A study of social workers knowledge of environmental living conditions and health disparities

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It has been proven that there is a connection between the physical environment and health outcomes. Low income and minority communities live in hazardous environments and bear a disproportionate burden of environmental health disparities. Environmental hazards imposed on low income and minority communities require the immediate attention of social workers. Social workers are in a unique position to ensure that the health and well being of oppressed groups is not compromised by environmental factors. This study examined the environmental health awareness of 90 licensed social workers. More specifically, this study assessed the following information from social workers: (1) familiarity with environmental hazards, (2) knowledge of environmental health problems, (3) knowledge of environmental legislation, (4) professional practice of screening clients for past and present exposure to environmental pollutants, (5) professional experiences with receiving environmental concerns from clients, (6) professional practice of advocating for the environmental health of clients, and (7)
professional opinions about the need to train and educate social work students and professionals on environmental health. This study asserts that social workers can protect the environmental health of distressed communities across the micro-macro spectrum.
A STUDY OF SOCIAL WORKERS KNOWLEDGE OF ENVIRONMENTAL LIVING CONDITIONS AND HEALTH DISPARTIES

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CHAPTER I

INTRODUCTION

Hazards that exist in the physical environment are responsible for a multitude of health disparities. Environmental hazards can be found in many communities. However, a disproportionate burden of environmental hazards is present in minority and low income communities. These communities are disproportionately victimized by environmental burdens. Social work is a profession that can aid in this dilemma. Environmental health knowledge in social work practice can prepare practitioners to confront environmental hazards imposed on minority and low income communities.

This study was performed to assess the environmental health knowledge of licensed social workers. This chapter will offer a concise statement of the problem, present the purpose of the study, highlight research questions and hypotheses, define key terms, and indicate the significance of the study.

Statement of the Problem

According to the United States Census Bureau (2010), 46.2 million people were living in poverty in 2010. Poverty is a chronic and uncontrollable source of stress that is a risk factor for poor health outcomes for disadvantaged populations (Dilworth-Bart & Moore, 2006). Persons living in poverty do not have the luxury of picking and choosing where they want to live; instead their housing options are severely limited. They live in
environments with heavily polluting industries, hazardous waste sites, contaminated water and soil, in old housing with deteriorating lead based paint, adjacent to major roadways where hazardous chemicals are transported in areas with limited access to healthy food and more. People residing in these toxic environments are either at risk or suffer from a myriad of health disparities such as asthma, cancer, elevated blood lead levels, obesity, psychiatric diagnoses, and more (Powell & Stewart, 2001).

The poor tend to live and work in the least desirable neighborhoods, which are characterized by older housing stock and in close proximity to sources of environmental risk such as highways, dumps, and heavy industry (Grant Makers for Health, 2007). Economically disadvantaged persons, including people of color, prioritize finding a place to live and work and ignore the health implications caused by their environments (Cureton, 2011). In essence, the environment is a significant determinant of physical and mental health for all persons, especially minority and low income groups.

According to Skwiot (2008), the impact of environmental exposure and health has received little attention from social workers. Skwiot (2008) further asserts that there is too much of a divide between environmental and social issues. Lee Nguyen of the Environmental Social Work Initiative at the Brown School of Social Work, asserts the following “it is incomplete to think about helping people without addressing the environmental crises” (Skwiot, 2008). There is a demonstrated need for social workers to play an active role in protecting the health of vulnerable communities. Social work is deemed as a discipline that seeks to improve the quality of life for individuals, families,
and communities. Therefore, social workers are in a unique position to help persons that are victims of environmental hazards.

Purpose of the Study

The purpose of the study is to examine environmental health awareness among social workers in South Eastern states (Arkansas, Kentucky, North Carolina, South Carolina, Louisiana, Mississippi, Alabama, Georgia, and Florida). The study provides insight into the landscape of environmental health among social workers and how it can be infused into various aspects of social work practice.

Research Questions and Hypotheses

Q1. Is there a relationship between social workers years of experience and their awareness of environmental health issues facing their clients?

H1. There is a statistically significant relationship between social workers years of experience and their awareness of environmental health issues facing their clients.

Q2. Is there a relationship between social workers awareness of environmental health and their likelihood of gathering present environmental exposure information from clients?

H2. There is a statistically significant relationship between social workers awareness of environmental health and their likelihood of gathering present environmental exposure information from clients.
Q3. Is there a relationship between social workers race and their familiarity with the Emergency Planning and Community Right to Know Act?

H3. There is a statistically significant relationship between social workers race and their familiarity with the Emergency Planning and Community Right to Act.

Definition of Key Terms

Health- The World Health Organization (WHO) declares health as “a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity” (Veitch, 2008).

Environmental Health- “Environmental health comprises of those aspects of human health, including quality of life, that are determined by physical, chemical, biological, social, and psychosocial factors in the environment”. It also includes controlling and preventing factors in the environment that can potentially affect the health of future generations (Unknown Author, 2006).

Environmental Hazards- Environmental hazards recognize that persons come into contact with harmful factors in their physical environments.

Environmental Health Disparities- Environmental health disparities are defined as the inequities in morbidity and mortality between social groups (e.g., racial/ethnic minorities and low-income populations) due to environmental factors. Additionally, environmental health disparities are the result of not only environmental factors but social forces as well (Unknown Author, 2006).
Environmental Injustice- Environmental injustice recognizes that economically disadvantaged groups and people of color are affected by environmental hazards more than other social groups (Bullard, 2005).

Environmental Justice- Environmental justice is “the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation and enforcement of environmental laws, regulations and policies”. Fair treatment insists that no group should bear a disproportionate burden of environmental hazards (Bullard, 2005).

Significance of the Study

The significance of the study is to illustrate that minority and low income groups are impacted by environmental hazards that exist in their communities. The presence of environmental hazards leads to the manifestation of health disparities in minority and low income groups. Environmental health disparities such as cancers, lead poisoning, obesity, and more could be reduced and/or eliminated if safeguards were put in place to ensure that environments are conducive to human growth and well being. Furthermore, this study asserts that action is needed to protect the environmental health of these communities.

This study is important to the social work profession because it will expose environmental injustice issues that threaten the health of the clients and communities that practitioners serve. Additionally, recommendations are proposed that will inform, educate, and motivate social workers to become knowledgeable of environmental health.
There is a connection between the environment and the quandary of the disenfranchised and people of color (Skwiot, 2008). Studies document that minority and oppressed groups bear a disproportionate burden of environmental health hazards and disparities (Cureton, 2011).

This study will explain how social workers can play an active role in protecting communities from environmental injustice. The possession of environmental health knowledge will add another dimension to the aptitude of social workers. Social workers are the moral compass to society. Social workers have the skill in social policy, mental health, statistics and evaluation, and human behavior and the social environment to affect real change on the environmental front. Social workers cannot sit on the sidelines while economically disadvantaged groups and people of color are disproportionately and selectively victimized by environmental crises.
CHAPTER II

REVIEW OF LITERATURE

This chapter is provides a critical evaluation of previous research. This chapter will first explore the historical perspective of environmental justice, environmental living conditions, and devastating environmental events in United States, environmental health disparities, and environmental legislation to provide detailed information on how the physical environment impacts human health. This information will set the tone for the discussion about the necessity of incorporating environmental health knowledge into social work practice. Lastly, the Theoretical Framework and the Afrocentric Perspective will be evaluated.

Historical Perspective of Environmental Justice

The plight of environmental justice is pre dated to the Civil Rights Movement. In 1967, after 11 year old Victor George drowned in a garbage filled pond, black students at Texas Southern University in Houston, Texas protested. This event led to a riotous confrontation with the Houston Police Department (Bebnken, 2007).

Efforts to address environmental concerns were also addressed during key civil rights efforts. For example, Dr. Martin Luther King Jr. led a campaign for better working conditions, including work safety and benefits, for mostly African American sanitation workers. These sanitation workers handled waste which intensified their exposure to
toxic chemicals (Powell & Stewart, 2001). Dr. Martin Luther King Jr. died before he could complete this undertaking.

Another significant event related to environmental justice occurred in 1979 during the landmark case of Bean vs. Southwestern Waste Management, Incorporated. This case prevented a sanitary landfill from entering into an African American community. This case was monumental because it was the first to challenge the siting of a waste facility using civil rights law (Bullard, Johnson, & Torres, 2009). Similarly, in 1982, a protest took place in Warren County, North Carolina because the State proposed a landfill for disposing of polychlorinated biphenyls (PCBs). This was a mostly African American community and the one of the poorest counties in the state (Bullard, 2005). These landmark issues ultimately brought environmental living conditions to the forefront of America’s consciousness.

Environmental Living Conditions

According to Grant Makers for Health (2007), there are millions of people that face some level of environmental risk; however, research has documented that poor and minority communities are disproportionately afflicted by environmental hazards. The United Church of Christ conducted a study and found that of the 9.2 million people living three kilometers from hazardous waste facilities, almost 56% were people of color (Grant Makers for Health, 2007). Research by Wright (2011) highlighted that 40 out of 44 states (90 %) with hazardous waste facilities have disproportionately high percentages of people of color.
According to Pellow (2004), communities of color and low-income neighborhoods are disproportionately burdened with a range of environmental hazards, including polluting industries, landfills, incinerators, and illegal dumping. Pellow (2004) goes on to say that research has supported with case studies and the analyses of census data that contaminated communities exist in areas where people of color and poor persons are the residential majority. The Environmental Protection Agency (EPA) identified 80 studies, that consistently found that minority and low income communities face disproportionate exposure to environmental hazards (Grant Makers for Health, 2007).

Other studies cite that low income and minority communities are burdened with water, noise, and air pollution, inadequate and unhealthy housing, adjacent to major highways where hazardous chemicals are transported, a lack of green space, limited access to healthy foods, and along with other environmental hazards (Centers for Disease Control and Prevention, 2011). The American Housing Survey, conducted by the US Census Bureau in 2009 found that 4.1% of White- non Hispanic, 7.8% of Hispanic, 9% of Black- non Hispanic, 4.6% of Asian/Pacific Islander, and 7.5% of American Indian/Alaska Native lived in inadequate housing (referring to the structure and systems of housing) units. Additionally, this survey revealed that 22.7% of White- non Hispanic, 24.2% of Hispanic, 28.3% of Black- non Hispanic, 17.2% of Asian/Pacific Islander, and 31.9% of American Indian/Alaska Native lived in unhealthy housing (referring to exposure to toxins and other environmental factors in the home) units (Centers for Disease Control and Prevention, 2011).
It is apparent that minority and poor groups inhabit inadequate and unhealthy housing. Furthermore, chronic noise exposure, another environmental health concern has become such a problem that the World Health Organization (WHO) formulated guidelines for urban noise levels (Veitch, 2008). Furthermore, a study conducted at the University of Chicago exposed that low income communities with higher poverty rates and higher proportions of racial and ethnic minorities had the “fewest opportunities for community-level physical activity” due to the lack of green space (American Society of Landscape Architects, 2011). According to Policy Link (2010), poorer communities have fewer supermarkets compared to wealthier communities. There are 23.5 million people that live in “food deserts”, which occurs when individuals do not have access to a supermarket near their homes (Policy Link, 2010). Consequently, persons living in poverty bear a disproportionate burden of harsh environmental living conditions.

Devastating Environmental Events in the United States: A Spotlight on the BP Oil Spill and Hurricane Katrina

Recent devastating events in the United States have depicted that environmental injustice is a public health emergency that will have health implications for decades to come. The BP Oil Spill and Hurricane Katrina remain at the center of environmental debate and thus, warrant a more focused discussion.

BP Oil Spill

On April 20, 2010, the Deep Water Horizon rig exploded on the Gulf Coast resulting in the BP Oil Spill. The BP Oil Spill lasted for 86 days (Kofman, 2010).
Approximately 4.9 million barrels of oil was dispensed from the well, which flooded the water and land (Walsh, 2011). According to Walsh (2011), 45 thousand tons of garbage (solid oil, clean up materials, and other waste) was transported to nine non-hazardous, household garbage landfills in Louisiana, Mississippi, Alabama, and Florida. Five of the nine landfills were located in low income minority communities. Robert Bullard, Director of the Environmental Justice Resource Center at Clark Atlanta University, in Thompson (2011) stated the following in response to this matter, “low-income and minority communities are getting dumped on in a way that is so overwhelming that it should raise eyebrows”. The decision making process which resulted in the selection of landfills in these low income and minority communities raise concerns about environmental justice.

*Hurricane Katrina*

Hurricane Katrina hit New Orleans, Louisiana on August 29, 2005. The levee breech is what ultimately flooded the city. Hurricane Katrina destroyed homes, communities, institutions, and businesses (Bullard & Wright, 2009). In Louisiana alone, 1,464 individuals did not survive (Kamps, 2008). Hurricane Katrina cost over $70 billion in insured damage. According to Bullard and Wright (2009), Hurricane Katrina shed national spotlight on government ineptness, incompetence, gaps in disaster preparedness, and racial discrimination. The damaged areas affected by the storm were “populated by 46% of African Americans compared to 26% African Americans in the rest of the city” (Webb, 2009). The aftermath of Hurricane Katrina created environmental hazards that consisted of air, water and soil pollution, inadequate and unhealthy housing exposures, and more (Bullard & Wright, 2009).
Environmental Health Disparities

Low income and minority communities are subjected to environmental threats. The children in these communities are the most vulnerable of them all (Rosen & Imus, 2007). These children are plagued with environmental hazards and are more susceptible to harm and health disparities than adults. Children are more susceptible because they eat more, drink more, and breathe more in proportion to their actual size, since their bodies are still developing (Environmental Protection Agency, 2010).

Environmental conditions have a clear and direct effect on health (Rubin et al., 2007). Environmental conditions lead to higher rates of mortality, morbidity, and health risks. Minority neighborhoods tend to have higher rates of morbidity, mortality, and poor health outcomes compared to white neighborhoods (Gee & Payne-Sturges, 2004). The correlation of environmental factors and health challenges are dominating. For example, Bullard (2005) asserts that the environment has been linked to causing asthma, cancers, obesity, neurodevelopmental disorders, lead poisoning, and more.

Neurodevelopmental Disorders and Psychiatric Diagnoses

Woodruff et al. (2004) assert that toxic chemicals have been determined to be the cause of neurodevelopment disorders. Cureton (2011) holds that neurodevelopmental and neurobehavioral disorders such as Attention Hyperactivity Disorder (ADHD) and learning disabilities may be caused by environmental contaminants. Research has shown that lead, polychlorinated biphenyls (PCBs), and other environmental contaminants can cause damage to the developing brains of children (Woodruff et al., 2004). Furthermore,
research has linked schizophrenia to toxins in urban environments (Butcher, Mineka, & Hooley, 2010).

*Lead Poisoning*

Studies have shown that exposure to lead increases susceptibility to a range of health and developmental concerns such as ADHD, learning disabilities, and antisocial or delinquent behavior, and at very high levels, seizures, comas, and more (Cureton, 2011, Centers for Disease Control and Prevention, 2011). Furthermore, lead may harm children before they are born (Powell & Stewart, 2001). It is well documented that lead can pass through the placenta (Dilwarth-Bart & Moore, 2006). In the United States, African American and Hispanic low income children who live in old housing, are the most vulnerable populations to suffer from elevated blood lead levels (Rubin et al., 2007). An elevated blood lead level, is defined by a level of $\geq 10$ micrograms per deciliter (µg/dL) but exposure at any level may have adverse effects (Federal Interagency Forum on Child and Family Statistics, 2010).

Adults are harmed by lead exposure as well. Ninety-four percent of adults with elevated blood lead levels are exposed to lead in the workplace. In 2009, more than 7,112 adults across 38 states were reported to have blood lead levels greater than or equal to 25 micrograms per deciliter (mcg/dL) (Washington State Department of Labor and Industries, 2002).

*Respiratory Illnesses*

Research shows that indoor air pollutants such as, pesticides and, nitrogen dioxides play a role in the development of asthma. Air pollutants cause various
respiratory problems including bronchitis, emphysema, and asthma (Cloughtery & Kubzansky, 2009). Studies have also found that chronic exposure to ozone and exposure to inhaled particulate matter may adversely affect lung growth and development (Woodruff, et al., 2004). In 2009, 24.6 million people had asthma in the United States; however the highest rates occurred among females, children, persons of non-Hispanic black and Puerto Rican race, persons with family income below the poverty level, and those residing in the Northeast and Midwest regions (Akinbami, Moorman, Liu, 2011).

Cancer

According to Lichtenstein et al. (2000), genetics only account for 21-42% of the risk for developing the 10 common cancers studied and environmental exposures could account for 58-82% of the risk. The annual incidence of cancer increased from 129 to 166 cases per million between 1975 and 2002. Environmental chemicals have been closely linked to childhood cancer (Rosen & Imus, 2007).

Environmental pollutants have also transferred from mother to child. The Environmental Working Group (2009) reported an average of 200 industrial chemicals found in the umbilical cord blood in nine out of ten babies that were African-American, Asian, and Hispanic descent. Over two hundred of these chemicals are known to cause birth defects and develop cancer. The Environmental Working Group goes on to state these chemicals included tetrabromobisphenol A (TBBPA), which is a toxic flame retardant used in computer circuit boards and perfluorobutanoic acid (PFBA), a chemical used to make textiles products (Environmental Working Group, 2009). Rosen and Imus (2007) confirm that even in utero a child is vulnerable to environmental hazards.
Furthermore, African-Americans have the highest death rate and shortest survival of any racial and ethnic group in the United States for most cancers (American Cancer Society, 2011).

Obesity

Poverty and food insecurity are risk factors for obesity. It is noted that other risk factors play a role in obesity such as bad eating habits and lack of exercise but it is more difficult for this group to adopt positive life style changes when they lack access to healthy food options (Food Research and Action Center, 2009). Approximately 34% of adults are obese in the United States (Centers for Disease Control and Prevention, 2011). The obesity epidemic among this age group has increased from 12.4% in 1998 to 14.5% in 2003 and increased slightly to 14.6% in 2008 (Centers for Disease Control and Prevention, 2010). The rise in childhood obesity is seen in all racial groups and all socioeconomic levels- African-American, Native-American, and Latino-American children have the highest rates (Rosen & Imus, 2007).

Cureton (2011) adapted Figure 1 from the cycle of childhood environmental health disparities developed by Rubin et al. (2007). Figure 1 recognizes that there is a cycle of environmental health disparities. This cycle begins with low income and minority persons facing limited income, education, and employment, these factors then contribute to limited housing options. Available housing options in distressed communities do not promote environmental health. These communities tend to be plagued with heavily polluting industries, contaminated water and soil, and more. Thus,
these factors not only contribute to their environment but compromise their overall health and well-being (Cureton, 2011).

Figure 1

*Cycle of Environmental Health Disparities*

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**Characteristics of People**
- Limited Income
- Limited Education
- Limited Empowerment
- Limited Employment Options

**Risk Factors for Later in Life**
- Poor Health Outcomes
- Depression

**Health Characteristics**
- Respiratory Illnesses
- Cancer
- Obesity

**Health Risk Factors**
- Poor Nutrition
- Inadequate Physical Activity
- Chemical Exposures

**Environmental Risk Factors**
- Inadequate and Unhealthy Housing Options
- Heavily Polluting Industries
- Dump Sites/Landfills
- Contaminated Water and Soil

**Environmental Characteristics**
- Lack of Healthy Food
- Lack of Green Space
- Homes in Disrepair
- Indoor/Outdoor Air Pollution

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**Environmental Legislation**

According to Grant Makers for Health (2007), environmental hazards are often located in or near poor communities because these areas are undesirable, inexpensive, and politically disenfranchised. Hazardous waste facilities follow the path of least resistance, thus releasing toxins on poor communities (Grant Makers for Health, 2007).
Given the correlation between minority and oppressed communities and hazardous toxins released in these areas, legislation has emerged in an effort to protect the health of these groups and society as a whole. A review of critical environmental legislation is presented to highlight these responses.

*Comprehensive Environmental Response, Compensation and Liability Act of 1980*

In 1980 congress passed the Comprehensive Environmental Response, Compensation and Liability Act, which is also known as Superfund. This Act taxes chemical and petroleum industries that release toxins in communities. Funds collected from this tax are stored in a trust that is used to clean up these communities. Additionally, the Act provides congress “a federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment” (Environmental Protection Agency, 2011).

*Emergency Planning and Community Right to Know Act of 1986*

In 1986, congress passed legislation requiring companies and other facilities that use toxic chemicals, to file an inventory of their toxic releases each year. This helps local governments respond in the event of a spill or release. This Act does not control the amount of chemicals that can be used. Additionally, it gives citizens the right to access the environmental exposure data from their communities. Facilities that do not comply with this Act can face civil penalties of up to $25,000 for each day the violation continues and additional criminal penalties. Furthermore, citizens are given the authority to bring civil action against the facility (Environmental Protection Agency, 2010).
Environmental Equal Rights Act of 1993

This Act, passed in 1993, gives "citizens the right to petition to prevent the siting and construction of proposed polluting facilities scheduled to be placed in environmentally disadvantaged communities" (Powell & Stewart, 2001). This allows local citizens to advocate for their own environmental health since they can protest against environmentally hazardous facilities coming into their communities.

Environmental Health Awareness in Social Work Practice

The National Association of Social Workers (NASW), policy on environmental issues asserts that the person-in-environment principle helps social workers understand the impact of environment on the mental and physical health of their clients. This policy calls for social workers to take personal responsibility to protect environment resources (McMain-Park, 1996). In 1999, the National Association of Social Workers (NASW) Delegate Assembly proclaimed that "environmental exploitation violates the principle of social justice and is a direct violation of the NASW Code of Ethics" (Dewane, 2011). In spite of this policy, declarations, and messages put forth at the NASW Delegate Assembly, over 10 years ago, literature connecting social work to environmental hazards, health, and injustice is scarce in the United States.

Social work in the United States has been slow in its response to environmental health issues. Perhaps this is attributed to the lack of knowledge between social issues and the natural environment (Skwiot, 2008). Literature and research on the connection between social work and the environment largely exist in other countries such as Canada.
and Australia (Dewane, 2011). Clearly, social workers in the United States, therefore, are met with the unique challenge of gaining more awareness and knowledge, conducting more research, and taking greater action as environmental issues continue to harm the health and well-being of vulnerable communities. Considering the BP Oil Spill and Hurricane Katrina the exploitation of natural resources and the environment lead to the exploitation of people-directly and indirectly.

As a profession, social work has demonstrated a rich history when it comes to tackling issues of social and economic injustice; however, within the area of environmental justice there is much work to be accomplished (Dewane, 2011). Environmental injustice, as previously indicated destroys the health and well-being of individuals, families, and communities. Similarly, the environment is a significant determinant of health. Toxic chemicals and other hazardous substances in the physical environment threaten the health and mental health of individuals (Soine, 1987). Therefore, “social work must extend the mission to include environmental justice and the human right to live in clean, safe, and healthy environments” (Hawkins, 2010).

The response to environmental injustice among social workers has not been without challenge. Muldoon (2006) asserts that social work has been criticized for providing tools for people to cope with, but not question, oppressive circumstances. The threads linking environmental injustice and social welfare have been exposed. Efforts to improve social work response to environmental injustice are slowly emerging in the literature. Dewane (2011) went a step further in challenging the profession by arguing it is time for the social work profession to take a multifaceted approach to not only examine
person-in-environment but to examine the environment-in-person across the micro-macro spectrum.

At the micro level, the environment-in-person can be examined by social workers paying attention to environmental factors that contribute to the health and well-being of their clients (individuals and families). It is critical that social workers evaluate their clients past and present exposure to environmental hazards because the relationship between mental health and the environment has been documented by the United States Department of Health and Human Services (Soine, 1987). For example, Sione (1987) states that clients suffering from mental health issues should be asked the following environmental questions:

1. Are you confined to a home with lead, mold, or mildew exposure?
2. Do you live or work in areas with high levels of carbon monoxide or any other toxic exposure?
3. Are there any heavily polluting industries in your community? If so, what are they?
4. Do you have access to healthy foods and/or green space in your community?

The answers to these questions will help social workers gain insight of the possible environmental contributing factors to their clients' issues. Clients may not be aware of the connection between their environment and their health. Social workers can educate their clients on environmental exposures and health to raise awareness. Social workers are in the position to treat and manage mental health problems and alleviate environmental exposures.
At the mezzo level, the environment-in-person can be examined by social workers educating communities and groups on environmental health, injustice, and justice. Social workers can start by gathering a consensus of environmental exposures in communities. Community members should be questioned about the coincidence of high numbers in health problems, such as cancers, asthma, still births and miscarriages (Soine, 1987). Since low income and communities of color bear a disproportionate burden of environmental hazards, social workers should advocate for the health of these communities. And in turn teach these communities to question oppressive circumstances, to read and interpret environmental legislation, to use relevant environmental legislation, and to advocate for themselves. Communities should be equipped to fight against environmental injustice (Powell & Stewart, 2001).

The Four Domains of Environmental Justice is a successful tool to help communities question oppressive circumstances, such as environmental injustice. The Four Domains of Environmental Justice was established by the United States Environmental Protection Agency (EPA) Office of Environmental Justice. The first domain consists of knowing the demographics and dynamics of a community. The second domain includes the potential or actual health effects and impacts from hazardous enterprises. Additionally, this domain determines if environmental legislation is being followed in the community. The third domain examines if the community is involved in the decision making process regarding environmental enterprises that enter or remain in the community. This domain also asserts that environmental legislation should be in available accessible formats for the community. The fourth domain identifies the benefits
and burdens of proposed polluting industries entering the community and how it may impact the cultural, social, political, economic, and environmental way of life (Cureton, 2011, Environmental Protection Agency, 2010).

At the macro level, social workers can examine the environment-in-person through research (Hawkins, 2010). Hawkins (2011) recognizes that oppressed people tend to live in degrading environments and have no control over resources. Therefore, there is an emphasis within the profession to address the critical role of the physical environment and environmental justice. Researching environmental problems that affect the health and well-being of clients will increase environmental awareness. Research can then guide environmental legislation to prevent future health risks. Social workers can influence policymakers to revise existing environmental legislation (Dewane, 2011). Additionally, research can be used as a vehicle to ensure environmentally safe housing, the development of green space, ensure community based, urban, and land use planning and environmental education in communities (Cureton, 2011).

At the macro level, social workers can establish community partnerships with businesses and organizations to combat environmental injustice in low income and minority communities (Cureton, 2011). Social workers can be influential in forging alliances with businesses and organizations to help them establish initiatives that make the health of communities a priority. The United States Environmental Protection Agency Office of Environmental Justice developed the Collaborative Problem Solving Model, which encompasses seven key elements to address environmental concerns in communities (Environmental Protection Agency, 2006).
1. Community Vision and Strategic Planning: - Social workers can help the community identify community and environmental issues, think about a shared community vision, and set goals.

2. Community Capacity-Building & Leadership Development: - Social workers can provide resources and skills to interested community residents through education and empowerment. Furthermore, social workers can identify the leaders in the community and help them cultivate new ways of thinking and the ability to lead the community to an environmentally healthy future.

3. Consensus Building & Dispute Resolution: - Social workers and community leaders can ensure that group decisions are made and conflicts get resolved.

4. Multi-Stakeholder Partnerships & Leveraging of Resources: - Social workers and community leaders can establish partnerships with key stakeholders to examine and alleviate environmental problems. The stakeholders can each bring their strengths and resources to the table.

5. Constructive Engagement by Relevant Stakeholders: - Social workers and community leaders can facilitate as relevant stakeholders (the government, businesses, organizations, academic institutions, and others) brainstorm on approaches to help the community achieve desired goals.

6. Sound Management and Implementation: - Social workers and community leaders can manage the development and implementation of solid work plans. The commitments and the responsibilities of each stakeholder are clarified.
7. Evaluation, Lessons Learned & Replication of Best Practices: - Social workers, community leaders, relevant stakeholders, and the community can explore the lessons learned from this process. The strengths and weaknesses are evaluated and positive results are used to move forward (Cureton, 2011, Environmental Protection Agency, 2006).

Lastly, at the macro level social work students and professionals can be educated and trained on the concept of environment-in-person, environmental health, environmental injustice and environmental justice. The profession has failed in incorporating environmental health and justice into social work curriculum. Moreover, courses like Human Behavior and the Social Environment focus on the interrelationships of people within their environment, primarily the social environment; however, the role of the physical environment on human functioning is often neglected (Hawkins, 2010).

Theoretical Framework: Ecological Perspective

The theoretical framework is used to identify existing literature and research that support the findings of this study. Furthermore, the theoretical framework is used to place the findings of this study in perspective with literature displaying similar themes. The theoretical framework chosen for this study is the ecological perspective. An explanation of the ecological perspective is provided to document the role of the environment in minority and low income communities.

The ecological perspective uses a person-in-environment lens to analyze individuals and their multiple environments as an interactive system that simultaneously
affects and is affected by the other (Weiss-Gal, 2008). Schriver (2011) supports this claim stating that the ecological perspective recognizes that people coexist in their environments and do not exist separately from their environments; their environments are a part of who they are. The ecological perspective is the most prevalent approach to understanding the relationship between people and social environments (Kondrat, 2002).

The ecological perspective recognizes that environmental factors can influence human problems but particular attention is paid to the social environment and social systems (Hepworth, Rooney, Dewberry-Rooney, Strom-Gottfried & Larsen, 2010). According to Schriver (2011) the ecological perspective views people as active agents in “interlocking systems” from family, to school, to the government. The way in which this perspective looks at the person in the environment and the social systems that promote and hinder development is important. It is well noted that the social environment and social systems can influence multiple stressors such as poverty, unemployment, homelessness, mental and physical health problems, and more (Schriver, 2011). However, the ecological perspective should not neglect the importance of the physical environment on health and development.

The ecological perspective describes and recognizes the connection between individuals and their environments but does not take into account the necessity of a social, political, and environmental transformation (Schriver, 2011). Environmental injustice and environmental health disparities imposed on low income and minority communities convey that the ecological perspective must include a social, political, and environmental transformation that prioritizes environmental justice. Coates (2003) also
recognizes the need for an ecological perspective paradigm shift in social work practice to address a core theme that environmental injustice results from the same pressures that create social injustice.

Essentially, the ecological perspective is important to social work practice. But the ecological must embrace the environment-in-person principle. Environmental health disparities and injustice is a public health issue and a human rights crisis (Cureton, 2011). To raise environmental health awareness in social work practice, efforts across the micro-macro spectrum must ensure the environmental health of distressed communities. Social workers have to position themselves and tailor their work to make a consistent statement—environmental injustice is not an option. In order to combat environmental injustice, environmental justice demands that social workers improve the world of their clients—both figuratively and literally (Dewane, 2011).

Afrocentric Perspective

The Afrocentric perspective is another theoretical framework to consider because it is rooted in the experience of African Americans. This perspective is a worldview that is grounded in humanistic values, collective responsibility, spirituality, and respect. The Afrocentric perspective rejects the Eurocentric view of the world. A Eurocentric view of the world does not take into account the struggle of the African American experience (Stewart, 2004). The Afrocentric perspective relies on the philosophical concepts and the history of the African American experience and traditional Africa. The Afrocentric perspective has three primary objectives: (1) To promote a social science paradigm that is
more reflective of the cultural and political reality of African Americans, (2) To dispel the negative distortions about people of African ancestry, and (3) To promote a worldview that will facilitate human and societal transformation that can persuade people to share a moral, spiritual, and humanistic mutual interest (Schiele, 1996). This perspective extends its umbrella to not only African Americans but minority and oppressed groups as well.

The social and economic progress of African Americans continues to lag behind White America, in the areas of education, income, and health (Manning, Cornelius, & Okundaye, 2004). Additionally, Grant Makers for Health (2007) assert that African Americans and people of color suffer from toxic environmental exposures. The Afrocentric perspective is important because it recognizes the continuous struggle for African Americans to thrive socially, economically and environmentally. The Afrocentric perspective places emphasis on spirituality, harmony, and the community (Stewart, 2004). Hence, it is a necessity for the physical environment to be included as a tenement of the Afrocentric perspective to restore the spirit and harmony of minority and oppressed communities.
CHAPTER III

METHODOLOGY

This chapter will describe the research design, include a description of the instrumentation, describe the sampling procedures and population, explain the treatment of data, and discuss the limitations of the study.

Research Design

A descriptive research design was employed to examine social workers knowledge of environmental health. Descriptive research allowed the researcher to assess, analyze, and review quantitative and qualitative data from social workers to determine their level of environmental health awareness and knowledge and to observe trends in environmental concerns received by social workers from their clients.

Instrumentation

The concept of the survey was derived from the Survey on Child Environmental Health Awareness of Health Care Professionals (World Health Organization, 2011). The researcher developed a 31 question survey, with five sections- (1) Demographic Profile, (2) Knowledge of Environmental Health, (3) Professional Experience, (4) Actions and Priorities, and (5) Training.

Section one (Demographic Profile) solicits questions concerning participants
background. Questions included demographic information including age, gender, race, educational level, income, years in social work profession, and social work practice areas.

Section two (Knowledge of Environmental Health) questioned the social workers knowledge of environmental pollutants and environmental health. This section retrieved responses about the amount of information possessed on environmental health, how environmental health information was obtained, and familiarity with environmental issues, human exposure to environmental pollutants, and environmental legislation.

Section three (Professional Experience) consisted of questions and statements about the social workers environmental health experiences in their professional practice. The social workers were asked about the collection of environmental health data from clients, environmental concerns received from clients, and client environmental exposure locations.

Section four (Actions and Priorities) assessed the actions and priorities of social workers in environmental health. More specifically, the questions in this section asked about environmental advocacy and encouraging clients to exercise their environmental rights.

Section five (Training) focused on the training and education of social work students and social workers. This section asked the social workers to determine if social work students and professionals should be trained and educated on environmental health.

Once the survey was developed, it was pilot tested among nine professionals. These professionals are highly skilled in social work, public health, and/or environmental health. The survey was pilot tested by five faculty members at the Clark Atlanta
University, two faculty members at the Morehouse School of Medicine, one faculty member at Eastern Kentucky University, and one faculty member at the University of Medicine and Dentistry of New Jersey. They evaluated the format, functionality, ease of use, language, verbiage, length, and the errors of the survey. Additionally, the survey went through a review process with the Clark Atlanta University Institutional Review Board. After the final version of the survey was complete, the instrument and administration methods were approved by the Clark Atlanta University Institutional Review Board.

After approval from the Institutional Review Board, the survey was converted into an electronic format and uploaded into a web based system known as Qualtrics. This secured system facilitated the online response process. Qualtrics is a research software company that allows users to develop and administer web based surveys and perform statistical analyses. Qualtrics is widely used across disciplines, especially social sciences. The survey used skip logic, which prompted the social workers to skip to the next question, depending on their answer to the previous question. After the survey was built in Qualtrics, it was reviewed a second time in consultation with Clark Atlanta University faculty members.

Sampling Procedures and Population

A convenience sample of 90 licensed social workers was recruited for this study. The social workers reside in the following southeastern states- Arkansas, Kentucky, North Carolina, South Carolina, Louisiana, Mississippi, Alabama, Georgia, and Florida. The 90 social workers were selected from the therapist finder databases on the Help Pro
Finder and Psychology Today websites. Help Pro Finder and Psychology Today consist of databases of mental health practitioners, including licensed social workers across the United States. Social workers were also selected from Schools of Social Work across the southeastern states and social service agencies in Georgia.

In November 2011, approximately 600 surveys were sent out to social workers. Survey completion reminders were sent to social workers once a month in December 2011 and January 2012. In February 2012, an additional 50 surveys were sent to African American social workers to record a greater response among this population.

Treatment of Data

The quantitative and qualitative data obtained from the survey was coded by Qualtrics and the Statistical Package for Social Sciences (SPSS) software program. Descriptive statistics were used, including frequency distribution. Cross tabulations was used to show the relationship between the social workers years of experience, awareness of environmental pollutants and illness, screening clients for present environmental exposure, and familiarity with the Emergency Planning and Community Right to Know Act. The qualitative data received about client reports of environmental exposure was categorized by the trends in responses. The researcher presents and describes relevant quantitative and qualitative data in concise text and understandable tables.

Limitations of the Study

There are several limitations to the study (1) the convenience sampling used does not reflect an accurate representation of licensed social workers in the Southeast, (2) the
sample size of 90 might not be large enough to capture significant data, and (3) the lack of diversity among the social workers may affect the knowledge of and experience related to environmental health awareness.
CHAPTER IV

PRESENTATION OF FINDINGS

This chapter is designed to present the findings of the study using descriptive analysis. It presents the results of the demographic profile, statistical analysis of the quantitative and qualitative data, and the research questions and hypotheses.

Demographic Profile

Table 1 illustrates the demographic profile of the 90 licensed social workers surveyed in this study. The demographic profile consists of the following variables- age group, gender, race, highest level of education, income, years of experience, and licensure. Twenty-seven percent of the social workers surveyed were 50-59 years of age. Over half of the social workers were females (78%) and were males (22%). This is consistent with a previous study that found that women accounted for 81% of licensed social workers in the United States (University of Alabama & National Association of Social Workers, 2006).

The majority of the social workers that completed the survey were White (73%) licensed clinical social workers that have been practicing social work for 25+ years (38%). More than half (79%) of the social workers that responded to the survey expressed that their highest level of education was a Masters in Social Work (MSW).
In regards to income, 30% of the social workers reported a yearly income of $60,000-$79,000.

Table 1

*Demographic Profile of the Social Workers (N=90)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age Group</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30-39 years of age</td>
<td>17</td>
<td>19%</td>
</tr>
<tr>
<td>40-49 years of age</td>
<td>21</td>
<td>23%</td>
</tr>
<tr>
<td>50-59 years of age</td>
<td>24</td>
<td>27%</td>
</tr>
<tr>
<td>60-69 years of age</td>
<td>20</td>
<td>22%</td>
</tr>
<tr>
<td>70+ years of age</td>
<td>8</td>
<td>9%</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>70</td>
<td>78%</td>
</tr>
<tr>
<td>Male</td>
<td>20</td>
<td>22%</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black or African-American</td>
<td>21</td>
<td>23%</td>
</tr>
<tr>
<td>White or Caucasian</td>
<td>66</td>
<td>73%</td>
</tr>
<tr>
<td>American Indian or Alaskan Native</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>2%</td>
</tr>
<tr>
<td><strong>Highest Level of Education</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Masters (MSW)</td>
<td>71</td>
<td>79%</td>
</tr>
<tr>
<td>Doctorate (DSW/PhD)</td>
<td>17</td>
<td>19%</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>2%</td>
</tr>
<tr>
<td><strong>Income</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under $20,000</td>
<td>3</td>
<td>3%</td>
</tr>
<tr>
<td>$20,000 - $39,000</td>
<td>11</td>
<td>12%</td>
</tr>
<tr>
<td>$40,000 - $59,000</td>
<td>24</td>
<td>27%</td>
</tr>
</tbody>
</table>
Table 1 Continued

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>$60,000 - $79,000</td>
<td>27</td>
<td>30%</td>
</tr>
<tr>
<td>$80,000 - $99,000</td>
<td>15</td>
<td>17%</td>
</tr>
<tr>
<td>$100,000+</td>
<td>10</td>
<td>11%</td>
</tr>
</tbody>
</table>

Years of Experience
- Less than 5 years: 1 (1%)
- 5-9 years: 9 (13%)
- 10-14 years: 13 (18%)
- 15-19 years: 12 (17%)
- 20-24 years: 10 (14%)
- 25+ years: 27 (38%)

Licensure
- Licensed Master Social Worker (LMSW): 1 (1%)
- Licensed Clinical Social Worker (LCSW): 64 (89%)
- Licensed Certified Social Worker (LCSW): 6 (8%)

Statistical Analysis of the Quantitative and Qualitative Data

Table 2 depicts the results of the amount of information possessed by social workers on the effects of environmental pollutants on health. The majority of the social workers surveyed (58%) possessed some information on the effects of environmental pollutants on health. This conveys that the social workers surveyed knew about the harmful effects of the environment on health.
Table 2

*Information possessed on the effects of environmental pollutants on health*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>A lot of information</td>
<td>18</td>
<td>20%</td>
</tr>
<tr>
<td>Some information</td>
<td>52</td>
<td>58%</td>
</tr>
<tr>
<td>Little Information</td>
<td>20</td>
<td>22%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>90</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Table 3 highlights the social workers familiarity with environmental issues. Across the board, social workers were somewhat familiar with indoor air pollution (53%), outdoor air pollution (61%), waste disposal (57%), water pollution (58%), industrial pollutants (52%), pesticides (57%), noise pollution (60%), soil pollution (49%), lack of green space (53%), and lack of access to healthy foods (54%).
Table 3

*Familiarity with environmental issues*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Very Familiar</th>
<th>Somewhat Familiar</th>
<th>Not Familiar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indoor Air Pollution</td>
<td>33%</td>
<td>53%</td>
<td>13%</td>
</tr>
<tr>
<td>Outdoor Air Pollution</td>
<td>34%</td>
<td>61%</td>
<td>4%</td>
</tr>
<tr>
<td>Waste Disposal</td>
<td>24%</td>
<td>57%</td>
<td>19%</td>
</tr>
<tr>
<td>Water Pollution</td>
<td>31%</td>
<td>58%</td>
<td>11%</td>
</tr>
<tr>
<td>Industrial Pollutants</td>
<td>23%</td>
<td>52%</td>
<td>24%</td>
</tr>
<tr>
<td>Pesticides</td>
<td>31%</td>
<td>57%</td>
<td>12%</td>
</tr>
<tr>
<td>Noise Pollution</td>
<td>22%</td>
<td>60%</td>
<td>18%</td>
</tr>
<tr>
<td>Soil Pollution</td>
<td>21%</td>
<td>49%</td>
<td>30%</td>
</tr>
<tr>
<td>Lack of Green Space</td>
<td>23%</td>
<td>53%</td>
<td>23%</td>
</tr>
<tr>
<td>Lack of Access to Healthy Foods</td>
<td>44%</td>
<td>54%</td>
<td>4%</td>
</tr>
</tbody>
</table>

Table 4 displays the results of the social workers determining if health problems are associated with human exposure to environmental pollutants. The variable respiratory illnesses revealed that 55% of the social workers strongly agreed that this health problem is associated with human exposure to environmental pollutants. This is consistent with
the findings cited in Chapter two of this study. The majority of social workers selected that they agree with the following variables: premature births (43%), learning disabilities (44%), neurological problems (50%), nutritional problems (42%), and genetic malformations (49%). Over half of the social workers (58%) strongly agreed with the association between cancer and environmental exposure. The poisoning variable shows that 44% of social workers strongly agreed and agreed to its effect on health. The majority of social workers (33%) indicated that they were not sure if obesity was associated with the ills of the environment. Perhaps the social workers were not sure because there are several risk factors for obesity, such as poor diet and lack of exercise. However, if the environment does not promote healthy lifestyles through green space, parks, and healthy food, then these too become risk factors for obesity. Lastly, 39% of social workers indicated that they were not sure if psychiatric diagnoses have an association with environmental exposure. While it is well documented that persons can be predisposed to psychiatric diagnoses, the environment can also act as a trigger for the onset of these diagnoses (Butcher, Mineka, & Hooley, 2010).
Table 4

*There is an association between health problems and exposure to environmental pollutants*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Not Sure</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respiratory Illnesses</td>
<td>3%</td>
<td>0%</td>
<td>0%</td>
<td>41%</td>
<td>55%</td>
</tr>
<tr>
<td>Premature Births</td>
<td>2%</td>
<td>3%</td>
<td>21%</td>
<td>43%</td>
<td>30%</td>
</tr>
<tr>
<td>Learning Disabilities</td>
<td>2%</td>
<td>3%</td>
<td>31%</td>
<td>44%</td>
<td>19%</td>
</tr>
<tr>
<td>Neurological Problems</td>
<td>2%</td>
<td>1%</td>
<td>17%</td>
<td>50%</td>
<td>30%</td>
</tr>
<tr>
<td>Cancers</td>
<td>2%</td>
<td>1%</td>
<td>2%</td>
<td>37%</td>
<td>58%</td>
</tr>
<tr>
<td>Poisoning</td>
<td>2%</td>
<td>1%</td>
<td>8%</td>
<td>44%</td>
<td>44%</td>
</tr>
<tr>
<td>Nutritional Problems</td>
<td>6%</td>
<td>0%</td>
<td>16%</td>
<td>42%</td>
<td>36%</td>
</tr>
<tr>
<td>Obesity</td>
<td>7%</td>
<td>16%</td>
<td>33%</td>
<td>26%</td>
<td>19%</td>
</tr>
<tr>
<td>Psychiatric Diagnoses</td>
<td>4%</td>
<td>12%</td>
<td>39%</td>
<td>33%</td>
<td>11%</td>
</tr>
<tr>
<td>Genetic Malformations</td>
<td>3%</td>
<td>4%</td>
<td>13%</td>
<td>49%</td>
<td>30%</td>
</tr>
</tbody>
</table>
Table 5 reveals that 47% of the social workers were somewhat aware of the association between environmental pollutants and illness. The results depicted in this table are similar to the results in Table 2. The social workers surveyed have information and awareness on the effects of environmental pollutants on health.

Table 5

*Awareness of association between environmental pollutants and illness*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very aware</td>
<td>27</td>
<td>30%</td>
</tr>
<tr>
<td>Somewhat aware</td>
<td>42</td>
<td>47%</td>
</tr>
<tr>
<td>A little aware</td>
<td>18</td>
<td>20%</td>
</tr>
<tr>
<td>Not aware</td>
<td>3</td>
<td>3%</td>
</tr>
<tr>
<td>Total</td>
<td>90</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 6 depicts social workers familiarity with environmental legislation. Collectively, social workers were not familiar with the Comprehensive Environmental Response, Compensation, and Liability Act (73%), the Emergency Planning and Community Right to Know Act (58%), and the Environmental Equal Rights Act (59%). The three aforementioned Acts provide information on toxic releases in communities, calls for emergency planning, gives the community the right to know about toxic exposure, and gives communities the right to petition toxic industries from entering into their communities. Social workers cannot adequately prepare their clients to confront environmental challenges if they do not know the law.
Table 6

*Familiarity with environmental legislation*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Very Familiar</th>
<th>Somewhat Familiar</th>
<th>Not Familiar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (1980)</td>
<td>3%</td>
<td>23%</td>
<td>73%</td>
</tr>
<tr>
<td>Emergency Planning and Community Right to Know Act (1986)</td>
<td>9%</td>
<td>33%</td>
<td>58%</td>
</tr>
<tr>
<td>Environmental Equal Rights Act (1993)</td>
<td>13%</td>
<td>28%</td>
<td>59%</td>
</tr>
</tbody>
</table>

Table 7 exhibits data about social workers collecting *past* environmental exposure information from their clients when conducting interviews or assessments. It was revealed that 48% of social workers never ask their clients about past exposure to environmental pollutants. The connection between the environment and health makes a distinct argument that social workers need to gather past environmental information from their clients.
Table 7

Screening clients for past exposure to environmental pollutants

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always</td>
<td>2</td>
<td>2%</td>
</tr>
<tr>
<td>Frequently</td>
<td>7</td>
<td>8%</td>
</tr>
<tr>
<td>Occasionally</td>
<td>38</td>
<td>42%</td>
</tr>
<tr>
<td>Never</td>
<td>43</td>
<td>48%</td>
</tr>
<tr>
<td>Total</td>
<td>90</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 8 documents if social workers collect present environmental exposure information from their clients when conducting interviews or assessments. Forty-three percent of social workers occasionally ask their clients about present exposure to environmental pollutants and 42% never ask their clients about present environmental exposure. This needs to be a frequent practice among social workers. Social workers should always ask clients about their present exposure to environmental pollutants because this may provide insight into their current mental and/or physical health deficiencies.
Table 8

*Screening clients for present exposure to environmental pollutants*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always</td>
<td>4</td>
<td>4%</td>
</tr>
<tr>
<td>Frequently</td>
<td>9</td>
<td>10%</td>
</tr>
<tr>
<td>Occasionally</td>
<td>39</td>
<td>43%</td>
</tr>
<tr>
<td>Never</td>
<td>38</td>
<td>42%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>90</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Table 9 illustrates that 56% of the social workers surveyed occasionally receive environmental concerns from their clients. Seven percent of social workers frequently receive environmental concerns from their clients. Lastly, 38% of social workers never receive environmental concerns from their clients.

Table 9

*Receive concerns from clients about environmental issues*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Frequently</td>
<td>6</td>
<td>7%</td>
</tr>
<tr>
<td>Occasionally</td>
<td>50</td>
<td>56%</td>
</tr>
<tr>
<td>Never</td>
<td>34</td>
<td>38%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>90</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Table 10 documents the environmental concerns that the surveyed social workers received from their clients. The social workers received the 29 concerns about chemical
exposure. Two social workers documented receiving complaints from military personnel and veterans about exposure to Agent Orange and other chemicals. There were 18 concerns about health problems- asthma, allergies, cancer, and toxin exposure in utero. There were 18 concerns about air pollution- smoke and air quality. The social workers recorded 15 concerns about housing quality; they received complaints about Chinese dry wall, mold and mildew. Nine concerns about water pollution were documented. Nine concerns were received by the social workers regarding healthy food access and food safety. There were four environmental concerns about noise pollution and devastating events in the United States. The social workers documented receiving concerns about the health effects of the BP Oil Spill and environmental issues pre and post Hurricane Katrina in New Orleans. There were three concerns about mental health issues. The concerns received from clients show that their health and well-being is being tainted by the environment. Social workers must intervene in these environmental crises.

Table 10

Social workers reports of environmental concerns received from their clients

<table>
<thead>
<tr>
<th>Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical Exposures (cited 29 times)</td>
</tr>
<tr>
<td>Military personnel exposed to agent orange and other chemicals</td>
</tr>
<tr>
<td>Veterans and their exposure to chemical war</td>
</tr>
<tr>
<td>Concerns regarding odors, dirty bathrooms</td>
</tr>
<tr>
<td>We have pulp mills around the immediate area which spew out toxins</td>
</tr>
<tr>
<td>Artists exposure to toxics in their work with paint and materials</td>
</tr>
<tr>
<td>Additives in diet, glue used in carpeting trailers constructed using toxic substances</td>
</tr>
<tr>
<td>Trailers constructed using toxic substances</td>
</tr>
<tr>
<td>Concerns about exposure to natural and manmade pollutants</td>
</tr>
</tbody>
</table>
Table 10 Continued

<table>
<thead>
<tr>
<th>Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asbestos poisoning</td>
</tr>
<tr>
<td>Plant discharges of noxious fumes and particulates</td>
</tr>
<tr>
<td>Exposure to chemicals and such on the job</td>
</tr>
<tr>
<td>Surface mining run off</td>
</tr>
<tr>
<td>Chemical exposure</td>
</tr>
<tr>
<td>Chemical sensitivity questions</td>
</tr>
<tr>
<td>Asbestos exposure</td>
</tr>
<tr>
<td>Chemical exposure in occupational setting</td>
</tr>
<tr>
<td>One client thought that pesticide residue in the soil caused her dog's cancer</td>
</tr>
<tr>
<td>Pesticides</td>
</tr>
<tr>
<td>Some clients are sensitive to cleaning products but have no access to products they would not be sensitive to</td>
</tr>
<tr>
<td>Prescription drug complaints</td>
</tr>
<tr>
<td>Predominately it has been about lead</td>
</tr>
<tr>
<td>Children that have been exposed to lead paint</td>
</tr>
<tr>
<td>Lead poisoning</td>
</tr>
<tr>
<td>Lead paint is some housing apartments</td>
</tr>
<tr>
<td>Internationally adopted children who have been exposed to lead based paint</td>
</tr>
<tr>
<td>Pesticides on food</td>
</tr>
<tr>
<td>Concerns from pesticides</td>
</tr>
<tr>
<td>Exposure to pesticides</td>
</tr>
<tr>
<td>I have heard concerns about exposure to chemicals at jobs when younger</td>
</tr>
</tbody>
</table>

Health Concerns (cited 18 times)

- Asthma
  - Asthma conditions in their home and community caused by triggers
  - Asthma from poor air quality
  - Allergies
  - When clients have health issues the subject comes up- especially about allergies and autism
  - Fears related to environment and their children's health
  - Asthma
  - Toxins in utero
  - I work with some clients who have cancer, so some of them have described a concern regarding causation of their cancer
  - High rates of fibromyalgia
  - Multiple chronic exposure to toxic substances resulting in severe allergic disorders
Table 10 Continued

<table>
<thead>
<tr>
<th>Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allergies from pollutants such as smoke</td>
</tr>
<tr>
<td>Asthma</td>
</tr>
<tr>
<td>Respiratory problems</td>
</tr>
<tr>
<td>Food allergies</td>
</tr>
<tr>
<td>Cancer</td>
</tr>
<tr>
<td>External allergies</td>
</tr>
<tr>
<td>Concerns about weight gain</td>
</tr>
</tbody>
</table>

Air Pollution (cited 18 times)
- Atlanta air pollution
  - Predominately it has been about air quality
  - Smoke in the atmosphere from oil companies near by
  - Exposure of children to second hand cigarette smoke
  - Heat - leads to poor air quality
  - Air quality
  - Predominately it has been about lead or air quality
  - Breathing issues from cleaning products
  - Exposure to smoking
  - Health related concerns about air pollution
  - Cigarette Smoke
  - Smoking
  - Tobacco exposure
  - Smoking
  - Second hand smoke
  - Domestic adoption-concerns about effects of second hand smoke
  - Clients are concerned about the air they breathe and it contributing to their allergies
  - Air pollution

Inadequate/Unhealthy Housing (cited 15 times)
- Unsafe living environments (i.e. - mold, mildew, insect infestation) resulting from landlord refusal to clean up apartments - this can cause respiratory issues such as asthma and other health issues may be triggered
- Concerns often raised are from clients in less than standard housing environment, including homeless
- Sanitary living conditions
- Chinese wall boards
- Chinese dry wall
Table 10 Continued

<table>
<thead>
<tr>
<th>Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure to pollutants in neighborhood</td>
</tr>
<tr>
<td>Types of building they have lived in and their exposure</td>
</tr>
<tr>
<td>Mold and mildew in buildings</td>
</tr>
<tr>
<td>Black mold</td>
</tr>
<tr>
<td>Families living in homes and/or apartments with mold and mildew</td>
</tr>
<tr>
<td>The mold was so bad mushrooms were growing in the apartment</td>
</tr>
<tr>
<td>Mold contamination</td>
</tr>
<tr>
<td>Mold</td>
</tr>
<tr>
<td>Concerns about exposure to mold</td>
</tr>
<tr>
<td>Molds in houses</td>
</tr>
</tbody>
</table>

**Water Pollution (cited 9 times)**
- Concerns about toxic pollution in the Savannah river
- They have been concerned about phosphates and other chemicals being present in their water
- Implications of contaminants in the drinking water
- Some of my clients live in the Rural North Georgia and indicate concerns regarding exposure to pollutants in their water
- Water safety
- River ways being polluted
- Polluted drinking water in poor neighborhoods
- Water pollution
- Concerns about pollutants in the water

**Healthy Food Access and Food Safety (cited 9 times)**
- Limited access to healthy food options in neighborhoods
- Low income clients are concerned regarding inability to locate or afford healthy fruits and vegetables
- Lack of economically affordable fresh organic produce
- Lack of nutritious affordable food
- Lack of access to quality food
- Lack of access to adequate food
- Limited ability of wholesome and organic foods
- Some clients in assisted living and senior residences are aware of the poor quality of food they receive
- Food Safety
Table 10 Continued

<table>
<thead>
<tr>
<th>Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Noise Pollution (cited 4 times)</td>
</tr>
<tr>
<td>Noise</td>
</tr>
<tr>
<td>Noise pollution</td>
</tr>
<tr>
<td>Noise pollution</td>
</tr>
<tr>
<td>Concerns about noise pollution</td>
</tr>
</tbody>
</table>

| Devastating Events in the United States (cited 4 times) |
| Concerns about effects of oil spills, flood damage, and resulting environmental pollution on personal and family health and welfare |
| Most recently concerns about the BP oil spill in the Gulf. I have spoken with clients whose families were exposed to environmental toxins locally and developed conditions such as mesothelioma. This condition and other respiratory ailments as well as cancers are suspected to stem from the local industries such as oil refineries along the river and shipbuilding |
| I live in post-Katrina New Orleans. We are full of environmental health issues, many of which existed before the storm, and then those horrific effects from it, and it arises in my practice frequently. Sometimes I find I am more aware than the physicians involved in my cases |
| Oil in water from recent oil spill |

| Mental Health Concerns (cited 3 times) |
| Issues about prenatal exposure on a child's behaviors/mental health issues |
| I have had one client raise issues about the environment and its effects on his mental health |
| Multiple chronic exposure to toxic substances resulting in anxiety |

| Other Concerns (cited 5 times) |
| Some issues are discussed if a client state there is an exposure and it is a problem |
| Limited information about toxic environments |
| Limited options to safe, healthy environments |
| Some feel that they are being poisoned, that the environment is toxic |
| Clients have also expressed their thoughts about sun rays and the ozone layers |

The 90 licensed social workers surveyed were asked questions about the environmental health actions employed when working with clients in vulnerable
communities. Thirty-six percent of the social workers expressed that they advocate for the environmental health of their clients and 31% expressed that they do not. Fifty-four percent of social workers indicated that they encourage their clients to exercise their environmental rights. It is important for social workers to advocate and encourage their clients to exercise their environmental rights; this will alleviate the disproportionate burden of environmental ills and health disparities imposed on distressed communities.

Table 11 depicts that 68% of the social workers surveyed agree that students would benefit from environmental health education. The environmental health training of social work students will equip them to fight against environmental injustice and will generate a new approach to protecting the health and development of individuals, families, and communities.

Table 11

*Social work students would benefit from environmental health education*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>4</td>
<td>4%</td>
</tr>
<tr>
<td>Disagree</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Not Sure</td>
<td>6</td>
<td>7%</td>
</tr>
<tr>
<td>Agree</td>
<td>61</td>
<td>68%</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>19</td>
<td>21%</td>
</tr>
<tr>
<td>Total</td>
<td>90</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 12 depicts that 64% of the social workers agree that social work professionals would benefit from training on environmental health awareness. Social
workers having knowledge of the impact of the environment on health can transcend to extraordinary work across the micro-macro continuum.

Table 12

*A need to train social workers on environmental health awareness*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>5</td>
<td>5%</td>
</tr>
<tr>
<td>Disagree</td>
<td>3</td>
<td>3%</td>
</tr>
<tr>
<td>Not Sure</td>
<td>8</td>
<td>9%</td>
</tr>
<tr>
<td>Agree</td>
<td>58</td>
<td>64%</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>16</td>
<td>18%</td>
</tr>
<tr>
<td>Total</td>
<td>90</td>
<td>100%</td>
</tr>
</tbody>
</table>

Research Questions and Hypotheses

Q1. Is there a relationship between social workers years of experience and their awareness of environmental health issues facing their clients?

H1. There is a statistically significant relationship between social workers years of experience and their awareness of environmental health issues facing their clients.

As shown in Table 13 the statistical measurement of Chi Square was used to assess the relationship between environmental health awareness and years in the social work profession. In this research question the hypothesis is accepted (P=.032) indicating that there is a statistical significant relationship between the aforementioned variables. The majority (58%) of the 90 social workers with 15-19 years of experience were
somewhat aware of environmental health. Fifty percent of the 90 social workers that had 25+ years of experience were somewhat aware of environmental health.

Table 13

Cross tabulation of awareness of environmental pollutants and illness by years in social work profession

<table>
<thead>
<tr>
<th>Awareness of the association between environmental pollutants and illness</th>
<th>Very Aware</th>
<th>Somewhat Aware</th>
<th>A Little Aware</th>
<th>Not Aware</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Years in social work profession</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 5 years</td>
<td>1%</td>
<td></td>
<td></td>
<td></td>
<td>1%</td>
</tr>
<tr>
<td>5-9 years</td>
<td>22%</td>
<td>33%</td>
<td>44%</td>
<td></td>
<td>100%</td>
</tr>
<tr>
<td>10-14 years</td>
<td>7%</td>
<td>47%</td>
<td>33%</td>
<td>13%</td>
<td>100%</td>
</tr>
<tr>
<td>15-19 years</td>
<td>16%</td>
<td>58%</td>
<td>21%</td>
<td>5%</td>
<td>100%</td>
</tr>
<tr>
<td>20-24 years</td>
<td>36%</td>
<td>36%</td>
<td>29%</td>
<td></td>
<td>100%</td>
</tr>
<tr>
<td>25+ years</td>
<td>47%</td>
<td>50%</td>
<td>3%</td>
<td></td>
<td>100%</td>
</tr>
<tr>
<td>Total</td>
<td>30%</td>
<td>47%</td>
<td>20%</td>
<td>3%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Chi Square .032 df 10

Q2. Is there a relationship between social workers awareness of environmental health and their likelihood of gathering present environmental exposure information from clients?

H2. There is a statistically significant relationship between social workers awareness of environmental health and their likelihood of gathering present environmental exposure information from clients.

As shown in Table 14 the statistical measurement of Chi Square indicates the relationship between screening clients for present environmental exposure and environmental health. In this research question the hypothesis is accepted (P=.006)
indicating that there is a statistical significant relationship between the aforementioned variables. The majority (67%) of the 90 social workers with a little awareness of environmental health never screen clients for present exposure to environmental hazards.

Table 14

*Cross tabulation of screening for present environmental exposure when interviewing clients by environmental health awareness*

<table>
<thead>
<tr>
<th>Screening for present environmental exposure when conducting interviews with clients</th>
<th>Always</th>
<th>Frequently</th>
<th>Occasionally</th>
<th>Never</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Awareness of environmental health</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very Aware</td>
<td>15%</td>
<td>19%</td>
<td>37%</td>
<td>30%</td>
<td>100%</td>
</tr>
<tr>
<td>Somewhat Aware</td>
<td>10%</td>
<td>55%</td>
<td>36%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>A Little Aware</td>
<td>33%</td>
<td>67%</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not Aware</td>
<td>3%</td>
<td>3%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>4%</td>
<td>10%</td>
<td>43%</td>
<td>42%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Chi Square .006 df 9

Q3. Is there a relationship between social workers race and their familiarity with the Emergency Planning and Community Right to Know Act?

H3. There is a statistically significant relationship between social workers race and their familiarity with the Emergency Planning and Community Right to Act.

Table 15 shows the statistical measurement of Chi Square, which displays the relationship between familiarity with the Emergency Planning and Community Right to Know Act and race. In this research question the hypothesis is accepted (P=.024) indicating that there is a statistical significant relationship between the aforementioned
variables. The majority (61%) of the 90 social workers were White and not familiar with the Emergency Planning and Community Right to Know Act.

Table 15

*Cross tabulation of familiarity with the Emergency Planning and Community Right to Know Act by race*

<table>
<thead>
<tr>
<th>Familiarity with the Emergency Planning and Community Right to Know Act</th>
<th>Very Familiar</th>
<th>Somewhat Familiar</th>
<th>Not Familiar</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Race</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black or African American</td>
<td>10%</td>
<td>33%</td>
<td>57%</td>
<td>100%</td>
</tr>
<tr>
<td>White</td>
<td>8%</td>
<td>32%</td>
<td>61%</td>
<td>100%</td>
</tr>
<tr>
<td>American Indian or Alaskan Native</td>
<td>1%</td>
<td>33%</td>
<td>61%</td>
<td>100%</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>9%</td>
<td>33%</td>
<td>58%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Chi Square .024 df 6
CHAPTER V

CONCLUSION, RECOMMENDATIONS AND IMPLICATIONS

The study was designed to assess the environmental health knowledge of 90 licensed social workers. It is the intention of this research to propose recommendations that will inform, educate, and motivate social workers to become knowledgeable of environmental health, environmental injustice, environmental justice, and environmental legislation. This chapter will include conclusions, recommendations from the study, implications for social work practice, and a summary.

Conclusion

This study concluded that social workers (47%) are somewhat aware of the connection between environmental exposure and health. Social workers need to be skilled in environmental health to help low income and minority communities. The study found that the majority of social workers surveyed were somewhat familiar with environmental issues like air pollution, pesticides, water pollution, and lack of access to healthy foods. Most of the social workers surveyed agreed that health problems (respiratory illnesses, cancers, poisoning, and genetic malformations) are associated with environmental pollutants. This is in line with the literature on environmental health disparities provided in Chapter 2.
The study revealed that social workers are not knowledgeable of the following environmental legislation- the Comprehensive Environmental Response, Compensation, and Liability Act (73%), the Emergency Planning and Community Right to Know Act (58%), and Environmental Equal Rights Act (59%). Social workers cannot transform communities that suffer from environmental injustice if they do not know the law. Social workers do not have to be experts on the aforementioned laws but a working knowledge of the laws will give social workers an advantage; an advantage in educating clients, petitioning, advocating, partnering with organizations, and more.

The study found that 48% of social workers never gather information from their clients about past environmental exposure. Obtaining this information is crucial. Clients may be severely impacted by a number of health problems because of where they use to live and/or work. When asked about gathering present environmental exposure information from clients 42% of the social workers stated never. Social workers should always screen for past and present exposure to environmental pollutants during interviews and assessments to get a holistic view of the client.

The study established that 56% of surveyed social workers occasionally receive environmental concerns from their clients. The received information was about the following topics- chemical exposures, health concerns, air pollution, inadequate/unhealthy housing, water pollution, healthy food access and food safety, mental health concerns, noise pollution, the BP Oil Spill and Hurricane Katrina. The environmental concerns received by social workers are disturbing. From veterans being exposed to Agent Orange and other chemicals, to clients concerned about the causation
of their cancer, to polluted rivers, to chronic toxic exposure resulting in anxiety, to the
victims of the BP Oil Spill developing mesothelioma and other respiratory ailments, and
to the environmental health issues pre and post Hurricane Katrina in New Orleans.
Social workers have to take this information seriously and assist in alleviating their
client’s unsatisfactory environmental characteristics.

Thirty-six percent of social workers indicated that they advocate for the
environmental health of their clients. Furthermore, 54% of the social workers encourage
their clients to exercise their environmental rights. This is why it would be beneficial
for social workers to know environmental legislation, so that they can give their clients
accurate information on environmental rights.

The survey determined that social workers see the value in training social work
students and professionals in environmental health. This is an area where social workers
can have significant impact by examining causes and creating solutions to barriers that
exist in the environment (Pelletier, Lavergne, Sharp, 2008).

The research questions of the study revealed the following:

1. There is a statistically significant relationship between social workers years of
   experience and their awareness of environmental health issues facing their
   clients.

2. There is a statistically significant relationship between social workers
   awareness of environmental health and their likelihood of gathering present
   environmental exposure information from clients.
3. There is a statistically significant relationship between social workers' race and their familiarity with the Emergency Planning and Community Right to Act.

Recommendations from the Study

The study recommends that social workers receive education and training on environmental health, environmental health disparities, environmental injustice, environmental justice, and environmental legislation. This will allow social workers to effectively address the environmental crises and protect the health of vulnerable communities. The profession of social work is embodied by a set of core values, which consist of service, social justice, dignity and worth of persons, importance of human relationships, integrity, and competence (National Association of Social Workers, 2012). The environmental health of communities can be improved by social workers considering the environmental implications of each of the core values.

The study recommends that social work students receive environmental education as well. Social work students must be engaged in informed discussions of the universal aspects of human rights and environmental justice to identify sustainable solutions to the very real environmental emergency facing humanity today (Hawkins, 2010). Dewane (2011) emphasizes that social work students are introduced to the person-in-environment paradigm early in social work courses such as human behavior and the social environment, which is strongly recommended by the Council on Social Work Education. However, little can be found about the physical environment in these courses. This study
further recommends that social work coursework and literature exhibit the environmental issues imposed on vulnerable populations.

Ultimately, social work training and education on environmental issues leads to environmental health knowledge. Environmental health knowledge will equip social workers to: (1) assess the environmental needs and concerns of their clients, (2) assist clients with exercising their environmental rights or advocate for the environmental rights of clients, (3) effectively educate communities on the impact of the environment on health and wellness, (4) influence policies that set precedence for environmental health, and (5) establishing a research agenda to inform the public that the environment is a determinant of health. Social workers have the power to spearhead an environmental revolution that prioritizes human health and development.

Implications for Social Work Practice

The environment needs to be infused into every aspect of social work at the micro, mezzo, and macro level (Skwiot, 2008). The implications of this study insist that social workers should (1) examine the concept of environment-in-person, (2) ask their clients questions about environmental factors that may influence health, (3) educate communities on environmental health, incorporating the Four Domains of Environmental Justice put forth by the Environmental Protection Agency, (4) conduct environmental health related research, (5) establish partnerships to combat environmental injustice in low income and minority communities, utilizing the Collaborative Problem Solving Model published by the Environmental Protection Agency, (6) train and educate
themselves and students on environmental concepts, and (7) use the Afrocentric perspective to empower communities to see the environment as a vital component of life to maintain harmony, peace, and spirituality.

The National Association of Social Workers (NASW), the National Association of Black Social Workers (NABSW), and the Council on Social Work Education (CSWE) should raise environmental health awareness. The NASW and NABSW can release articles and statements about environmental issues imposed on populations that can be posted on their websites and in their literature. These organizations are also in a position to establish task forces that can research environmental health. The NASW and NABSW can call for abstracts, publications, and presentations at their conferences that impart knowledge on environmental health. The NASW can create webinars and approve Continuing Education Units (CEUs) that prioritize environmental health. Finally, the CSWE can encourage universities to promote environmental health curricula as well as recommend textbooks that make the connection between the physical environment and health.

Knowledge gained on the complexity of environmental systems, including environmental health, legislation, research, and exposures, can help social workers make significant contributions to disaster preparedness. Social workers can help policy makers and elected officials respond to the needs of communities after disaster strikes (Pelletier, Lavergne, & Sharp, 2008). The government response to the BP Oil Spill and Hurricane Katrina show that an inter-disciplinary approach is needed to help distressed communities. Additionally, social workers that are aware of the connection between the
environment and health can establish effective clinical interventions with populations
directly affected by natural disasters (Pelletier, Lavergne, & Sharp, 2008).

Social workers should also possess knowledge on sustainability. Sustainability
recognizes that lifestyle visions, societal scenarios, behavior change strategies, and that
decision making participation and partnership should be aimed at the enhancement of
environmental quality for human health and wellness (Schmuck & Vlek, 2003, Mary,
2008). Sustainable social work calls for social workers to develop a functional approach
to human interaction with the physical environment (Hoff, 1998). Social workers can use
the following actions to make the environment sustainable for future generations: (1)
minimize the social factors that create environmental injustice, (2) promote land use and
urban planning that protect the environment and health of persons, (3) establish reduce,
reuse, and recycle initiatives, and (4) ensure protection of the earth’s natural resources.

Studies show that environmental hazards can negatively influence health. On the
contrary, the environment can be used as a therapeutic method. “The natural environment
is an unacknowledged mentor” (McMain-Park, 1996). Natural settings can reduce
stressful conditions and improve overall health. Studies found that homes with views of
nature opposed to views of buildings and urban scenes have been associated with greater
resident well-being. Studies also show that children’s cognitive ability and ability to cope
with stressful experiences are improved when they have access to green space near their
homes (Veitch, 2008). Therapeutic interventions employed by wilderness programs help
clients form relationships with the land; connecting with the environment helps the
clients improve their self-esteem, cope more efficiently with life stressors, and increases
their confidence (McMain-Park, 1996). Safe and clean environments free of hazards can be an untapped source of recovery. Social workers should realize the healing potential of the natural environment and incorporate it into their professional practices.

Summary

This study asserts that environmental health awareness is needed in social work practice. The state of environmental health in low income and minority communities is suffering. Coordinated efforts across the micro-macro spectrum in social work practice can protect the health of vulnerable communities. It is unfortunate that socio-economic status, race, and place determine the environmental climate of communities. The commercial, social, and political landscape is connected to the environment (McMain-Park, 1996). Social workers have the competence to intervene in commercial, social, and political environmental dynamics such as, heavily polluting industries, illegal dumping, chemical exposures, air and water pollution, lack of green space, and limited access to healthy foods. Environmental injustice imposed on low income and minority communities require an empathetic and solution focused response from social workers. Environmental and social justice, the ecological perspective, and the Afrocentric perspective should govern the work of social work professionals. Social workers should be mindful that the destruction of the environment can lead to the destruction of individuals, families, and communities, and society as a whole. It is time for social workers to think, act, and initiate change in the environmental health arena.
APPENDIX A

Environmental Health Awareness in Social Work Practice Survey

Thank you for taking the time to complete this survey entitled, Raising Environmental Health Awareness in Social Work Practice.

Consent Form

You are invited to be in a research study about environmental health awareness in social work practice. You were selected as a possible participant because you were identified as a social worker from HelpPRO.com or Psychology Today. This study is being conducted in fulfillment of a thesis requirement at the Whitney M. Young Jr. School of Social Work, Clark Atlanta University in Atlanta Georgia. The purpose of this study is to assess the environmental health awareness among social workers. The survey is anonymous and will take approximately 10 minutes to complete. Read each question carefully and base your responses on your experiences in your professional practice. If you have any questions now, or later, related to the integrity of the Research, you are encouraged to contact Dr. Georgianna Bolden at the Office of Sponsored Programs (404 880-6979) or Dr. Paul I. Musey, (404) 880-6829 at Clark Atlanta University. Press the forward arrow at the bottom of each page to continue to the rest of the survey.

☐ Clicking here indicates that you read and understood the information above and agree to participate in the survey. (1)

The purpose of this survey is to assess the current level of environmental health awareness among social workers in the southeast region of the United States. The survey is anonymous and should take about 10 minutes to complete. Please read each question carefully and select responses based on your experiences in your professional practice. Thank you for your time and cooperation.

Section I: Demographic Information

The following questions are about you and the clients that you serve. Please answer each question.

1. What is your age group?
   ☐ 20-29 years of age (1)
   ☐ 30-39 years of age (2)
   ☐ 40-49 years of age (3)
   ☐ 50-59 years of age (4)
   ☐ 60-69 years of age (5)
1. Are you 70+ years of age? (6)

2. What is your gender?
   - Female (1)
   - Male (2)

3. What is your race? (Check all that apply)
   - Black or African-American (1)
   - White or Caucasian (2)
   - Native American/Pacific Islander (3)
   - American Indian or Alaskan Native (4)
   - Asian (5)
   - Other (Please Specify) (6) __________________________

4. Are you of Latino or Hispanic ethnicity?
   - Yes (1)
   - No (2)

5. What is your highest level of education?
   - Bachelors (BSW) (1)
   - Masters (MSW) (2)
   - Doctorate (DSW/PhD) (3)
   - Other (Please Specify) (4) __________________________

6. What is your income?
   - Under $20,000 (1)
   - $20,000 - $39,000 (2)
   - $40,000 - $49,000 (3)
   - $60,000 - $79,000 (4)
   - $80,000 - $99,000 (5)
   - $100,000+ (6)

7. How many years have you been in the social work profession?
   - Less than 5 years (1)
   - 5-9 years (2)
   - 10-14 years (3)
   - 15-19 years (4)
   - 20-24 years (5)
8. What is your social work practice area? (Check all that apply)

- Health/Mental Health (1)
- Child and Family (2)
- Gerontology (3)
- Community (4)
- Private Practice (5)
- Medical (6)
- Other (Please Specify) (7) ________________

9. How would you best describe your work setting? (Check all that apply)

- Hospital (1)
- Private Practice (2)
- Non Profit Organization (3)
- For Profit organization (4)
- Community Based Organization (5)
- Federal/State Agency (6)
- School (7)
- Other (Please Specify) (8) ________________

10. Which social work license do you possess?

- Licensed Master Social Worker (LMSW) (1)
- Licensed Clinical Social Worker (LCSW) (2)
- Licensed Certified Social Worker (LCSW) (3)
- Licensed Independent Social Worker (LISW) (4)
- None (5)
- Other (Please Specify) (6) ________________

11. What is the age group(s) of your clients? (Check all that apply)

- Under 5 years of age (1)
- 6-12 years of age (2)
- 13-19 years of age (3)
- 20-29 years of age (4)
- 30-39 years of age (5)
- 40-49 years of age (6)
- 50-59 years of age (7)
- 60+ years of age (8)
12. What is the income level of your clients? (Check all that apply)

☐ Under $20,000 (1)
☐ $20,000 - $39,000 (2)
☐ $40,000 - $59,000 (3)
☐ $60,000 - $79,000 (4)
☐ $80,000 - $99,000 (5)
☐ $100,000+ (6)

13. What forms of payment do you accept from your clients? (Check all that apply)

☐ Private Insurance (1)
☐ Payment (check, cash, debit, credit) (2)
☐ Medicaid (3)
☐ Medicare (4)
☐ Pro Bono/Free services (5)
☐ Other (Please Specify) (6) _______________________

14. What zip code(s) do you practice in? (Please list all that apply) After you enter the zip code(s) and press the forward arrow, you may see a prompt that states- there is 1 unanswered question. Please press continue without answering and the forward arrow to move the next question. You may have to repeat this step twice.

Zip Code 1 (1)
Zip Code 2 (2)
Zip Code 3 (3)
Zip Code 4 (4)
Zip Code 5 (5)

Section II: Knowledge of Environmental Health

The following questions are about your knowledge of environmental pollutants and environmental health. Please answer each question.

15. How much information do you know about the effects of environmental pollutants on health?

☐ A lot of information (1)
☐ Some information (2)
☐ Little Information (3)
☐ No information (4)
15a. How did you obtain information on the effects of environmental pollutants on health issues? (Check all that apply)

- Courses (1)
- Workshops (2)
- Journals (3)
- Distance Learning (4)
- Newspapers (5)
- Magazines (6)
- Internet (7)
- Television (8)
- Radio (9)
- Other (Please Specify) (10) ________________
- Not Applicable (11)

16. I am familiar with the following environmental issues.

<table>
<thead>
<tr>
<th>Environmental Issue</th>
<th>Very Familiar (1)</th>
<th>Somewhat Familiar (2)</th>
<th>Not Familiar (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indoor Air Pollution (1)</td>
<td>○</td>
<td></td>
<td>○</td>
</tr>
<tr>
<td>Outdoor Air Pollution (2)</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Waste Disposal (3)</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Water Pollution (4)</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Industrial Pollutants (5)</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Pesticides (6)</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Noise Pollution (7)</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Soil Pollution (8)</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Lack of Green Space (9)</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Lack of Access to Healthy Foods (10)</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>
17. Please rate whether you think the following health problems are associated with human exposure to environmental pollutants.

<table>
<thead>
<tr>
<th>Health Problem</th>
<th>Strongly Disagree (1)</th>
<th>Disagree (2)</th>
<th>Not Sure (3)</th>
<th>Agree (4)</th>
<th>Strongly Agree (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respiratory Illness (1)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Premature Births (2)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Learning Disabilities (3)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Neurological Problems (4)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Cancers (5)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Poisoning (6)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Nutritional Problems (7)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Obesity (8)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Psychiatric Diagnoses (9)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Genetic Malformations (10)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

18. How aware are you of the association between exposure to environmental pollutants and illness?

- Very aware (1)
- Somewhat aware (2)
- A little aware (3)
- Not aware (4)
19. I am familiar with the following environmental protection laws.

<table>
<thead>
<tr>
<th>Law</th>
<th>Very Familiar (1)</th>
<th>Somewhat Familiar (2)</th>
<th>Not Familiar (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clean Air Act (1970)</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Occupational Safety and Health Act (OSHA) (1970)</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Clean Water Act (1972)</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Consumer Product Safety Act (1972)</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (1980)</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Emergency Planning and Community Right to Know Act (1986)</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Pollution Prevention Act (1990)</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Residential Lead-Based Paint Hazard Reduction Act (1992)</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Environmental Equal Rights Act (1993)</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>
Section III: Professional Experience

The following questions and statements are about your professional practices. Please answer each question.

20. When conducting an interview with my clients, I gather information about their past exposure to environmental pollutants?

- Always (1)
- Frequently (2)
- Occasionally (3)
- Never (4)

21. When conducting an interview with my clients, I gather information about their present exposure to environmental pollutants?

- Always (1)
- Frequently (2)
- Occasionally (3)
- Never (4)

22. The exposure to environmental pollutants can affect the health and well-being of my clients.

- Yes (1)
- No (2)
- I don't know (3)

23. I receive concerns from my clients regarding environmental issues.

- Always (1)
- Frequently (2)
- Occasionally (3)
- Never (4)

23a. Please describe the concerns regarding environmental issues that you receive from your clients.
24. My clients report being exposed to environmental pollutants in the following locations. (Check all that apply)

☐ At Home (1)
☐ At Work (2)
☐ At School (3)
☐ Recreational Areas (4)
☐ Other (Please Specify) (5) ______________________
☐ Not Applicable (6)

Section IV: Actions & Priorities

The following questions are about the actions and priorities regarding environmental health on which you may base your practice. Please answer each question.

25. Do you advocate for the environmental health and rights of your clients?

☐ Yes (1)
☐ No (2)
☐ I don't know (3)
☐ Not Applicable (4)

26. Do you encourage your clients to exercise their environmental rights?

☐ Yes (1)
☐ No (2)
☐ I don't know (3)
☐ Not Applicable (4)

27. Do you know of any activities that are being carried out in your state on environmental health?

☐ Yes (1)
☐ No (2)
☐ I don't know (3)
☐ Not Applicable (4)

27a. Please describe the activities that are being carried out in your state on environmental health.
Section V: Training

The following questions are about the training of social work students and professionals in environmental health.

28. Social work students would benefit from environmental health education.
   ○ Strongly Disagree (1)
   ○ Disagree (2)
   ○ Not Sure (3)
   ○ Agree (4)
   ○ Strongly Agree (5)

29. There is a need to train social workers on environmental health awareness.
   ○ Strongly Disagree (1)
   ○ Disagree (2)
   ○ Not Sure (3)
   ○ Agree (4)
   ○ Strongly Agree (5)

30. I would willingly attend training on environmental health issues if Continuing Education Units (CEU’s) were offered.
   ○ Strongly Disagree (1)
   ○ Disagree (2)
   ○ Not Sure (3)
   ○ Agree (4)
   ○ Strongly Agree (5)

31. Are you interested in learning about environmental health, pollutants, or rights?
   ○ Yes (1)
   ○ No (2)
   ○ I don't know (3)

Thank you for taking the time to complete this survey! I am now one step closer to completing my thesis. Please press the forward arrow to submit the survey.
REFERENCES


