 2009.

Hoellein, A.R., Wilson, J.F., Griffith, C.H., Lineberry, M.J., Haist, S.A. Teaching clinical skills to third year medical students: a methodology that works. Presented at the 13th International Conference on Clinical Competency, Melbourne, Australia, March 5, 2008

Olges JR, Bingcang CM, Wilson JF, Hoellein AR. Medical Students' Attitudes Toward Persons Living with HIV. Presented at the Southern Regional Meeting of the Society of General Internal Medicine Annual Session, New Orleans, LA, February 22, 2008. also Poster presentation at National Meeting of the Society of General Internal Medicine 31st Annual Session, Pittsburgh, PA, April 10, 2008.

West HC, Combs KC, Olges JR, Bingcang CM, Wilson JF, Hoellein AR. Health Professional Students and Persons Living with HIV: A Qualitative Analysis. Presented at the Southern Regional Meeting of the Society of General Internal Medicine Annual Session, New Orleans, LA, February 22, 2008.

Hoellein AR, Olges JR, Griffith CH, Bingcang CM, Wilson JF. How do Health Professional Students Feel about Testing for HIV? Presented at the Southern Regional Meeting of the Society of General Internal Medicine Annual Session, New Orleans, LA, February 22, 2008.

Croteau JS, Hoellein AR, Selby LA, Wilson JF, Pande S, Balla P, de Villiers WJ, Bingcang CM, Riff B, Kane S. Are Patients with Inflammatory Bowel Disease Receiving Preventive Health Services? Presented at the Southern Regional Meeting of the Society of General Internal Medicine Annual Session, New Orleans, LA, February 22, 2008.

Hoellein AR, Rudy DW, Lineberry MJ, Wilson JF, Haist SA. A Geriatric Medicine Workshop Increases Knowledge and Improves Clinical Skills. Poster Presentation at the National Meeting of the Society of General Internal Medicine 30th Annual Session, Toronto, ON, April 27, 2007.

Haist SA, Hoellein AR, Griffith CH, Lineberry MJ, Wilson JF. Teaching Clinical Skills to Third-year Medical Students: A Methodology that Improves Skills and Increases Knowledge. Oral Presentation at the National Meeting of the Society of General Internal Medicine 30th Annual Session, Toronto, ON, April 28, 2007.

Hoellein AR, Feddock CA, Wilson JF, Griffith CH, Rudy DW, Caudill TS. Student Involvement on Teaching Rounds. Association of American Medical Colleges Annual Research In Medical Education Research Paper Oral Presentation. Washington, DC, November 4, 2007.

Hoellein AR, Wilson JF, Lineberry MJ, Haist SA. A Complementary and Alternative Medicine Workshop Using Standardized Patients Increases Knowledge and Improves Skills. Presented at the Southern Regional Meeting of the Society of General Internal Medicine Annual Session, New Orleans, LA, February 9, 2007.

Caudill TS, Hoellein AR, Lineberry MJ, Wilson JF, Haist SA. A Nutrition and Physical Well-being Workshop Using Standardized Patients Increases Knowledge and Improves Skills. Presented at the Southern Regional Meeting of the Society of General Internal Medicine Annual Session, New Orleans, LA, February 9, 2007.

Hoellein AR, Rudy DW, Lineberry MJ, Wilson JF, Haist SA. A Geriatric Medicine Workshop Using Standardized Patients Increases Knowledge and Improves Skills. Presented at the Southern Regional Meeting of the Society of General Internal Medicine Annual Session, New Orleans, LA, February 9, 2007.

Haist SA, Hoellein AR, Griffith CH, Lineberry MJ, Wilson JF. Teaching Clinical Skills to Third-year Medical Students: A Methodology that Works. Presented at the Southern Society of Educational Affairs Annual Session, Louisville, KY, April 20, 2007.

Bailey Seals PD, Wilson JF, Duke MB, Feddock CA, Caudill TS. Training Needs of General Internists – Survey of Post-Residency Practice Patterns and Perception of Preparedness. *J Gen Intern Med.* 2006;21(Suppl 4):152

Haist SA, Rudy DW, Hoellein AR, Lineberry MJ, Wilson JF. Does a Geriatric Medicine Workshop Using Standardized Patients Increase Knowledge and Improve Skills? *J Investig Med.* Jan 2006; 54(1):S293.

Bingcang CM, O'Bryan KW, Hoellein AR, Thornton AC, Wilson JF. Depression and Substance Abuse in Persons Living with HIV. *J Investig Med.* Jan 2006; 54(1):S313.

Hoellein AR, Kendall JA, Wilson JF, Thornton AC. Characteristics of Not Knowing the CD4 Cell Count When Living with HIV. *J Investig Med.* Jan 2006; 54(1):S315.

Wright TN, Feddock JM, Wilson JF, Thornton AC, Hoellein AR. Intimate Partner Violence: Who is at Greatest Risk? *J Investig Med.* Jan 2006; 54(1):S316.

Lineberry MJ, Caudill TS, Hoellein AR, Wilson JF, Haist SA. Does a Nutrition and Physical Well-Being Workshop Using Standardized Patients Increase Knowledge and Improve Skills? *J Investig Med.* Jan 2006; 54(1):S316.

Feddock CA, Hoellein AR, Wilson JF, Griffith CH. Is Resident Stress Associated with Suboptimal Patient Care? *J Investig Med.* Jan 2006; 54(1):S317.

Hoellein AR, Wilson JF, Lineberry MJ, Haist SA. Does a Complementary and Alternative Medicine Workshop Using Standardized Patients Increase Knowledge and Improve Skills? *J Investig Med.* Jan 2006;54(1):S318-S319.

Feddock CA, Hoellein AR, Wilson JF, Lineberry MJ, Haist SA. Does an Adolescent Medicine Workshop Using Standardized Patients Increase Knowledge and Improve Skills? *J Gen Intern Med.* 2006;21(s4):40.

Hoellein AR, Wilson JF, Lineberry MJ, Haist SA. Does a Complementary and Alternative Medicine Workshop Using Standardized Patients Increase Knowledge and Improve Skills? *J Gen Intern Med.* 2006;21(s4):39.

Haist SA, Hoellein AR, Talente G, Lineberry MJ, Wilson JF, Griffith CH. A Sexual History/HIV Counseling Workshop Using Standardized Patients Increases Knowledge and Improves Skills. *J Gen Intern Med.* 2006;21(s4):6.

Rudy DW, Haist SA, Hoellein AR, Lineberry MJ, Wilson JF. Does a Geriatric Medicine Workshop Using Standardized Patients Increase Knowledge and Improve Skills? J Gen Intern Med. 2006;21(s4):39.

Caudill TS, Hoellein AR, Lineberry MJ, Wilson JF, Haist SA. Does a Nutrition and Physical Well-being Workshop Using Standardized Patients Increase Knowledge and Improve Skills? J Gen Intern Med. 2006;21(s4):39.

Hoellein AR, Wilson JF, Thornton AC. Characteristics of Not Knowing the CD4 Cell Count When Living with HIV. J Gen Intern Med. 2006;21(s4):27.

Feddock CA, Hoellein AR, Wilson JF, Griffith CH. Is Resident Stress Associated with Suboptimal Care? J Gen Intern Med. 2006;21(s4):78.

Deep KS, Green SF, Griffith CH, Wilson JF, Hensley A. What do Residents Believe are the Most Important Components of DNR Discussions? Poster presentation at the Society of General Internal Medicine 29th Annual Meeting, Los Angeles, CA, April 29, 2006 .

Tackett A, Wilson JF, Griffith CH. Comparing Resident Quality of Life Before and After Work Hour Restrictions. Poster presentation at the Society of General Internal Medicine 29th Annual Meeting, Los Angeles, CA, April 29, 2006 .

Griffith CH, Wilson JF. Whose RIME Assessment Predicts Student Examination Performance: Attendings, Residents, or Interns? Plenary oral abstract presentation at the CDIM National Meeting, New Orleans, LA, October 27, 2006.

Hoellein AR, Feddock CA, Wilson JF, Griffith CH, Caudill TS. Teaching Quality on Attending Rounds: Role of Student Involvement. Poster Presentation at the Alliance for Academic Internal Medicine Annual Session, New Orleans, LA, October 27, 2006.

GRANTS:

Recent

Faculty Development in Primary Care

HRSA Charles Griffith PI

Co-PI and Co-Program Director 15% 7/2005-6/2008 (432,476)

Primary Care Training in Rural Primary Care: Special Training in primary care medicine in rural areas: HRSA Caudill (PI) Program Evaluation 10% 7/1/05- 6/30/08

Pre-doctoral Training in Primary Care: special topics in standardized patient training

Health Resources Services Administration, Steve Haist, PI

Co-investigator 7/1/03 - 6/30/06, 20% effort, (\$917,343)

Faculty Development in Primary Care

HRSA Charles Griffith PI

Co-PI 20% 7/2002-6/2005 (581,498)

Understanding the association of teaching and learning: a national study of moderating variables.

Edward Stemmler Medical Education Research Fund of the National Board of Medical Examiners.
PI Charles Griffith,
Co-PI, 10% (68,844)

Complementary and Alternative Medicine Training for Medical Students
NIH William Elder, PI
Co-investigator 10/1-2002- 9/30-2007. 10% effort (979,476)

CURRICULUM VITAE

Revised 1/25/13

Gerry A Gairola, PhD

I GENERAL INFORMATION

Office Address: College of Health Sciences
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Division of Physician Assistant Studies
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University of Kentucky
Lexington, Kentucky 40536-0200
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Email gagair01@uky.edu

II EDUCATION

1967	University of Kentucky	BA
Major:	Education	
1969	University of Kentucky	MA
Major:	Sociology	
1971	University of Chicago	Certificate
	Institute in Fertility & Family Planning	
Major:	Population	
1975	University of Kentucky	PhD
	Demography/Social Psychology	
Major:	Sociology	

Dissertation Title: "Female Employment and Fertility in the United States"
(PhD)

Thesis Title: "Family Authority Structure and Achievement Motivation"
(MA)

III PROFESSIONAL EXPERIENCE

Professor, (Regular Title Series), Division of Physician Assistant Studies, Department of Clinical Sciences, University of Kentucky, 1998-present

Director of Graduate Studies, Physician Assistant Master's Program, 2004-Present

Interim Chair, Department of Health Services, University of Kentucky, 1997-1998

Chair, Department of Health Services, University of Kentucky, 1989-1997

Acting Director, Health Sciences Education Division, University of Kentucky, 1992-1997

Professor, (Regular Title Series), Division of Physician Assistant Studies, Department of Health Services, University of Kentucky, 1995-1997

Associate Professor (Regular Title Series), Division of Physician Assistant Studies, Department of Health Services, University of Kentucky, 1986-1995

Acting Director, Physician Assistant Studies Division, University of Kentucky, 1989

Assistant Professor (Regular Title Series), Department of Physician Assistant Studies, University of Kentucky, 1985

Assistant Professor (Regular Title Series), Department of Allied Health Education and Research, University of Kentucky, 1980-1984

Senior Research Associate, Physician Assistant Program, University of Kentucky, 1977-1980

Instructor, Department of Sociology, University of Kentucky (Part-time), 1976-1980

Demographer, Health Resources Development Institute, Lexington, Kentucky, 1975-1977

IV ACADEMIC APPOINTMENTS

Professor, (Regular Title Series), Division of Physician Assistant Studies, Department of Clinical Sciences, University of Kentucky, 1998-present

Associate Member, East-West Center, Honolulu, Hawaii, 1988-Present

Interim Chair, Department of Health Services, University of Kentucky, 1997-1998

Chairperson, Department of Health Services, University of Kentucky, 1989-1997

Acting Director, Health Sciences Education Division, University of Kentucky, 1992-1997

Professor, (Regular Title Series), Division of Physician Assistant Studies, Department of Health Services, University of Kentucky (Full-time), 1995-1997

Associate Professor (Regular Title Series), Division of Physician Assistant Studies, Department of Health Services, University of Kentucky, 1986-1995

Acting Director, Physician Assistant Studies Division, University of Kentucky, 1989

Center Associate, East-West Center, Honolulu, Hawaii, 1989-Present

Assistant Professor (Regular Title Series), Department of Physician Assistant Studies, University of Kentucky (Full-time), 1985

Assistant Professor (Regular Title Series), Department of Allied Health Education and Research, University of Kentucky, 1980-1984

Senior Research Associate, Physician Assistant Program, University of Kentucky, 1977-1980

Instructor, Department of Sociology, University of Kentucky (Part-time), 1976-1980

V HONORS/SCHOLARSHIPS

Member, Phi Alpha Tau, Honorary Society for Physician Assistants, 2012

Bursary Award, British Society of Gerontology, 2008

Nominee, 2003 Distinguished Educator Award, National Rural Health Association, 2003

Public/Private Partnership Award, Southeastern Association of Area Agencies on Aging, August 28, 1995, Memphis, Tennessee (Project Award)

Project Nominee, National AHEC Award in Primary Health, 1995

Project Nominee, Primary Care Achievement Award in Education, The Pew Charitable Trusts, 1994

UK Presidential Award, Summer Institute for Women in Higher Education Administration, Bryn Mawr College, 1994

National Rural Health Association Nominee, National Committee on Allied Health, 1992

Alpha Eta Society (Allied Health Honor Society), Faculty Member, 1992-Present

Recipient, University Faculty Grant Award for Outstanding Performance, 1988-1991

Alpha Kappa Delta Society (Sociology National Honor Society), 1973-Present

Crouse Foundation Education Grant, University of Chicago, 1971

State Vocational Rehabilitation Scholarship, University of Kentucky 1963-1967

_VI RESEARCH AND/OR CREATIVE PRODUCTIVITY

Publications:

Gairola, G "Reflections of an International Delegate," *Generations Review*, British Society of Gerontology, 2009

Gairola, G "Developing an Interdisciplinary Curriculum for Physician Assistants and other Health Science Students in Care of the Elderly: Opportunities and Challenges" Abstract published in Sustainable Futures for an Aging World, September 2008, Proceedings of the Conference of the British Society of Gerontology Bristol, England, (Refereed)

Robinson, TC; Gairola, G and Robinson, R " Curriculum Mapping Health Professions Education Related to the Treatment of Dementia: A Case Study" Abstract published in Sustainable Futures for an Aging World, September, 2008, Proceedings of the Conference of the British Society of Gerontology Bristol, England, September 2008 (Refereed)

Schulman, E, Gairola, G, Kuder, L and McCulloch, B, "Depression and Associated Characteristics Among Community-based Elderly People", Journal of Allied Health, Vol 31, No 3, 2002, pp 140-146

Gairola, G Book Review, *Unmet Need and Elder People: Towards Synthesis of User and Provider Views*, by Cordingley, et al, May 2002 (Invited) Published in Aging and Society, Vol 22, Part 3, Oxford University Press, Oxford, England

Kuder, L, Gairola, G and Hamilton, C "Development of Rural Interdisciplinary Geriatric Health Care Services for Patient Care and Student Training" Gerontology and Geriatrics Education Vol 21(4), 2001, pp 65-79

Gairola, G, "The Third International Conference Towards Holistic Well-Being", International Journal of Interprofessional Care, Vol 15, No 1, 2001 (invited)

Gairola, G "Hands Across the Water", United Kingdom Centre for the Advancement of Interprofessional Education Bulletin, No 16, Spring 1999, p 7

Gairola, G and Fahringer, D "Physician Assistants in the United States", United Kingdom Centre for the Advancement of Interprofessional Education Bulletin, No 16, Spring 1999, p 14

Gairola, G, Kuder, L and Bolt, D "Inquiry Into Planning For Positive Aging" (Contributors), Family and Community Development Committee, Parliament of Victoria, Australia, December 1997

Gairola, G "Developing Rural Interdisciplinary Geriatrics Teams in a Changing Health Care Environment" Journal of Allied Health, Winter, 1997

Huff, F and Gairola, G "Conceptual and Practical Issues in Interdisciplinary Education" Journal of Allied Health, Vol 24, No 4, Fall, 1995

Gairola, G "Health Professional Education for Rural Medically Underserved areas and Community Development," in Development and Conservation in the Asia-Pacific Region, Kiyoshi Yamazato, et al (EDS), Okinawa Chapter of the East-West Center Association, 1995

Gairola, G and White K "Developing Geriatrics Curriculum for a Rural Interdisciplinary Project" Abstract published in Workshop for Key Staff of Interdisciplinary Rural Training Grants, Alison Hughes (Ed), University of Arizona (Contract No 240-93-0039), HRSA

Gairola, G and Bolt D "Community Perspective," Chapter 5 in Tool Kit for Interdisciplinary Training Grant Programs USDHHS, Health Resources and Services Administration, Bureau of Health Professions, Washington, DC, 1993

Pullen, C and Gairola G "Educational Applications of Technology for Rural Sites," Chapter 11 in Tool Kit for Interdisciplinary Training Grant Programs USDHHS, Health Resources and Services Administration, Bureau of Health Professions, Washington, DC, 1993

Hochstrasser, D and Gairola G "Family Planning and Fertility in Southern Appalachia: A Community Study" Human Organization Vol 50, No 4, 1991

Porter, J, Gairola G, and Skaff K "Student Characteristics and Interest in Rural Practice, "Resources in Education, ERIC Document Reproduction Series, Educational Resources Information Center/Clearinghouse on Rural Education and Small Schools (ERIC/CRESS), Appalachia Educational Laboratory, Charleston, WV, 1990

Rubio, R, Gairola, G and Skaff, K "Health Professionals' Location and Practice in Rural Underserved Areas: An Assessment of Variables" Proceedings from the 1988 Conference on Appalachia, Health in Appalachia, University of Kentucky, November, 1988

Gairola, G "Improving Deployment of Physician Assistant Graduates to Appalachian Kentucky" Proceedings of the 1988 Annual Meeting of the Association of Physician Assistant Programs, Association of Physician Assistant Programs, Arlington, Virginia, 1988 pp 35-36

Brasfield, L, Gairola, G and Geller, E "Social Factors in Aging" Interdisciplinary Faculty Guide:

Introduction to Geriatric/Gerontologic Health Care Ohio Valley Appalachian Regional Geriatric Center, University of Kentucky, 1987

Gairola, G, Hochstrasser, D and Garkovich, L "Modern Contraceptive Practice in Rural Appalachia" American Journal of Public Health, Vol 76, No 8, 1986, pp 1004-1008 Abstract published in the Population Index, Office of Population Research, Princeton University, No 3, Fall, 1986, p 529 and articles summarizing findings appeared in column of OB/GYN News, Vol 22, No 2, January 1987, in Modern Birth Control Use in Appalachia Assessed, and Family Planning Perspectives, Vol 18, No 6, Nov/Dec, 1987, "Contraceptive Procedure in Rural Appalachia is Similar to National Rate"

Gairola, G, Skaff; K and Marshall, P "Evaluation of a Chinese-American Exchange Program for Dental Hygienists" Dental Hygiene, Vol 60, No 4, 1986, pp 154-157, 169

Hochstrasser, D, Gairola, G, Garkovich, L, Marshall, P and Rosenstiel, R Revolution in Reproduction: Family Planning in an Appalachian Community, CDC Development Paper, Number 21, Center for Developmental Change, University of Kentucky, 1985, 141 pp

Hochstrasser, D, Garkovich, L, Gairola, G, Marshall, P and Rosenstiel, R "The Demographic Transition in an Appalachian Community," Research Report: Eastern Kentucky Fertility Study University of Kentucky, Lexington, Kentucky, March, 1985 Published in Resources in Education, ERIC Document Reproduction Series, Educational Resources Information Center (ERIC), National Institute of Education, Washington, DC

Gairola, G "Physician Assistant Graduates: Factors Related to Rural-Urban Practice Location" Physician Assistant Profession Bibliography: Selected and Annotated, 3rd Edition, Association of Physician Assistant Programs, Arlington, Virginia, 1984, p 15

Gairola, G "Physician's Assistants: An Examination of Role Content and Supervision in Practice" Abstract of paper published in Sociological Abstracts, Supplement No 127, April, 1984, p 13 (No S16017)

Gairola, G and Combs, G "Self-Reported Autonomy in Management of Common Primary Care Problems Among Physician Assistants," Proceedings of the Paper Presentation Session Eleventh Annual Physician Assistant Conference, St Louis, Missouri, June, 1983, Association of Physician Assistant Programs, Arlington, Virginia, 1984, pp 11-12 Abstract of paper published in Physician Assistant Profession Bibliography: Selected and Annotated, 3rd Edition, Association of Physician Assistant Programs, Arlington, Virginia, 1984, p 138

Gairola, G and Francoeur, R (Ed) Biomedical Ethics: A Guide to Decision Making, New York, John Wiley & Sons, 1983 Book review published by John Wiley & Sons (Invited Review)

Gairola, G and Skaff, K "Ethical Reasoning in Dental Hygiene Practice" Dental Hygiene Vol 57, No 2, January 1983 pp 16-20

Gairola, G "Summer Institute in Health Care Ethics for Allied Health Faculty" Prospectus for Change Center for Interdisciplinary Education, College of Allied Health Professions, University of Kentucky, Vol 9, No 1, Winter, 1983, pp 1-2

Gairola, G "Physician Assistant Graduates: Factors Related to Rural-Urban Practices Location" Journal of Community Health, Vol 8, No 1, Fall 1982, pp 23-22

Ford, T and Gairola, G The Prediction and Evaluation of County Net Migration Rates in Kentucky: An Exploratory Study RS 44 College of Agriculture, Department of Sociology, University of Kentucky, 1975, 15 pp

Hochstrasser, D, Gairola, G and Lewis, M "Fertility Decline in Southern Appalachia: An Anthropological Perspective" Human Organization, Vol 32, No 4, winter 1973, pp 331-336

Research Reports:

Gairola, G, Kuder, L, and Hamilton, C, Allied Health Special Projects, Health Resources and Services Administration, Continuation Application, 2000, 2001, 20002, 2003, 2004

Gairola, G, Kuder, L, and Hamilton, C, Grants for Interdisciplinary Training for Health Care for Rural Areas Health Resources and Services Administration, Continuation Applications and Reports, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000

Hochstrasser, D Gairola, G, Garkovich, L, Marshall, P and Rosenstiel, R "An Interdisciplinary Assessment of Fertility Management in a High Fertility Community" Final Report submitted to the National Institute of Child Health and Human Development, Bethesda, Maryland, 1984, 167 pp

Gairola, G and Martin, R "Follow-up Study of Physician Assistant Graduates" Report submitted to DHEW, Health Manpower Initiative Projects: Grants for Educational Programs for the Physician Assistant, November 1980, 36 pp

Hochstrasser, D and Gairola, G "The McCracken County Family Planning Program: An Evaluation" Center for Developmental Change, University of Kentucky, 1973, 140 pp

Gairola, G and Ford, T "Family Planning Services in McCracken County, Kentucky: An Evaluation" Center for Developmental Change, University of Kentucky, 1970, 86 pp

Grant Activity:

Principal Investigator, "Study Tour-International Perspectives on Care of Older People in Great Britain", Educational Enhancement Grant, College of Health Sciences, 2009-2010 (\$3,000)

Co-Investigator, "Targeted Training for Physician Assistant Students Caring for At Risk Populations in Kentucky,(#D57HP10165) US Department of Health and Human Services, HRSA, Funded, \$273,510 2008-2010 Funded

Principal Investigator, "The Role of Primary Care Physicians in the Provision of Mental Health Services", Submitted to the National Institutes of Health, Challenge Grants,(RFA-OD-09-003) \$861,1872 2009 Not Funded

Co-Principal Investigator, "Developing Health Sciences Students and Community Health Navigators for Diabetes Prevention and Care," Submitted to the National institutes of Health, Challenge Grants, 2009 Not Funded

Co-Investigator/consultant, "The Role of Primary Care Physician Assistants in the Provision of Mental Health Services," Submitted to AAPA/PAEA Research Foundation, January 26, 2008, Not Funded

Co-investigator, "Targeted Training for Physician Assistant Students Caring for At- Risk Populations in Kentucky, Health Resources and Services Administration (DHHS), Funded \$227, 368, 2007-2010

Principal Investigator, "Integrating Concepts, Principles and Models of Chronic Care Mangement into the Curricula of Health Science Students," (In process) --Sabbatical Leave Project

Co-Investigator, Small Grant Program for Chronic Care Management Conference Support, The Agency for Healthcare Research and Quality, DHHS, Washington, DC 2008 Not Funded

Co-Investigator, The Impact of Mental Health Screening by Physician Assistants, Submitted to AAPA Foundation ,Cooperative application by University of Kentucky, Washington State University and University of Texas Submitted Summer, 2007 (Approved, grant not accepted due to data use policy conflict between University of Oklahoma and Foundation)

Faculty, Grants for Physician Assistant Training: Preventive Medicine in PA Primary Care Training, Health Resources and Services Administration, Department of Health and Human Services, 2003-2007, Budget: \$514,220

Co-Principal Investigator, Proposal for a Partnership between University of Kentucky and Bharathidasan University (India) Submitted to US Department of State, Washington, DC, 2004, Budget Requested \$274,744 (Not funded) (Resubmitted internally, 2005)

Principal Investigator, Re-Engineering the Clinical Research Enterprise: Feasibility of Integrating and Expanding Clinical Research Networks, National Institutes of Health Roadmap Grants, Submitted February, 2004, Budget Requested: \$2,459,158 (Not Funded)

Principal Investigator, Model Program for a Rural Interdisciplinary Geriatric Clinical Clerkship, Allied Health Special Projects Grant, Bureau of Health Profession, Health Resources and Services Administration, Submitted January 10, 2003, Budget Requested: \$785,230 (Not Funded)

Principal Investigator, Model Program for a Rural Interdisciplinary Geriatric Clinical Clerkship, Allied Health Special Projects Grant, Bureau of Health Resources and Services Administration (DHHS), 2000 – 2004, Total Award \$382, 80600

Contributor/Deputy Director, Grants for National Centers of Excellence for Women's Health, HRSA, 1997 (Not funded)

Principal Investigator, Grant for Interdisciplinary Training for Health Care for Rural Areas, Bureau of Health Professions (DHHS), 1997-2001 Total Award: \$643,263

Principal Investigator, Grant for Interdisciplinary Training for Health Care for Rural Areas, Bureau of Health Professions (DHHS), 1994-1997 Total Award: \$580,603

Principal Investigator Grant for Interdisciplinary Training for Health Care for Rural Areas Bureau of Health Professions (DHHS), 1991-1994 Total Award: \$633,641

Member, Advisory Committee, Community Service - Learning Program Grant, PEW Foundation Grant, University of Kentucky, 1995-1996

Member Educational Strategies Subcommittee, Robert Wood Johnson Planning Grant, 1993-1994

Technical Advisor Grant Programs for Physician Assistants, Bureau of Health Professions (DHHS), 1992-1995 Total Award: \$433,514

Center Associate Research Center for Health Risk Reduction in Rural Youth National Center for Nursing Research (DHHS) 1991-1994

Principal Investigator "Grants for Interdisciplinary Training for Health Care for Rural Areas" Bureau of Health Professions (DHHS), 1990 (Disapproved)

Participant and Sub-project Director "Kentucky Rural Health Research Center" DHHS Rural Health Research Center Grants Program, HRSA, Office of Rural Health Policy, 1990 (Approved, not funded)

Co-Investigator "Multidisciplinary Human Population Studies Program," Multidisciplinary Feasibility Assessment Program (MFAP), University of Kentucky, 1989 (Not funded)

Award, East-West Center, Population Institute, Honolulu, Hawaii, (to conduct research and training in fertility and infant mortality), 1988

Faculty Development Grant, Graduate School, University of Kentucky, 1988

Consultant, "Relationship Between Teenage Parenting and Child Maltreatment," Office of Human Development Service, Department of Health and Human Services, 1988
Co-Author/Project Director "Training for Appalachia Practice Project (TAPP)" Training and Research Project funded as part of a grant from the Bureau of Health Professions, Health Resources and Services Administration 1986-1990 Total award: \$332,000

Consultant/Faculty Ohio Valley Appalachia Regional Geriatric Education Center Training grant funded by Bureau of Health Professions, Health Resources and Service Administration, DHHS, 1985-1988 Total award: \$783,000

Principal Investigator "Ethics and Values in Scientific Studies: The Case of In Vitro Fertilization and Embryo Transfer" Kentucky EPSOR Program, National Science Foundation, 1985 (Disapproved)

Co-Principal Investigator "Family Planning Support for Rural Teenage Parents" Research proposal submitted to the Office of Family Planning, US Public Health Service, 1984 (Approved, not funded)

Coauthor/Project Director "Training for Appalachian Practice Project (TAP)/Behavioral Concepts Project" Training and research project funded as part of a grant from the Bureau of Health Professions, Health Resources and Service Administration, DHHS, 1983-1986 Total award: \$210,570

Principal Investigator "Contraceptive Sterilization in a Rural Community" Research proposal submitted to the National Institute of Child Health and Human Development, Center for Population Research, National Institute of Health (NIH), 1983 (Approved, not funded)

Co-Principal Investigator "Rural Pregnant and Parenting Teenagers: Support Services" Research proposal submitted to the Office of Family Planning, USPHS, Department of Health and Human Services, April, 1982 (Approved, not funded)

Co-Investigator "Rural Satellite: Evaluation Management" Proposal submitted to the Agency for International Development, Washington, DC, June, 1981 (Approved, not funded)

Co-Principal Investigator "Interdisciplinary Assessment of Fertility Management in a High Fertility Community" This research study was conducted under an extramural contract with the National Institute of Child Health and Human Development, Center for Population Research, National Institutes of Health (NIH) Award period: July 1980 - December 1983 Total award: \$426,828

Co-Author/Faculty "Summer Institute in Health Care Ethics for Allied Health Faculty" Training program sponsored by an extramural grant from the National Endowment for the Humanities (NEH) Award period: October 1982 - September 1983 Total award: \$211,811

Co-Author/Principal Investigator "Evaluation of Training of Physician Assistants" Research study conducted as part of a training grant from the Bureau of Health Professions, Health Resources and Services Administration DHHS 1980-1983 Total award: \$316,571

X OTHER

Project Director, Videotape "An Appalachian Experience" A film to prepare physician assistant students for practice in rural Appalachia, 1988

Scriptwriter, Videotape "Laura" An ethics case study film Used in university ethics courses and a national teleconference in health care ethics, 1984

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Journal of the American Medical Association, p. 1612.

Vita

Mrs. DeShana A. Graves Collett, MSPAS, PA-C

Education

Doctor of Philosophy, University of Kentucky, Completion December 2013.
Major: Educational Policy and Procedure in Higher Education
Dissertation Title: The Influence of Race and Socioeconomic Status on
Routine Screening Practices of Physician Assistants

Master of Science, University of Kentucky, 2003.
Major: Physician Assistant Studies

Bachelor of Science, University of Kentucky, 2000.
Major: Education, General

Professional Positions

Academic - Post-Secondary

Associate Professor, Tenure Track, University of Kentucky. (July 1, 2012 - Present).

Faculty Lecturer, University of Kentucky. (January 1, 2008 - June 30, 2012).

Professional

Physician Assistant, Lexington Clinic. (July 6, 2004 - Present).

Awards and Honors

Pi Alpha National PA Honor Society. (June 1, 2013 - Present).

A Teacher Who Made a Difference, University of Kentucky, College of Education. (April 27, 2013 - Present).

Kentucky Association for Physician Assistant's University of Kentucky Liaison. (2008 - Present).

Alpha Eta Honors Society. (January 1, 2003 - Present).

Graduate School Commonwealth Incentive. (January 2001 - August 2003).

RESEARCH

Published Intellectual Contributions

Refereed Journal Articles

Wyant, A. R., Collett, D. G. (2013). Trauma in Pregnancy: The challenge of simultaneous diagnosis and management of two-patients-in-one. A Clinical Review. *JAAPA*, 26(5), 24-29.
journals.lww.com/jaapa/Fulltext/2013/05000/Trauma_in_pregnancy__Diagnosis_and_management_of.5.aspx

Conference Proceedings

Collett, D. G. (2011). *An Attempt to Operationalize Culture in Healthcare: An Analytical Literature Review* (No. 3-Summer 2011 ed., vol. 24). St. Louis, Missouri: MWERA Annual Meeting.
http://www.mwera.org/PDFs/MWERA2011_program_issue.pdf;
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Other

Wyant, A. R., Collett, D. G. (2013). In Haymarket Medical Education (Ed.), *Trauma in Pregnancy: The challenge of simultaneous diagnosis and management of two-patients-in-one*. (5th ed.). Montvale, NJ: MyCME.
<http://www.mycme.com/trauma-in-pregnancy-diagnosis-and-management-of-two-patients-in-one-eosinophilic-esophagitis-a-practical-primer-for-an-atypical-disease/activity/1389/>

Presentations Given

Collett, D. G. (Presenter & Author), Harper, C. (Presenter & Author), Remer, R. (Presenter & Author), Beeman, C. S., 2014 ADEA Annual Session & Exhibition, "Interprofessional Cultural Competence Programming," American Dental Education Association. (March 15, 2014).

Collett, D. G., 10th Annual Tri-State Diversity Conference, ""When it seems like your healthcare provider is speaking a different language: Raising Awareness and Appreciating our Unique Traits"." (February 22, 2014).

Collett, D. G., 2013 Physician Assistant Educational Association Conference, "The Influence of Race and Socioeconomic Status on Routine Screening Practices of Physician Assistants," PAEA. (October 2013).

Remer, R. (Presenter & Author), Mineri, A. (Author Only), Collett, D. G. (Presenter & Author), American Psychological Association Convention 2013, "Cultural Competency in Healthcare: Strategies to Increase Future Providers' Awareness," Division 17 2013 APA Convention. (July 31, 2013).

Collett, D. G. (Presenter & Author), 2013 AHEC Summer Health Career Camps, "Physician Assistant Career," AHEC-As you may recall, each summer, the Univ. of KY's AHEC central office hosts 25 geographically, racially and economically diverse rising high school juniors as part of this annual residential summer camp for students who have demonstrated an interest in a Health career. These students have been selected after a rigorous application and selection process that includes the submission of transcripts, letters of recommendation, and a personal statement.. (July 16, 2013).

Collett, D. G. (Presenter & Author), 2012 AHEC Summer Health Career Camps, "Physician Assistant Career," AHEC-As you may recall, each summer, the Univ. of KY's AHEC central office hosts 25 geographically, racially and economically diverse rising high school juniors as part of this annual residential summer camp for students who have demonstrated an interest in a Health career. These students have been selected after a rigorous application and selection process that includes the submission of transcripts, letters of recommendation, and a personal statement.. (2012).

Remer, R. R. (Presenter & Author), Collett, D. G., Minieri, A. (Presenter & Author), Murphy, R. K. (Author Only), National Multicultural Conference and Summit, "Multicultural competency in healthcare: Empowering change agents through education," National Multicultural Conference and Summit. (August 2012).

Collett, D. G., National Multicultural Summit & Conference, "The Influence of Race and Socioeconomic Status on Routine Screening Practices of Physician Assistants." (August 2012).

Collett, D. G., Midwestern Educational Research Conference, "Culture and Competency in Healthcare: An Attempt to Operationalize Culture within Healthcare: An Analytical Literature Review." (October 13, 2011).

Schumacher, M. M., Pascale-Hague, D., Collett, D. G., McKinney, K. M., Tower, M. D., Kregor, J. M., Wiese, H. J. C., Wilson, J. F. In Christopher S. Candler, MD, EdD (Ed.), *Basic Interviewing Skills: Eliciting a Sexual History* (MEP-2011-0019 ed.). Washington,DC: MedEdPORTAL.
<https://www.mededportal.org/>

Collett, D. G. (Presenter & Author), Bradley, K. D. (Presenter & Author), Midwestern Educational Research Association, "Measuring Incidence and Factors Associated with Domestic Violence on African American Women: A Cultural Competence Framework," Midwestern Educational Research Association. (October 2010).

Collett, D. G., National Conference of State Legislators Legislative Summit, "Discussion on Important Legislative issues pertaining on Physician Assistants." (July 23, 2010).

Collett, D. G., Kentucky PA Day at the State Capital, Kentucky Association of Physician Assistants. (February 2010).

Collett, D. G., YMCA Black Achievers' Program, Medical Career Cluster, "Discussion of the Physician Assistant Medical profession," YMCA. (July 1, 2009).

Collett, D. G., Association for Minority Health Professionals, "Discuss the Physician Assistant Profession," Association for Minority Health Professionals. (January 1, 2009).

Collett, D. G., Graduate Master's Project Oral Defense, "Efficacy of Misoprostol," University of Kentucky, CHS, Division of PA Studies. (August 2003).

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October 2013