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The Influence of Position Type and Generational Grouping on Job Satisfaction of Milwaukee County's Public Health Workforce

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THE INFLUENCE OF POSITION TYPE AND GENERATIONAL
GROUPING ON JOB SATISFACTION OF MILWAUKEE COUNTY'S
PUBLIC HEALTH WORKFORCE

by

Jeanette L. Kowalik, MPH, MCHES

A Dissertation Proposal Submitted in

Partial Fulfillment of the

Requirements for the Degree of

Doctor of Philosophy

In Health Sciences

at

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December 2013

ABSTRACT

THE INFLUENCE OF POSITION TYPE AND GENERATIONAL GROUPING ON JOB SATISFACTION OF MILWAUKEE COUNTY'S PUBLIC HEALTH WORKFORCE

by

Jeanette L. Kowalik, MPH

The University of Wisconsin- Milwaukee, 2013
Under the Supervision of Professor Emeritus Mary K. Madsen

Nationally, the public health workforce (PHW) consists of 155,000 staff (NACCHO, 2010). It is projected that half of the PHW will soon retire. Health departments must find ways to retain its diverse workforce.

Job Satisfaction is a critical variable that impacts a sustained PHW. Job Satisfaction assessments can promote sustainability of the workforce because the data assembled from the assessments can inform research, policy, and practice. Public health workers that report high Job Satisfaction are less likely to quit as well as delay retirement (RWJF, 2013).

The purpose of this study is to examine the influence of position type and generational grouping on Job Satisfaction of the PHW in Milwaukee County, Wisconsin. Two research questions were answered: Does position type and generational grouping influence Job Satisfaction? *Position type* is

categorized into nine distinct roles including Public Health Nursing (PHN) and Health Educators (PHE). *Generational grouping* is categorized into four classes by year of birth.

The self-administered Job Satisfaction Survey (JSS; Spector, 1994) was disseminated via email to all 336 staff employed at various health departments in Milwaukee County; participation was voluntary. Study power was achieved ($n = 145$). The response was 45% and completion was 97%. The JSS included 19 socio-demographic and 36 Job Satisfaction items grouped in nine subscales graded on a six-point Likert scale. Higher scores represent greater Job Satisfaction when compared to the national baseline.

In this study, Job Satisfaction levels varied. When overall Job Satisfaction was assessed by generational grouping, the Milwaukee County PHW sample was more satisfied than the baseline; this was statistically significant. Traditionalists and Generation X were least satisfied compared to Generation Y, which was most satisfied, beyond the baseline.

Overall Job Satisfaction was not statistically significant by position type. Environmental Health Professionals were least satisfied compared to PHE, which reported the greatest satisfaction far beyond the baseline. However, four sub-scales were statistically significant among groups of public health workers. Administrators reported the greatest satisfaction for *contingent rewards, promotion, and operating procedures*. Other

Professional Staff reported the greatest satisfaction for their *coworkers*.

PHNs reported lower satisfaction for *promotion* and *operating procedures*.

DEDICATION

Over the last six years, I have experienced many successes as well as losses. I am dedicating this body of work to my late father, Gilbert A. Kowalik and my grandfather Willie Thompson. Without them I would have not had the strength and work ethic to endure this path. I am also dedicating my research to my son Nassir A. Vick; he has been my sole inspiration since the day he was born. Lastly, I would like to extend a special thank you to everyone that has supported and consistently been in my corner during this process.



JLK

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List of abbreviations

ACA- Affordable Care Act of 2010

ASTHO- Association of State and Territorial Health Officers

APHA- American Public Health Association

AARP- American Association of Retired People

APEX-PH- One tool that has been widely used since 1991 by health departments has been the NACCHO Assessment Protocol for Excellence in Public Health (McKenzie, Neiger, Smeltzer, 2005).

DHS- Wisconsin Department of Health Services. Formally known as Department of Health and Family Services.

FTE- Full Time Equivalent; staff that works 40 hours/week or 2080 hours in a year.

IRB- Institutional Review Board.

JS- Job Satisfaction is defined as one's perception that their job fulfills their personal needs; it is an affective and relative state of mind (Graham, 2010; Wilson et al, 2008). Freeman (1978) defines JS as a major determinant of labor marker mobility. He quantified JS with the following formula:

$$P(Q) = 1 / (1 - \exp \sum B_i X_{it})$$

P= probability of quitting a job (turnover)

X= demographic variables

JSS- Spector's Job Satisfaction Survey, the tool used for this research study.

The survey included nineteen demographic questions in addition to the 36 Job Satisfaction questions that reflect nine components (scales/sub-scores) of satisfaction (salary, promotion, supervision, benefits, contingent rewards, operating procedures, coworkers, nature of work and communication).

LGBT- Lesbian, Gay, Bisexual, Transgender and Questioning orientations

LHD- Local Health Department

LPHP- Local Public Health Professionals are organized into nine categories per the State of Wisconsin DHS (2011): administrative which includes health officers and commissioners; Public Health Nurses; oral health professionals which includes dentistry; environmental health professionals including Registered Sanitarians; public health educators; nutritionists; other professional staff – non-management; technical/ paraprofessionals which includes community health outreach workers; and support staff (clerical).

MG- Multigenerational Grouping; consists of 4 categories by range of birth years: Traditionalists 1922-1945, Baby Boomers 1946-1964, Generation X 1965-1980 and Generation Y 1981-1993.

NACCHO- National Association of County and City Health Officers

PHAB- Public Health Accreditation Board; the entity responsible for the national public health department accreditation process.

PHF- Public Health Fund

PHSSR- Public Health Services and Systems Research

PHN- Public Health Nurse

PHW- Public Health Workforce. In research, PHW consists of the 9 job types as identified by the State of Wisconsin County Health Profile. Same as LPHP.

SPSS- Statistical Product and Service Solutions; developed by IBM Corporation.

UWM- University of Wisconsin Milwaukee

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Chapter I

Introduction

Study Background

Public health is defined as the preventive or primary arm of health care in the United States (American Public Health Association; APHA, 2011). Prevention saves countless lives through direct medical services (e.g., immunizations and cancer screening), health education, and implementation of environmental strategies such as smoke free air policies. Nationally, every dollar invested in prevention saves up to twenty dollars for American taxpayers (Swisher, Scherer & Yin, 2004).

The public health profession focuses on disease prevention as well as manipulation of other contributing factors to community health. Presently, the public health workforce (PHW) consists of 155,000 staff employed by state and local public health departments (National Association of County and City Health Officials; NACCHO, 2010). The PHW is organized by job function or discipline. In this study, the PHW are classified by position type. NACCHO emphasizes the importance of the PHW, as they are the front-line for implementation of the following fundamental public health activities: disease prevention, environmental health, epidemiology, maternal and child health, health promotion and policy change (i.e., performance of the essential public health services; Public Health Foundation, PHF, 2010).

Traditionally, the definition of PHW includes staff employed by local and state public health departments/government agencies (APHA, 2011). Lamberth (2011) and the State of Wisconsin Department of Health Services (DHS; 2011, 2008) expanded the definition of PHW to include volunteers and non-governmental public health workers in for-profit and not-for profit settings. Lamberth also noted that the expanded definition of PHW is more accurate; however systems are not in place to accurately capture and maintain this data.

Public health services and systems research (PHSSR) is a discipline of research that focuses on the public health system. The National Coordinating Center for Public Health Services and Systems Research and the Public Health Practice-Based Research Networks serve as the national hub of PHSSR. PHSSR “has emerged over the past decade to produce the evidence needed by public health practitioners and policy decision makers to improve the nation’s public health system” (S72, The Consortium for Setting the Public Health Services and Systems Research Agenda: Altarum Institute, 2012). PHSSR inspires cross-sector collaboration, leveraging of resources and best practices as well as funding opportunities via the Robert Wood Johnson Foundation (RWJF) to address gaps in research.

The PHSSR agenda has four research domains: (1) PHW; (2) Public health system structure and performance; (3) Public health financing and ergonomics; and (4) Public health information technology. The first research

domain, PHW, includes two sub-domains [(2.0) demand, supply and shortages, and (3.0) diversity and disparities]. These PHW sub-domains supported the need to perform the Milwaukee County PHW study on Job Satisfaction.

Statement of Problem

According to the PHSSR agenda, there are many gaps in PHW research. Gaps are classified as research (PHSSR), policy (funding), and practice (needs assessments). The need to perform PHW research is paramount because the results will be used to improve efficiency and effectiveness of the profession. PHW studies drive research, policy, and practice initiatives. National PHW improvement initiatives include policy and functional enumeration of the PHW. Functional enumeration is the process of counting and defining the PHW (PHF, 2012). Health Resources and Services Administration (HRSA) recommends that functional enumeration is an ongoing process (2005, p.5).

Attempts to gather PHW data (i.e., need) have occurred at all levels, however gaps still remain. Administrators and researchers must select a starting point for PHW research and interventions because government-based funding is under severe scrutiny. Failure to address PHW research gaps will ultimately contribute to reductions in funding for public health. This funding will threaten PHW staffing levels. Reduced staffing levels will comprise the work environment and provision of public health services to the

community. Inadequate staffing levels and funding to perform public health services can negatively impact Job Satisfaction levels. According to the RWJF (2013), Job Satisfaction is related to recruitment and retention of the PHW; this is directly related to sustainability of the profession. Public health workers that report high Job Satisfaction are less likely to quit as well as delay retirement. Health departments with high employee Job Satisfaction can leverage this data to recruit high quality public health professionals from diverse backgrounds.

Diversity of Public Health Workforce

Diversity is an ongoing challenge that must be addressed (DHS, 2011). The primary challenge is to define diversity of the workforce. Diversity of the workforce is traditionally viewed as race, ethnicity, and gender. However, age has status connotations (i.e., position types) and should be considered as a mediating factor (Artz, 2008; Donohue & Heywood, 2004; Coleman-Selden & Selden, 2001; Mamman, 1996). Disability, military experience, and sexual orientation are also potential mediators of workforce diversity (Mamman, 1996; Pitts, 2005).

Diversity of the workforce has been shown to positively impact organizational outcomes by increasing the ability of agencies to remain competitive due to increased innovation and creative strategies (Mamman, 1996; Coleman-Selden, Selden, 2001; Pitts, 2005). The challenges of diversity

are also well documented and must be mitigated by management (Soto and Lugo, 2012).

Recruitment of a diverse PHW is also a priority of the Affordable Care Act of 2010 (ACA), which established the Public Health Fund and National Public Health Improvement Initiative (APHA, 2011). The ACA included reauthorization of titles VII and VIII (Smedley, 2011). Apart from sweeping health policy reforms, maintenance of a high-quality PHW that is representative of the communities served is key to reducing infectious (e.g., influenza) and chronic disease (e.g., diabetes- type II) as well as facilitating an overall sense of well-being (Coalition for Health Funding, 2013).

The Role of Age in Workforce Diversity—Implications for Public Health

In terms of workforce diversity, one area that continues to surface is the role of age in recruitment, retention, and management. Age has been correlated with position in the workforce (Artz, 2008; Donohue & Heywood, 2004; Coleman-Selden & Selden, 2001; Mamman, 1996). Skeptics may question why the concept of ‘generation’ is worthy of discussion for the PHW since there is a lack of American publications (Soto & Lugo, 2012). The primary reason for the lack of publications is funding and resources to perform the research (The Consortium for Setting the Public Health Services and Systems Research Agenda: Altarum Institute, 2012).

Another consideration in terms of workforce diversity is actually defining the meaning of generational groups and its sociological impact. Plicher (1994) analyzes Mannheim's essay "the problem of generations" (1923) to address the need for guidelines related to generational research. Generation is defined as personal lifespan and history, without this life would merely be, "birth, aging and death" (p. 486). Generations are driving forces of social change and progression since ancient Greece. Generations are stratified by geography and cultural location. For instance, some societies are more progressive while others are more conservative. Generational definitions should be specific for various countries (e.g. Istanbul compared to Spain).

There are four generations in today's workforce identified by key life events, range of birth years and work ethics: Traditionalists, Baby Boomers, Generation X, and Generation Y (Soto & Lugo, 2012; American Association of Retired Persons; AARP, 2007). According to Table 1, An overview of generations (Appendix A), each generation has specific work ethics, implications for organizational hierarchy, communication styles, and impact on delivery of healthcare services. Assessment of all four generations in today's workforce is referred to as multigenerational research.

Research regarding the impact of multigenerational factors of the contemporary workforce has been performed in a variety of sectors ranging from acute health care to occupational health and safety (Boston College

Center for Work and Family, 2009). Multigenerational research has yielded implications for leadership, change management, human resources, professional and organizational development, and succession planning. The failure to research the impact of generations in the workforce can be considered as a threat to the future of the profession (Hahn, 2011; Gladwell, Dorwart, Stone & Hammond, 2010; Graham, 2010; Stockburger, 2008). This claim will be examined later in this paper.

Study Purpose

The purpose of this study is to examine the influence of position type and generational grouping on Job Satisfaction levels among a sample of the PHW in Milwaukee County, Wisconsin. Generational grouping represents the individual, or socio-demographic aspects of today's public health workers while position type represents the public health agency or employers' aspect. The availability and quality of data obtained via PHW assessments has been variable in quality and lacking in scale. This is problematic because in today's evidence-based environment, workforce metadata is necessary to justify future funding and retain staff. Funding at the federal level is limited and competitive due to economic factors and health reform. Furthermore, primary data regarding Job Satisfaction of the PHW, that is, all position types, does not exist at the national, state, or local levels.

Job Satisfaction is a critical variable that impacts a sustained PHW. The lack of information on Job Satisfaction of the PHW is a significant

problem due to its relationship to recruitment and retention of staff in other sectors. The fishbone diagram, a quality improvement tool, was used to examine the scope of the problem (PHF, 2007). An extensive review of literature and methods was performed; this is first step to complete the fishbone diagram. Then, primary data collection and analysis was conducted to address the problem at the local-level. According to Figure 1, Job Satisfaction of Milwaukee County’s Public Health Workforce Fishbone Diagram, the problem is organized by: *people, materials, environment, methods, equipment, and measurements*. First, people, materials, and environment factors will be outlined. Then, methods, equipment, and measurement factors will be addressed; these factors were addressed through this study. *People* include comparison of the national, state, and local PHW. Diversity is represented as socio-demographic variables (e.g., age, gender). According to Table 2, Comparison of Public Health Workforce- Staffing and Turnover Rates per 10,000 for Most Recent Year Reported, PHW staffing rates compared to turnover rates are concerning.

Table 2. Comparison of Public Health Workforce—Staffing and Turnover Rates per 10,000 for Most Recent Year Reported

| | <i>National</i> | <i>State</i> | <i>Local</i> |
|-----------------------|-----------------|--------------|--------------|
| Staffing (FTE) | 9.3 | 4.2 | 2.9 |
| Turnover Rate | 34 | 35 | 1.3 |

Source: Wisconsin Department of Health Services & Bureau of Labor Statistics, 2011

There are three columns, one for each level of the PHW. The national-level consists of all state and local public health departments in the United States. The state-level represents all local and tribal public health departments in the State of Wisconsin. Lastly, the local-level includes all health departments in Milwaukee County. There are two rows of data: staffing and turnover rates. The staffing rate is the number of full time equivalents (FTE) per 10,000 people. Turnover is defined as the number of separations divided by the average of employees in the same time period (Society of Human Resource Management, 2012).

It is evident that the staffing levels decline from national to local-level. The turnover rate is approximately the same at the national and state-level, but the local-level has a remarkably low turnover rate. The rationale for the low local-level turnover rate can be inconsistent reporting of public health worker separations to the State DHS. Retention rates were desired but not available for inclusion in Table 2. Retention rate is defined as the percentage of staff employed at the beginning and end of a designated period of time (Society of Human Resource Management, 2012). Retention rates must be reported with turnover rates because they complement one other, assigning more value to the assessment and can be compared cross-sectors.

In addition to assessing staffing and turnover rates of the PHW, it is important to acknowledge national agencies that represent public health and its workforce: HRSA, APHA, NACCHO, PHF, and the Public Health

Accreditation Board (PHAB). These agencies inform policy, set research agendas, support funding of research, and collaborate to perform activities to address gaps.

At the state-level, the Wisconsin Department of Health Services (DHS) represents the public health system and workforce. At the local-level, the Milwaukee County PHW consists of 12 health departments and 350 FTE, combined. Public health workers employed by these health departments provide essential public health services to their respective communities.

Materials include a variety of national, state and local reports, best practices and theory. There are five key pieces of information that inform public health nationally. First, HRSA implemented the National Center for Health Workforce Analysis to bridge the gap in workforce data. The center developed a national PHW report; this report has not been updated since 2005. The report resulted in the establishment of nine recommendations ranging from assessment of prospective public health professionals (e.g. recruitment) to training and education offerings. NACCHO has performed national health department surveys, annually (2010). The results of these surveys have been used to track PHW trends such as workforce diversity.

Additionally, there are three national best practices that serve as the framework for delivery of public health services: core competencies, essential public health services, and accreditation. These best practices serve as guidelines and assessment tools for public health departments. Core

competencies are necessary for the effective delivery of public health services via PHW (PHF, 2013). There are eight core competencies ranging from communication skills to cultural competency. These competencies are linked to PHW roles. For example, the Council on Linkages between Academia and Public Health Practice's Core Competencies for Public Health Professionals are separated into three tiers (PHF, 2013). The tiers are representative of the level of engagement in delivery of public health services: (1) Entry level; (2) Management; and (3) Senior Managers and Health Officers. Position types fold into each tier to facilitate assessment.

Essential public health services are classified as primary job functions of the PHW (PHF, 2010). There are ten services ranging from health promotion to assurance of a competent workforce. These services are integrated in the public health accreditation process. Health departments must demonstrate the provision of all essential public health services to receive accreditation status. Accreditation includes assessment and documentation of core competencies and essential public health services (PHF, 2011). Currently, accreditation has 12 domains that represent the core competencies and essential services. Three domains are related to the PHW: (1) Development of public health policies and plans such as strategic planning, identification of strengths and weaknesses of workforce (i.e., domain five) (2) Maintenance of a competent public health workforce including assessment of staff core competencies, management processes and techniques; workforce

capacity and training (i.e., domain eight); and (3) Maintenance of administrative and management capacity such as human resources (i.e., domain 11).

The majority of PHW guidelines and assessment tools are national in scope. However, PHW guidelines and assessment tools are limited at the state and local levels. At the state-level, there are two policy-oriented initiatives associated with PHW assessments. The first is Healthiest Wisconsin 2020, which complies with Wisconsin Statute section 250.07(1)(a). This law mandates Wisconsin to develop a public health agenda every decade. The Wisconsin public health agenda includes two objectives that address the recruitment, diversity and assessment of the PHW (DHS, 2011). The Healthiest Wisconsin 2020 objectives will help address the gap and need for consistent and reliable benchmark data by 2020. The second initiative is Wisconsin Public Health Workforce Reports, which are performed every three years (DHS, 2012). The workforce report lists several challenges for today's PHW: staffing shortages, succession planning, aging of the workforce, specifically the increase in Baby Boomers and women nearing retirement age, diversity of the workforce, and the role of the economy.

The data from the Wisconsin Public Health Workforce Report includes the annual Local Health Department Staffing Survey (a requirement of Wisconsin State Statute section 251.05). The staffing survey collects aggregate data from local health departments about bilingual staff, race/ethnic group membership, age, number of new employees, retirees, and staff eligible for retirement (DHS, 2008 & 2011).

Environment entails the results of policy and practice at the national, state, and local levels. The current state of the PHW is concerning. NACCHO proclaimed that the national PHW was in a state of crisis because 50 percent of staff will retire in the next five years. According to a national random sample of 960 health departments by NACCHO (2012), 40,000 positions have been lost since the recession began in 2008. In response to the drastic cuts to the workforce, 77 percent of health officers have increased the workload of existing staff, 82 percent cross-trained staff while 23 percent merged departments (NACCHO, 2012). Furthermore, in 2011, 57 percent of all health departments reduced or eliminated at least one program. This is the largest percentage loss in any year since the recession began in 2008 (NACCHO, 2012).

In Milwaukee County, approximately 350 public health professionals serve 939,940 residents the majority of which are 25-44 years of age/ Generation X and Baby Boomers (approximately 260,000) and white (approximately 550,000). Baby Boomers are expected to contribute to the influx of PHW retirements (RWJF, 2013). Milwaukee County contains a great deal of variance in terms of health outcomes between whites and non-whites, especially in select zip codes in the City of Milwaukee (Center for Urban Population Health, 2012). In short, public health needs are great because the county population distribution and socioeconomic status varies greatly compared to the City of Milwaukee.

In Milwaukee County, the number of public health FTEs continues to dwindle (State of Wisconsin, 2012). There was a slight increase in staffing between 2009 and 2010 (349 to 355 respectively). The increase is attributed to American Recovery and Reinvestment Act funding as well as other federal grants. It is important to note, grants are temporary sources of funding that cannot be considered permanent solutions to reductions in public health funding.

Public health Administrators and policy makers must sustain the PHW. Sustainability begins with assessment of the PHW. Assessment will reveal contributing factors to reductions in staffing levels. Some factors cannot be controlled: turnover and retention related to retirements or aging of the PHW; staffing shortages related to reduced government funding and tax levies; and economic recession. However, some factors can be managed. Job Satisfaction is one example of a variable that can be assessed and evaluated over time. The assessment of Job Satisfaction of the PHW will be discussed further in this paper.

Another consideration for public health administrators and policy makers is the need to perform PHW assessments via the public health accreditation process (PHAB, 2011). Health departments will be required to perform PHW assessments related to functional enumeration of the workforce, staff core competencies, essential public health services provided to the public, and diversity of the workforce compared to the communities

served. These workforce assessments have not been standardized; rather health departments can select survey tools to meet the needs of their agencies as long as they can document achievement of accreditation domains. The lack of standardization can limit completeness of data sets and the ability to compare results to other health departments. Selection of reliable and valid survey tools will enhance the quality of PHW data. According to the literature, Job Satisfaction surveys are a reasonable form of workforce assessment.

Methods and Equipment includes the process for obtaining Job Satisfaction data from the PHW in Milwaukee County. In this study, research gaps and availability of resources informed the selection of methods and equipment (i.e., logistics to perform study and analyze results). Health Officers and Commissioner (Administrators) feedback is important because they represent their agencies. In addition to Administrators, the need to survey the local PHW was apparent. It was determined that Job Satisfaction surveys could be administered to individuals and/or agencies. However, collection of socio-demographic data, let alone Job Satisfaction levels has been limited at the national (NACCHO) and state (DHS) levels. According to these gaps, it was determined that the Job Satisfaction Survey should be administered at the individual level. Achievement of adequate study power and response rates would facilitate implications for research, policy, and practice.

Measurements include the data sources, tools and outputs that will be used to share Job Satisfaction data. Measurement supports the accreditation process because it is a means to an end. First, PHW assessments/ surveys are necessary to demonstrate achievement of the workforce domains. The NACCHO Assessment Protocol for Excellence in Public Health (APEX-PH), phase I (organizational capacity) is an assessment tool that can be used by health departments to assess the PHW (McKenzie, Neiger, Smeltzer, 2005). It is important to note that this tool is time consuming and may not be feasible to implement. Recommendations for PHW assessment tools that are easy to use are necessary to garner support from administrators. Regular community health assessments are required per accreditation and Wisconsin state statutes. Although community health assessments focus on the external (i.e., recipients of services), the data is used to dictate staffing, prioritize delivery of public health services, and programming (DHS, 2011). Next, annual health department reports and human resources surveys can be used to share information about the PHW. For example, annual health department reports typically include budgetary info related to personnel (e.g., number of staff by FTE). Additional information about staff tends to be limited. To the researcher's knowledge, Job Satisfaction has not been addressed by health departments serving Milwaukee County. In comparison, the Chicago Department of Public Health (2013), a recently accredited health department, performed a Job Satisfaction survey. This data, in conjunction

with other reports, was used to demonstrate achievement of the workforce domain.

Selection of a tool that is less time-consuming to implement and analyze is essential. Job Satisfaction assessments have provided data for practical use in other sectors. The utility of Job Satisfaction assessments is to define the workforce, retain existing staff, and market results to recruit new employees (e.g., best places to work surveys).

Summary of Study Purpose

The problem, “Job Satisfaction is a critical variable that impacts a sustained PHW” was evaluated by six factors: *people, materials, environment, methods, equipment, and measurements* (Figure 1). *People* entailed the apparent lack of standardized processes to collect PHW and Job Satisfaction levels. Incomplete data sets were also realized. *Materials* include a range of best practices and reports, however the guidance fell short due to limited resources to assess Job Satisfaction levels of the PHW. *Environment* addressed the climate of today’s PHW. Job Satisfaction levels may be affected by a variety of factors—some can be manipulated while others may not. Uncertainty due to reduced funding and retention may impact Job Satisfaction of the PHW. *Methods and equipment* were assessed as a means to acquire Job Satisfaction data via a sample of the PHW at the local-level. *Measurement* addressed several formats to disseminate and assess Job Satisfaction levels of the PHW over time. Job Satisfaction levels

can be assessed by at the individual level (e.g., socio-demographic variables) or agency level (e.g., overall health department, discipline, division, program, unit, position type).

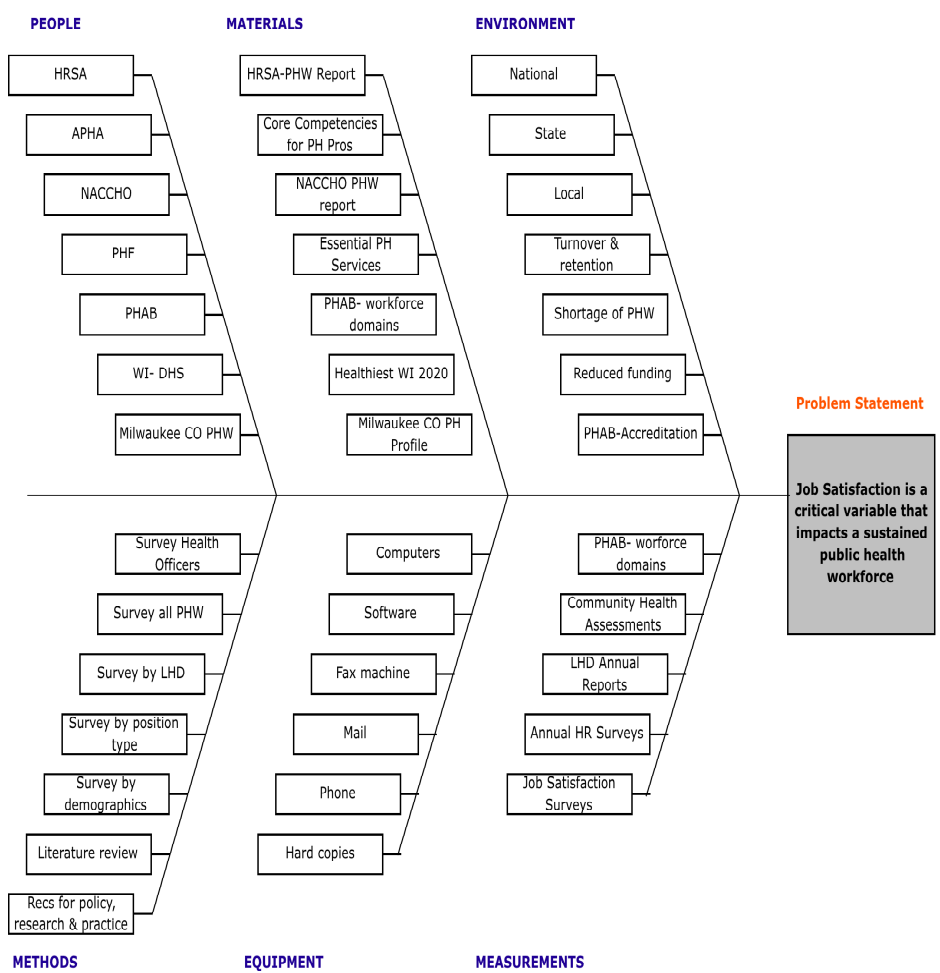


Figure 1. Job Satisfaction of Milwaukee County’s Public Health Workforce Fishbone Diagram

Specific Aims

The specific aims of this research are: (1) To obtain socio-demographic data from a sample of the PHW in Milwaukee County; (2) Determine their Job Satisfaction level; (3) Examine how Job Satisfaction level in the study

sample compares to the national public sector baseline level; and (4) Examine the relationship of position type and generational grouping on Job Satisfaction among a sample of the PHW in Milwaukee County.

Research Questions

Research questions explored via a sample of the PHW in Milwaukee County are:

1. Does position type influence Job Satisfaction?

- (a) What is the mean Job Satisfaction score per position type?
- (b) What are the Job Satisfaction sub-scores (i.e., pay, promotion, supervision, fringe benefits, contingent rewards, operating procedures, coworkers, nature of work, communication) per position type?
- (c) Are the Job Satisfaction scores statistically significant for position type when compared to other socio-demographic variables?

2. Does generational grouping influence Job Satisfaction?

- (a) What is the mean Job Satisfaction score per generational group?
- (b) What are the Job Satisfaction sub-scores per generational group?
- (c) Are the Job Satisfaction scores statistically significant for generational grouping when compared to other socio-demographic variables?

Basic Methods

In order to understand the influence of position type and generational grouping on Job Satisfaction of the local PHW, the Job Satisfaction Survey (Spector, 1994) was administered to a sample of 145 public health professionals in Milwaukee County. The Job Satisfaction Survey was selected to quantify Job Satisfaction levels, provide comparisons, and pilot a process for administering Job Satisfaction surveys at the local-level.

The survey results were collected via web-based survey software. The software included a centralized dataset using Microsoft Excel. Once the dataset was exported, it was coded and analyzed; SPSS 19.0 (IBM, 2011) was used. Descriptive statistics were assessed (e.g., means, standard deviation) per variable. This information, along with detailed results for independent variables (position type and generational grouping) will be provided in the results section of this paper. Detailed results for the dependent variable (Job Satisfaction) will include overall mean scores and nine subscores per independent variable for count, mean, standard deviation as well as the upper and lower confidence interval limits. The national public sector Job Satisfaction score and subscores will serve as the baseline for comparison for the study sample.

Lastly, one-way ANOVA, appropriate post-hoc testing (Tamhanes; $T2$), effect size (adjusted R-squared), and chi-square were performed as appropriate to determine statistical significance of study findings; these

findings are provided per research question.

Chapter II

Review of Relevant Literature

Examination of the impact of position type and generational grouping on Job Satisfaction was conducted via multiple computerized databases from November 2008 to September 2013. The following keywords were used (number of articles retrieved in parentheses): managing human capital (38); multigenerational issues in public health (19); workplace flexibility and engagement (30); and Job Satisfaction public sector (33). Articles were deemed relevant for the study if they addressed multigenerational issues in management, recruitment, retention, and sustainability of the workforce—regardless of discipline due to the lack of specific research in public health.

In December 2011, another search was necessary because only 17 of the 89 articles retrieved via the previous search were relevant for the study. The following search terms were used: multigenerational workforce (25) and multigenerational workforce public health (254). Forty-five articles were reviewed; however 28 were relevant to the research questions posed in this paper. Another search was performed in December 2012 using the term “Job Satisfaction public sector”; 75 articles were retrieved; however 33 warranted further review. Many of the articles focused on health outcomes related to multigenerational factors and potential confounders such as sex, age, and

income. Majority of articles that addressed multigenerational factors and issues in the workforce were aligned with acute nursing practice.

The remaining articles pertained to Job Satisfaction focused on age, gender, race, educational attainment, fringe benefits, union affiliation, and position type. An additional search was performed in September 2013 related to Job Satisfaction and generational issues of the PHW. In June 2013, RWJF released a report entitled, “Enumeration and characterization of the PHN Workforce: findings of the 2012 PHN Workforce Survey.”

Multigenerational Issues in the Workforce

In the workforce, employee status/rank was affiliated with age or generational grouping. Traditionalists would hold executive-level positions and Baby Boomers or Generation X would assume the roles of line staff (AARP, 2007). This would indicate that employee job longevity is part of the Job Satisfaction experience. The current shift is a combined effect of labor shortages across sectors; the increasing average age of retirement; and an influx of younger professionals/ employees in the workforce. These factors are also related to turnover in workforce research (Lavoie-Tremblay, Paquet, Duchesne, Santo, Gaurancic, Courcy, Gagnon, 2010; AARP, 2007). Retirement is a notable cause of turnover. Regardless of sector, 76 million US workers will retire in next decade but there will only be 46 million replacements, a 60 percent decrease in the labor pool by 2016 (Stevens, 2010).

For the healthcare sector, the median age of workers is 42.1 compared to the overall median age of the U.S. workforce of 40.4 (Ashworth, 2006). The average age of a registered nurse is 47 years (AARP, 2007; DHS, 2008). The composition of today's healthcare workforce is related to staffing shortages and management's desire to provide consumers with a diverse body of employees that can relate to the population that they serve. The concept of a multigenerational workforce exists sector-wide, especially in healthcare as clinicians are aging and younger employees are being recruited to replace them.

Positive and Negative Aspects of a Multigenerational Workforce

The presence of a multigenerational workforce can be an asset and liability. It can enhance the work environment by increasing efficiency and creativity as well as detract from the work environment by stifling productivity, increasing turnover, and facilitating hostile work environments (cf.e.g., Soto and Lugo, 2012; Orpilla, 2011).

From Administrators to clinicians, the multigenerational nature of today's healthcare workforce impacts the delivery of healthcare (see Appendix A, Table 1. An Overview of Generations). "Generational differences affect attitudes about patient care, technology, quality of life, balancing work and home life, call (i.e. purpose in work), financial rewards and authority," (Baum, 2007, p. 24). These differences also impact relationships between the organization and colleagues. In regards to physicians: Traditionalists

maintain strong hospital- physician relationships; Baby Boomers often hold management roles therefore they shape the hospital/ practice; and Generation X are more likely to leave the hospital/ practice if their work-life balance is challenged or unfulfilled. In terms of patient interaction (e.g., touch or face time with patients) and comfort level with technology: Traditionalists are low-tech and high touch; Baby Boomers are moderate-tech and touch; and Generation X are high-tech and low touch (Baum, 2007).

Implications for the Public Health Workforce

Three areas were highlighted via workforce research: age or generational grouping, related roles in the workforce (e.g. position type), and Job Satisfaction. In the last decade, several research studies have suggested that the healthcare industry, including public health, should look outside of their sector for long-term management of multigenerational and position-related differences in the workplace (Zywiak, 2008). Published research on workforce indicators suggests that management should consider generational preferences during interactions with staff and management to perform decision-making processes (Moye & Swan, 2009). For example, in the nursing discipline, failure to acknowledge multigenerational issues in practice negatively impacts patient care and retention of staff. Job Satisfaction has also been noted to vary across generations; therefore it is important to understand what constitutes Job Satisfaction per generational grouping, especially for those that are replacing the rapidly retiring

generations at all levels (Gladwell et al, 2010; Graham, 2010; Wilson, Squires, Widger, Cranley & Tourangeau, 2008). The relationship between age, generational groupings, and position type are important variables to acknowledge in research on workforce development (Dries, Pepermans, & DeKerpel, 2008; AARP, 2007). Implications for public health are tied to the concept of Job Satisfaction, which is a predictor of retention, turnover, and overall *sustainability* (cf.e.g., Lavoie-Tremblay, Paquet, Duchesne, Santo, Gaurancic, Courcy & Gagnon, 2010).

Sustainability

Sustainability is defined as investments in local and state public health, the public health system, community partners and the workforce, which builds operational capacity to make a significant impact on health outcomes, reduced disparities and enhanced preparedness (Monroe, 2011). Sustainability impacts the fate of public health's recruitment and retention efforts.

Recruitment of high quality PHW plays an integral role in sustainability (HRSA, 2005, APHA, 2006). Steps consist of marketing, development of solid job descriptions, rigorous but time sensitive hiring timelines, and most importantly seeking the win-win between employers and employees (i.e., best fit). Retention is equally important considering the amount of resources invested into the recruitment process. There are many reasons why staff may decide to quit, thus impacting retention and turnover

rates. Frequent reasons are retirement and reduction in force. Voluntary separation negatively impacts employers especially if the separation occurs within three years of hire (Gladwell, Dorwart, Stone and Hammond, 2010). The financial impact of voluntary separation on employers can exceed \$25,000 per event. Reasons for voluntary separation, a primary threat to sustainability, will be presented as relationships with coworkers and supervisors, and organizational structure and policies. All of these aspects are tied to Job Satisfaction, cross-generations.

Relationships with Coworkers and Supervisors

In relation to sustainability, relationships with fellow coworkers and supervisors are vital for retention and the prevention of premature employee separation. For “individuals tend to stay or leave organizations largely on the basis of the quality of the relationships they have with others, especially their supervisor and second-level supervisor” (Trahant, 2008, p. 40).

Cennamo and Gardner (2008) conducted a study of approximately 500 employees from all four generations in New Zealand regarding work values, Job Satisfaction and organization commitment. The researchers determined that “social work values (e.g. having a fair and considerate supervisor, pleasant co-workers) were most strongly valued by individuals and seen as offered by organizations” (p. 898). Generation X and Y employees were consistent with previous studies in that they “tend to seek out work

opportunities that supply freedom and autonomy and may be prepared to leave the organization if these needs are not met” (p. 903).

Lower (2008) also examined the recruitment and retention of Generation Y nurses, and offers additional recommendations. She determined that there are six factors that impact nursing retention: “scheduling, coworker and physician relationships, professional growth opportunities, recognition, control, and responsibility” (p. 81). Each of these factors should be addressed to minimize turnover among nursing staff. Conflict is a reality that exists in any workplace. Conflict in interpersonal relationships is common, but acutely so between generations as they may not understand or appreciate different forms of work ethic and attitudes (Soto and Lugo, 2012; AARP, 2007; Scott-Derrick & Hudson-Walker, 2006). “Tensions typically stem from perceptions of loyalty and respect,” (Boston College Center for Work and Family, 2009, p.3).

Organizational Structure and Policies

Organizational structure and policies impact sustainability because they are associated with a satisfied and productive workforce. Generational differences add depth to the understanding of the concepts around the PHW (e.g., recruitment, retention, turnover). Organizational structure and policies in healthcare settings may also impact retention efforts. “The military model of leadership that worked so well in the 1960’s doesn’t work so well for today’s employees,” (Twenge & Campbell, 2008, p. 867). Employees may see

rank and file leadership as a barrier to accomplishing work assignments. Generation X and Y employees have a “desire to work for organizations that are more linear and less hierarchical and want to be recognized for their efforts” (Scott-Derrick & Hudson-Walker, 2006, p. 64).

Job Satisfaction

In the literature, Job Satisfaction is a noted moderator of retention and sustainability (cf. e.g., RWJF, 2013; Soto & Lugo, 2012). Job Satisfaction is defined as an individual’s perception of a job fulfilling their personal needs; at base level it is an affective and relative state of mind (Graham, 2010; Wilson *et al*, 2008). According to workforce research, there are many theories and models that address Job Satisfaction. They are organized by year of publication, theory name, overview, and variables. Variables are arranged by source of influence: internal or external (see Appendix B, Table 3. Overview of Job Satisfaction Theory). Job Satisfaction is influenced by internal and external factors. Internal includes genetic predisposition (personality), affectivity (positive/ negative), motivation, self-actualization, locus of control, age, gender, race, ethnicity, sexual orientation, disability status, military status, and educational attainment. Tenure in the profession, at ones agency and in current position is also recognized because the rationale to stay is ultimately internal. External includes the political environment, organization, work, and position type. The political environment is affected by policy and funding. Organization includes culture, pay and promotional

opportunities as well as communication and recognition/ discipline. Work includes the nature of the job according to functions of the unit, reporting structures (supervision and coworkers), and autonomy. Position type dictates skills and authority to satisfy the responsibilities listed in job descriptions. Furthermore, the latter, encompasses actual and perceived roles according to position type.

Job Satisfaction of the Public Health Workforce

In order to address the research problem, Job Satisfaction is a critical variable that impacts a sustained PHW; a variety data must be gathered. Job Satisfaction assessments exist for evaluating workforce; however tools are limited for the PHW. Survey tools may be limited for the PHW because Job Satisfaction surveys tend to be general in scope. Job Satisfaction of the PHW is an under-researched area so there was limited need for a survey tool. Only two studies addressed Job Satisfaction of the PHW. The first study was published in 2010. It focused on the impact of multigenerational issues and Job Satisfaction of the Canadian Public Health Nurses (PHNs) (Graham, 2010). Graham's study was a mixed-methods approach that used secondary survey data for PHNs. Graham found weak association between age and workload on Job Satisfaction for PHNs. The author suggests age and workload may be indicative of generational views on work (p. 113). The qualitative aspect of the research study suggests assessment of generational grouping in the workforce. Graham also noted that there is a need for

enhanced understanding of generational work because it may impact productivity of health departments (p. 114).

The second study was recently released in the summer of 2013. “Enumeration and characterization of the PHN Workforce: findings of the 2012 PHN Workforce Survey.” During 2012, a workgroup was convened to address workforce research gaps among the largest group of public health professionals in the United States (PHNs). The individual and organizational-level study was finally possible because it was funded by RWJF and facilitated via the University of Michigan, School of Public Health. The purpose of the PHN survey was to assess workforce size, discipline specific position types, programs, job functions, educational attainment, recruitment, retention and retirement plans. Job Satisfaction was assessed due to its relationship on retention. The researchers found that there is a distinct need for increased training opportunities, diversity of the workforce (e.g., 95 percent of PHNs in administration were white), increased promotional opportunities, and policy change. More importantly, Job Satisfaction was remarkable with 85 percent of the sample ($n=5500$) claiming satisfaction with their current job and 90 percent claiming high intrinsic value (e.g., making a difference as PHNs). Recommendations were hinged on training (e.g., loan repayment and increased role of professional associations), diversity (e.g., use diversity to increase succession planning activities, leverage Historically Black Colleges and Universities to increase diversity of

the PHW, and training), research (e.g., need for regular PHW studies to assess supply and demand, need to establish a minimum data set for additional researcher), and policy (e.g., assess impact of ACA via regular PHW research, PHF tuition reimbursement, and leveraging high Job Satisfaction as a means to recruit PHNs).

Study Conceptual Framework

Using the health services and organizational literatures, a study framework was developed to guide the data collection and analysis. A diagram of this framework is depicted in Figure 2. The framework consists of four factors that impact Job Satisfaction. These factors are nested by the scale of impact (addressed from left to right): *individual, organization, unit, and position*. These factors are listed and described in the following section.

Individual Factors represents the following personal characteristics: age aside from generational grouping related to their role in the PHW, gender, race, ethnicity, sexual orientation, disability, military status, and educational attainment.

Organization Factors represents those systems or structural factors found health departments. Health departments can be viewed at the macro (policy and procedures, communications, management) or micro-level (interpersonal relationships and work environment) (Spector, 1994).

Unit is specific to the division or programs per health department. Traditional divisions are tied to essential public health services such as

maternal and child health, environmental health, and communicable disease (DHS, 2009).

Position is two-fold because it is the link between the individual variable of age and their role in the workforce. *Position type* includes the varied and multiple types of positions found in public health departments such as: Administrative; PHN; Oral Health Professionals; Environmental Health Professionals; Public Health Educators; Nutritionists; Other Professional Staff – non-management; Technical/ Paraprofessionals; and Support Staff. *Position* also includes the variable of *generational grouping*, which is categorized by year of birth: Traditionalists before 1922-1945, Baby Boomers 1946-1964, Generation X 1965-1980, Generation Y 1980-1993.

Position type is correlated with age/ generational grouping in workforce research. *Position type* represents the employer's role for the employee. It was selected because standardized data is available for the number of FTEs per position type. Furthermore, health departments in Milwaukee County are familiar with the position type variable because they are required to report the number of FTEs to the State of Wisconsin DHS per Wisconsin State Statute 251.05 (DHS, 2011).

This category was selected to test if age impacts Job Satisfaction as noted in workforce research external to public health. The spread of years per generational grouping also increases the ease of data analysis (i.e., four levels) versus more common age categories that are arranged by decade.

Job Satisfaction is the dependent variable of the study. It is related to recruitment and retention (RWJF, 2013). Job Satisfaction is comprised of factors such as recruitment, retention, and includes the end goal of sustainability of the PHW. Recruitment is viewed as the marketing of vacancies and hiring of employees. Retention is maintaining staffing levels; this is typically assessed at the same period per year (Merriam-Webster, 2012). The end goal for every health department should be the maintenance of high quality, satisfied staff to perform essential public health services.

Spector (1985) addressed the association of Job Satisfaction, via use of the Job Satisfaction Survey and client outcomes for the human services sector. Spector's Job Satisfaction Survey provides a mean average score; this is useful to describe Job Satisfaction levels of the PHW. The Job Satisfaction Survey consists of nine subscales: pay, promotion, supervision, benefits, contingent rewards, operating procedures, coworkers, nature of work, and communication. The subscales are reported as sub-scores; this is useful to determine the composition of Job Satisfaction levels of the PHW. The mean Job Satisfaction Scores and sub-scores are compared to other groups (intra-, inter- as well as the national baselines per sector).

Spector developed the Job Satisfaction Survey due to a lack of Job Satisfaction research and measurement tools for the human services, non-profit and public sectors (1985). The survey was also the result of a meta-analysis of human services publications related to Job Satisfaction and

subsequent factor and conceptual analyses. This survey has been widely used in workforce research in nursing and the public sector.

Since the development of the Job Satisfaction Survey, the survey tool has been widely used in accordance with the intent of the author for the following reasons: (1) The tool is relevant for human services, public and non-profit sector research; (2) The nine subscales are distinct and enables researchers to examine various facets of Job Satisfaction in addition to assignment of an aggregate score; and (3) The survey is reasonable in length (i.e., considerate of time to complete versus previous surveys which may have as many as 100 questions).

There are several factors that may impact self-reported Job Satisfaction levels: mood, morale, and response to an outbreak or disaster may impact responses for the PHW. Another variable that may influence reported Job Satisfaction is the diversity of the sample. Variables such as disability, sexual orientation, and gender were recommended for inclusion in the study because these variables were potential confounders in workforce research (Coleman-Selden & Selden, 2001; Mamman, 1996). Furthermore, Spector (1985) noted age and level in an organization (e.g., management) were associated with significant Job Satisfaction Survey overall score and various subscales [age: nature of work $r=.24$ and pay $r=.21$ and level (position): promotion $r=(-.15)$, nature of work $r=(-.11)$ and pay $r=(-.19)$].

Assessment of Job Satisfaction levels can have great utility for the PHW. An investment in Job Satisfaction assessments may facilitate future research related to health outcomes. Perhaps, if public health agencies were to invest in collecting data/information on Job Satisfaction, such information would translate into better population health outcomes. This relationship will be examined in future research.



Figure 2. Study Framework (Kowalik, 2013)

Summary of Literature

The state of today's workforce in general as well as the PHW was provided. Benefits and issues tied to the multigenerational nature of the workforce were addressed. Implications for the PHW were also provided;

they are hinged on sustainability, which is two-fold: 1) Relationships with coworkers and supervisors and 2) Organizational structure and policy. Job Satisfaction was defined, theoretical considerations, and assessment was explored. Considering the severely limited availability of PHW Job Satisfaction studies, two key PHN Job Satisfaction studies were reviewed.

According to the literature, a study framework was developed to guide the data collection and analysis of data collected (Figure 2). The framework consisted of individual, organization, unit, and position factors that are nested by their scale of influence on Job Satisfaction of the PHW in Milwaukee County.

Chapter III

Methods and Procedures

For this study, the methods and procedures section is organized by sample, setting, design, variables, procedures, and analyses. Ethical considerations for this study are also provided.

Sample

Participants included ($n = 145$) local public health professionals. The sample size had adequate statistical power ($1-\beta=0.80$; Raosoft, 2012).

Inclusion criteria established for the study were: (1) Adults 18 years of age and older; (2) Employed at one of the 12 local health departments located in Milwaukee County; and (3) Full, part-time status. Temporary/seasonal status as well as exempt/non-exempt employee status was not a condition to participate in the study.

Setting

The study occurred in Milwaukee County, Wisconsin. Milwaukee County is largely urban and has a decentralized local health department structure; that is there is no single county-level health department to serve its one million residents (State of Wisconsin, 2011). There are 12 local health departments in Milwaukee County, each serving as public health experts to their respective communities.

Design

This study utilized an exploratory, cross-sectional design. Survey data was obtained via collection procedures from a sample of local public health professionals to examine the influence position type and generation grouping have on Job Satisfaction.

Ethical Considerations

The identity of respondents was safeguarded. First, aggregate data was reported to protect the identity of respondents if there were less than five respondents for sensitive demographic groups (e.g., gender, race, ethnicity, sexual orientation, disability status, military status). The provision of descriptive statistics such as mean and standard deviation also served as safeguards. Secondly, place of employment was not captured via the survey as an added protection for confidentiality. Zip codes were collected in lieu of local health department names to ensure confidentiality as some health departments in the county are very small and location may compromise identity of those respondents (see Appendix C, Table 4. Milwaukee County Zip Codes- Inclusion for Study). Lastly, the researcher did not collect respondent Internet provider and email addresses. In compliance with the IRB confidentiality assurances, electronic survey data was password protected and hard copy formats of data has been stored in a locked file cabinet in the researcher's office for seven years.

Variables

Variables are categorized as socio-demographic, independent, and dependent. Socio-demographic variables were selected via the literature. The Wisconsin DHS, Southeastern Regional Office also requested that the study assesses tenure, attitudes, beliefs, and perceptions about public health accreditation.

Socio-demographic Variables

Socio-demographic information was added to the questionnaire to enable the researcher to adequately describe the participants. There are seven, self-defined, socio-demographic variables: (1) Gender (male, female, transgender, decline to respond); (2) Ethnicity [Hispanic/ Latino ethnicity- yes/no; (3) Race [white (European and Middle Eastern descent); African (foreign-born or of American descent); Asian (including India); American Indian/ Alaskan Native; Native Hawaiian/ Pacific Islander; other; decline to respond]; (4) Sexual orientation (heterosexual, homosexual, bisexual, transgender, other, decline to respond); (5) Disability (requiring special accommodations at work- yes/no, decline to respond); (6) Educational attainment [high school diploma/ GED (12th grade); associate degree (two year); bachelor degree (four year); master degree (post graduate); doctorate degree (professional); post-doctoral fellowship]; and (7) Military status (yes- active duty; yes-veteran; no; decline to respond).

Five supplemental questions were posed via the request of the Wisconsin DHS, Southeastern Regional Office: tenure in public health, at one's agency, and in current position variables as well as accreditation knowledge and perception of time to attain accreditation.

Independent Variables

Position Type: Defined as self-identified position types for the PHW. There are nine position types: (1) Administrative, (2) PHN, (3) Oral Health Professional (e.g., dental), (4) Environmental Health (e.g., Sanitarian, Lead Assessors), (5) Public Health Educators, (6) Nutritionists, (7) Other Professional Staff (e.g., non-management), (8) Technical/ Paraprofessionals (e.g., Community Outreach), and (9) Support Staff (e.g., clerical). The position types are consistent with Wisconsin DHS reporting requirements.

Generational grouping: This category represents four, mutually exclusive variables that represent year of birth. The year of birth is arranged by generational grouping definitions (name and range of years) that were obtained via the literature review: (1) Traditionalists- years of 1922-1945; (2) Baby Boomers-years of 1946-1964; (3) Generation X- years of 1965-1980; and (4) Generation Y- years of 1981-1993. Generational group names and birth years were obtained via the workforce literature.

Dependent Variables

Job Satisfaction is the dependent variable in this study. Job Satisfaction levels of the PHW sample were obtained via administration of the Job Satisfaction Survey (Spector, 1994). The Job Satisfaction Survey consists of 36 questions organized by nine sub-scales: (1) Pay, (2) Promotion, (3) Supervision, (4) Fringe Benefits, (5) Contingent Rewards, (6) Operating Procedures, (7) Coworkers, (8) Nature of Work, and (9) Communication (see *Appendix D, Figure 3, Job Satisfaction Survey*). Each scale contains four assessment items to yield scores for comparison purposes on a six-point Likert type scale (i.e., disagree very much, disagree moderately, disagree slightly, agree slightly, agree moderately, and agree very much).

The reliabilities of the nine sub-scales are provided (see Table 5. Job Satisfaction Survey Overview-© 1994, Paul E. Spector, All rights reserved). The table includes mean Job Satisfaction score and four columns per sub-scale. All nine sub-scales yield sub-scores, which equal the mean Job Satisfaction score; these scores are then averaged per sample and compared by sector. Alpha represents the published internal consistency reliabilities provided by the author in 1985 (e.g., coefficient alpha). It is important to note the published alphas per sub-scale were greater than .50, which is the established minimum (Spector, 1985). Description consists of a brief overview of each sub-scale's content. Item numbers delineate which survey questions are affiliated with each sub-scale.

Table 5. Job Satisfaction Survey Overview- © 1994, Paul E. Spector, All rights reserved.

| <i>Scale</i> | <i>Alpha</i> | <i>Description</i> | <i>Item numbers</i> |
|-----------------------------|--------------|--|---------------------|
| Pay | .75 | Pay and remuneration | 1, 10, 19, 28 |
| Promotion | .73 | Promotion opportunities | 2, 11, 20, 33 |
| Supervision | .82 | Immediate supervisor | 3, 12, 21, 30 |
| Fringe Benefits | .73 | Monetary and nonmonetary fringe benefits | 4, 13, 22, 29 |
| Contingent Rewards | .76 | Appreciation, recognition, and rewards for good work | 5, 14, 23, 32 |
| Operating Procedures | .62 | Operating policies and procedures | 6, 15, 24, 31 |
| Coworkers | .60 | People you work with | 7, 16, 25, 34 |
| Nature of Work | .78 | Job tasks themselves | 8, 17, 27, 35 |
| Communication | .71 | Communication within the organization | 9, 18, 26, 36 |
| Total | .91 | Total of all facets | 1-36 |

(Spector, P, 1994)

The Job Satisfaction Survey contains nineteen questions, which are negatively scored; these questions will be highlighted in bold font in the dependent variables section of this paper. Mean Job Satisfaction scores below the national public sector baseline translate to “less satisfied” while Job Satisfaction scores above the national public sector baseline equate to “more satisfied”; this is important because it implicates retention of the workforce. Data from the Milwaukee County PHW study was compared to the national public sector baseline. The national public sector scores are presented as reported mean and standard deviation per sub-scale: pay ($M=12.1$, $SD=2.5$), promotion ($M=11.9$, $SD=1.9$), supervision ($M=19.1$, $SD=1.5$), fringe benefits ($M=14.4$, $SD=2$), contingent rewards ($M=13.5$, $SD=1.8$), operating procedures ($M=12.9$, $SD=2$), coworkers ($M=17.9$, $SD=1.5$),

nature of work ($M=18.9$, $SD=1.7$), and overall communication ($M=14.5$, $SD=2.2$).

To date, the Job Satisfaction Survey has not been used to assess Job Satisfaction levels of the PHW; therefore it was necessary to compare the sample of Milwaukee County's PHW Job Satisfaction to the national public sector employee baseline published by the survey's author (Spector, 1994). The rationale for comparison of the national public sector employee data and the PHW study results is that the public sector encompasses the PHW, a class of public sector employees. The inclusion of the PHW in the public sector category is implied by the Job Satisfaction Survey's author who included one local public health study in his initial meta-analysis, for it was used to develop the survey tool (Spector, 1985).

Procedures

The Job Satisfaction Survey was selected to collect Job Satisfaction and socio-demographic data from a sample of the PHW in Milwaukee County, Wisconsin. The Job Satisfaction Survey is a validated tool with a published alpha of .91 (Spector, 1994; see Appendix D, Figure 3. Job Satisfaction Survey-© 1994, Paul E. Spector, All rights reserved). The Job Satisfaction Survey assesses Job Satisfaction at the aggregate (employer) and individual (employee) level. It not only quantifies the measure but also enables researchers to analyze trends.

In May of 2012, the researcher contacted each Health Officer in Milwaukee County as well as the Wisconsin DHS, Southeastern Regional Health Officer to notify them about the PHW study. The researcher leveraged the Wisconsin Association of Local Health Departments and Boards (WALHDAB) and the annual Wisconsin Public Health Association (WPHA) meeting and conference (Wisconsin Dells, Wisconsin May 21- 23, 2012) to engage participation in the PHW study. The majority of Health Officers agreed that survey participation would be voluntary and that they would forward information about the PHW study opportunity to their staff via work email and in-person. Management would allow staff to complete the Job Satisfaction Survey on work time (if staff desired) and incentives would not be provided for participation in the study. It was estimated that the survey would not exceed 30 minutes to complete in one sitting, as assumed based upon pilot testing.

The survey tool was delivered in two manners by the researcher—online and hard copy with self-addressed, stamped envelopes to encourage broad participation. Data from the Job Satisfaction Survey was available online through a Survey Monkey® email collector (UWM; see Appendix E, Figure 4, University of Wisconsin Milwaukee- Survey Monkey Email Collector- May 23, 2012 Sample).

The data collection period began the week of May 23, 2012 and ended July 24th, 2012 post receipt of Institutional Review Board (IRB) approval,

which was obtained (May 2, 2012 – Exempt- #12.363) to administer the Job Satisfaction Survey during the summer of 2012 (see Appendix F, Figure 5 for IRB Approval Letter). The period was extended 11 days beyond the initial period end date of July 13th to allocate time for the two holidays (i.e., Memorial Day May 28th and the Fourth of July). The researcher assessed frequency of responses on a daily basis and determined that the holiday weeks interfered with survey administration (e.g., staff vacations). Follow ups were made by the researcher via email to Health Officers and the Commissioner of Health at eight points in time (5/18/12, 5/23/12, 5/30/12, 6/14/12, 6/26/12, 7/6/12, 7/11/12, 7/23/12) throughout the data collection period.

Analyses

In order to understand the influence of position type and generational grouping on Job Satisfaction of the local PHW sample, several statistical methods were selected to examine the research questions. According to the PHW study's Analytic Framework (Table 6), all variables were assessed.

Table 6. Analytic Framework

| <i>Research Questions</i> | <i>Variables</i> | <i>Proposed Analysis</i> |
|---|--|--|
| (1) Does Position Type influence Job Satisfaction? | <u>Dependent-</u> <u>Job Satisfaction:</u> -Pay -Promotion -Supervision -Fringe Benefits | <u>ALL: compare Job Satisfaction scores for Position Type (9 levels) to national public sector benchmark</u> (a) Assess total Job Satisfaction Scores per Position Type. |
| (a) What is the mean Job Satisfaction Score per Position Type? | -Contingent Rewards -Operating Procedures -Coworkers -Nature of Work -Communication | (b) Assess Job Satisfaction sub-scores per Position Type. (c) Assess Job Satisfaction Scores by socio-demographic variables. |
| (b) What are the Job Satisfaction sub-scores per Position Type? | <u>Independent-</u> <u>Position Type:</u> -Administrative; Public Health Nurses; oral health professionals; environmental health professionals; public health educators; nutritionists; | Descriptives (mean, median mode, range and standard deviation), frequencies. <u>One-way ANOVA,</u> <i>P value <0.05</i> <u>Post-hoc analysis</u> |
| (c) Are the Job Satisfaction scores statistically significant for Position Type when compared to other socio-demographic variables? | other professional staff – non-management; technical/paraprofessionals; and support staff. Necessary to collect <u>Socio-demographic variables:</u> (a) Gender, race/ ethnicity, sexual orientation, disability, educational attainment and military status. (b) Tenure in PH, at agency and in position. (c) PHAB knowledge and perception of attainment. | Tamhanes <i>P value <0.05</i> <u>Effect size:</u> <u>Adjusted R Squared-</u> <i>RMPE >0.04 SIG</i> <u>Chi-square (Pearson's) (x^2)</u> <i>Categorical & dichotomous.</i> <i><0.05</i> <i>Weighted average per socio-demographic variable compared to national public sector baseline (138)</i> <i>above= YES & below= NO.</i> |

Key: ANOVA- analysis of variance; DV- dependent variable; FB- fringe benefits; IV- independent variable; MG- generational grouping; NO- less satisfied; PH- public health; PHAB- Public Health Accreditation Board (accreditation); PHW- position type; RMPE- recommended minimum practically significant effect size; YES- more satisfied

| <i>Research Questions</i> | <i>Variables</i> | <i>Proposed Analysis</i> |
|---|---|--|
| (2) Does generational grouping (MG) influence Job Satisfaction? | <u>Dependent:</u> <u>Job Satisfaction:</u> -Pay -Promotion -Supervision -Fringe Benefits -Contingent Rewards -Operating Procedures -Coworkers -Nature of Work -Communication | <u>ALL:</u> <u>compare JS scores for MG (4 levels) to national public sector benchmark</u> (a) Assess total Job Satisfaction Scores per MG (b) Assess total Job Satisfaction sub-scores per MG (c) Assess Job Satisfaction Scores by socio-demographic variables |
| (a) What is the total Job Satisfaction Score per generational group? | <u>Independent</u> <u>Generational Grouping (name & year of birth):</u> based on year of birth-self-reported selection of one of the four groups: -Traditionalists- 1922-1945 -Baby Boomers-1946-1964 -Generation X- 1965-1980 -Generation Y- 1981-1993 | Descriptives (mean, median mode, range and standard deviation), frequencies <u>One-way ANOVA</u> , <i>P value <0.05</i> <u>Effect size:</u> <i>Adjusted R Squared- RMPE >0.04</i> <u>Chi-square (Pearson's) (χ^2)</u> <i>Categorical & dichotomous. <0.05</i> <i>Weighted average per socio-demographic variable compared to national public sector baseline (138) above= YES & below= NO.</i> |
| (b) What are the Job Satisfaction sub scores per generational group? | <u>Levels of measurement:</u> Nominal (PHW, MG) Interval (MG & JS) Necessary to collect <u>Socio-demographic variables:</u> (a) Gender, race/ ethnicity, sexual orientation, disability, educational attainment and military status. (b) Tenure in PH, at agency and in position. (c) PHAB knowledge and perception of attainment. | |
| (c) Are the Job Satisfaction scores statistically significant for generational grouping when compared to other socio-demographic variables? | | |

Key: ANOVA- analysis of variance; DV- dependent variable; FB- fringe benefits; IV- independent variable; MG-generational grouping; NO- less satisfied; PH- public health; PHAB- Public Health Accreditation Board (accreditation); PHW- position type; RMPE- recommended minimum practically significant effect size; YES- more satisfied

The study was approved by the University of Wisconsin-Milwaukee IRB before any data was collected. Descriptive data was used to answer the research question using the mean Job Satisfaction Survey format. The mean score and sub-score, standard deviation, lower and upper intervals for the 95

percent confidence interval were selected to assess group membership per independent variable. Respondents self-selected one mutually exclusive group identified by formal position type in public health and generational grouping by birth year. A brief description of position types and generational groups were provided to improve the frequency of accurate responses. The frequencies and standard deviation of mean Job Satisfaction scores and sub-scores were reviewed per position type and generational group variables. Post-evaluation of mean score and sub-scores, one-way ANOVA and effect size (Adjusted R squared; R^2) was performed. Specifically, the sum of squares between, degrees of freedom (df), mean square, F statistic, and p -value ($<.05$) were used to determine statistical significance. Effect size was provided for each mean Job Satisfaction score and sub-score. The purpose of including effect size is to facilitate future PHW research. Considering effect size represents true effect, the recommended minimum practically significant effect size (RMPE) is utilized to determine significance ($>.04$) (Ferguson, 2009). According to statistical significance of mean Job Satisfaction scores and sub-scores, Tamhanes post-hoc test ($T2$) was employed to detect the location of differences between groups of significant variables. Tamhanes, a more conservative test was preferred over Tukey, because the variances were not assumed to be equal. Furthermore, Tamhane's was not used for variables in which at least one group has two or fewer groups. Chi-square goodness of fit test (Pearson's) was performed to determine if proportions of position type,

generational grouping, and socio-demographic variables vary across groups. All variables were dichotomous. The mean Job Satisfaction score was assessed above or below the national baseline reported as the weighted mean (138). Degrees of freedom (df), chi-square (χ^2) and p -value were reported for each socio-demographic variable.

Summary of Methods and Procedures

In order to understand the influence of position type and generational grouping on Job Satisfaction of the local PHW, several statistical methods were selected to examine the research questions. Descriptive statistics (e.g., mean scores, standard deviation) were performed for socio-demographic, position type, and generational grouping variables on Job Satisfaction variables (i.e., overall mean score and nine sub-scores for count, mean, standard deviation as well as the upper and lower confidence interval limits). Comparison data for the total sample and the published public sector baseline was also included. One-way ANOVA, appropriate post-hoc testing (Tamhanes; $T2$), effect size (adjusted R-squared; R^2), and chi-square (χ^2) were performed as appropriate to determine statistical significance of study findings; these findings are provided per research question.

Chapter IV

Results

To recap, there are four specific aims for this research: (1) To obtain socio-demographic data from a sample of the PHW in Milwaukee County; (2) Determine their Job Satisfaction level (mean score and sub-scores); (3) Examine how Job Satisfaction level in the study sample compares to the national public sector baseline level; and (4) Examine the relationship of position type and generational grouping on Job Satisfaction among a sample of the PHW in Milwaukee County. The results will be presented in the following manner: (1) Description of sample; (2) Job Satisfaction level of Public Health Workforce sample; and (3) Overview of Research Question Results.

Description of sample

The majority of respondents completed the Job Satisfaction Survey online via the Survey Monkey's® email collector. The goal for power ($1-\beta=0.80$) was met by July 24, 2012; in total, 145 surveys were 100 percent complete. For 145 respondents started the online survey. 140 completed the online survey by the calendar deadline (97 percent completion). Additionally, five hard copy surveys were completed. The hard copies were either mailed to the researcher or placed in a sealed envelope for in-person pick-up by the

researcher. All hard copy surveys were manually entered into the survey database by the researcher.

The overall sample response was 45 percent. The response percentage was based on the sample size of 336; this was determined by subtracting the published number of FTEs in Milwaukee County (349) by the number of FTEs from the two health departments that did not participate in this voluntary survey (13 public health professionals were omitted). Upon review of results, the average time to complete the survey was reduced to ten minutes. In total, 150 respondents self-reported that they worked in Milwaukee County at a health department; however only 145 respondents completed the entire survey.

The Milwaukee County PHW study includes several socio-demographic variables: gender, ethnicity and race, disability status, educational attainment, sexual orientation and military status. Additionally, five supplemental questions were posed via the request of the Wisconsin DHS, Southeastern Regional Office: tenure in public health, at one's agency, and in current position variables as well as accreditation knowledge and perception of time to attain accreditation. The total count, percentage, and distribution per variable are included. Responses that had less than five respondents are not reported unless the category is classified as "not reported," "other" or "failed to respond."

Gender

Regarding gender, out of the 149 respondents for whom self-reported gender was available, 78.5 percent reported female ($n=117$) while approximately 20 percent reported male ($n=29$, 19.5 percent). Three respondents declined to respond (two percent) and one skipped the question (.7 percent).

Ethnicity and Race

Of the 147 respondents for whom self-reported race are available, the majority were white ($n=127$, 86.4 percent) followed by African American ($n=9$, 6.1 percent). The third largest group was “decline to respond” ($n=8$, 5.4 percent). Three respondents skipped the question ($n=3$, two percent). Other allowed respondents to provide qualitative information ($n=2$, 1.4 percent); one multi-racial and one “human.” One individual stated Latino in the other section for the race question. Of the 146 respondents for whom self-reported ethnicity are available, the majority stated that they are not of Latino descent ($n=134$, 91.8 percent). Approximately five percent noted that they were of Latino ($n=7$). Five declined to respond (3.4 percent) and four were not reported (2.7 percent).

Disability Status

Of the 148 respondents for whom self-reported disability status is available, 91.2 percent did not indicate that they are disabled ($n= 135$). Ten

respondents did affirm that they are disabled (6.8 percent). Three respondents declined to respond to the question (two percent) and two failed to complete the question (1.3 percent).

Educational Attainment

For educational attainment, of the 150 respondents for whom self-reported educational attainment are available, 59.3 percent reported having a bachelor's degree ($n=89$) followed by master's degree ($n=31$, 20.7 percent), high school diploma/ GED ($n=12$, eight percent), associate's degree ($n=11$, 7.3 percent). Five respondents reported "other" (three percent); two years and no associate's degree, two years college, two years technical school, 60 college credits, and continuing education classes (one each, respectively).

Sexual Orientation

In terms of sexual orientation, of the 149 respondents for who self-reported for this variable are available, 89.3 percent indicated that they are heterosexual ($n=133$). Eleven respondents declined to respond (7.3 percent). Five respondents are LGBT (3.3 percent).

Military Status

In consideration of military status, of the 148 respondents for whom self-reported military status are available, 94.6 percent reported that they have not served the United States military in any capacity ($n=140$). Four

respondents claimed veteran status (2.7 percent). Two declined to respond and two skipped the question (1.3 percent respectively).

Tenure in Public Health: Profession, Agency, Position

Tenure questions used the same set of mutually exclusive groups by year. Of the 150 respondents for whom self-reported years worked in public health (tenure in field) are available, the majority noted that they have been in the profession for over 20 years ($n=42$, 28 percent). One to four years was the second highest category ($n=26$, 17.3 percent) followed by five to nine and ten to fourteen years (tied at $n=24$, 16 percent). Fifteen to 19 years was the fourth reported category ($n=23$, 15.3 percent). Lastly, less than one year was reported ($n=11$, 7.3 percent).

Of the 149 respondents for whom self-reported years worked at current agency/place of employment (tenure at agency) are available, the bulk of respondents reported working at the same agency for more than 20 years ($n=35$, 23.5 percent) followed by five to nine years ($n=28$, 18.8 percent), one to four years ($n=27$, 18.1 percent) and ten to fourteen years ($n=24$, 16.1). The last two categories reported were 15-19 years ($n=18$, 23.5 percent) and less than one year ($n=17$, 11.4 percent).

For the 148 respondents for whom self-reported years in current position (tenure in position) are available, the top three responses for years in current position were: one to four ($n=48$, 32.4 percent), five to nine ($n=28$, 18.9 percent), and ten to fourteen ($n=22$, 14.9 percent). The bottom three

responses were less than one year ($n=18$, 12.2 percent), over 20 years ($n=17$, 11.5 percent), and 15-19 years ($n=15$, 10.1 percent). Two respondents elected not to respond (1.3 percent).

Accreditation Knowledge and Attainment

The final two questions were added per the request of the State of Wisconsin, Southeastern Regional Office of DHS. Of the 149 respondents for whom self-reported knowledge of public health accreditation (PHAB) are available, two-thirds acknowledged that they understood the importance of PHAB for their agency ($n=111$, 74.5 percent) while sixteen percent of respondents did not ($n=16$). Approximately nine percent of respondents never heard about PHAB before ($n=14$). For those that acknowledged that they knew what PHAB was, 35 percent claimed that it will take two to three years for their agency to become accredited ($n=51$) while 30 percent noted it will take three to five years ($n=45$) and fifteen percent stated less than one year ($n=22$). Twelve percent noted they never heard of PHAB before ($n=18$) and approximately seven percent noted that their agency would not be able to obtain public health accreditation at all ($n=10$).

Summary of Socio-demographic Description of Milwaukee County Public Health Workforce Sample

Table 7 provides a summary of Milwaukee County's PHW sample. The PHW in Milwaukee County is predominately female (79%), white (86%), non-

Hispanic (92%), and heterosexual (89%). Approximately two-thirds of the PHW has bachelor degrees (59%) while one third (28%) have been public health professionals for over 20 years and in their current position for one to four years (32%). One quarter of the PHW has been with the same public health agency for more than 20 years (24%). In terms of accreditation (PHAB), two-thirds (75%) acknowledged the importance of attainment while a third (35%) claimed their agency would take two to three years to become accredited.

Table 7. Summary of Milwaukee County's Public Health Workforce Sample- Socio-demographic Description, 2012.

Job Satisfaction Level of

Milwaukee County's Public

Health Workforce Sample

The mean Job Satisfaction score was 133 ($SD=24.8$) for the Milwaukee County PHW study

| <i>Variable</i> | <i>Greatest %</i> |
|-------------------------|-------------------|
| Gender | Female 79% |
| Race | White 86% |
| Ethnicity | Non-Hispanic 92% |
| Disability | Non-disabled 91% |
| Edu. Attainment | Bachelors 59% |
| Sex. Orientation | Heterosexual 89% |
| Military | Non-military 95% |
| Tenure | |
| Public Health | Over 20 years 28% |
| Agency | Over 20 years 24% |
| Position | 1-4 years 32% |
| PHAB Knowledge | Affirmed 75% |
| PHAB Perception | 2-3 years 35% |

sample compared to the national public sector mean baseline of 138. The mean PHW Job Satisfaction score is the lowest compared to public, private, non-profit, academia, medical, and nursing sectors/ professions (Table 8).

Table 8. Mean Job Satisfaction Scores- Cross- sector Comparison

| <i>JSS</i> | <i>US</i> | <i>Public</i> | <i>Private</i> | <i>Non-Profit</i> | <i>Academia</i> | <i>Medical</i> | <i>Nursing</i> | <i>PHW</i> |
|-------------|-----------|---------------|----------------|-------------------|-----------------|----------------|----------------|------------|
| Mean | 138.7 | 138.3 | 141.2 | 136.8 | 137.2 | 135.8 | 134.4 | 133 |
| SD | 21 | 27.9 | 9.3 | 9.9 | 8.1 | 15.3 | 12.2 | 24.8 |

(Spector, 1994)

Degrees of freedom (*df*), chi-square value (χ^2) and *p-value* were reported for each socio-demographic and independent variable. Generational grouping was the only independent variable that demonstrated statistical significance for the mean Job Satisfaction score (Table 9). Overall, the greatest Job Satisfaction scores were reported for Generation Y ($m=141$, $SD=26.1$) and Public Health Educators ($m=155$, $SD=17.9$). Traditionalists and Generation X were tied for least satisfied.

Table 9. Sample of Milwaukee County's Public Health Workforce-Chi square Analyses for Job Satisfaction- Position Type and Generational Grouping

| <i>Variables</i> | <i>df</i> | χ^2 | <i>p</i> |
|---|-----------|------------|----------------------------------|
| Generational grouping | 3 | 9.7 | .021* |
| Position Type | 7 | 2.7 | .906 |
| KEY: | | | |
| <i>CV based on degrees of freedom per attribute at 0.05, 2 tailed</i> | | | *$p < 0.05$ |

Job Satisfaction levels were not statistically significant at the macro level for socio-demographic variables (Table 10). Job Satisfaction levels were statistically significant for position type at the micro level (i.e., promotion, operating procedures, coworkers, and contingent rewards sub-scores). Statistically significant differences were detected between Administrators and PHNs for promotion; Administrators and Support Staff for operating procedures; PHNs and Other Professional Staff for coworkers; and Administrators and Support Staff for contingent rewards.

Table 10. Milwaukee County's Public Health Workforce-Chi square Analyses for Job Satisfaction- Sociodemographic Variables

| <i>Variables</i> | <i>df</i> | <i>x²</i> | <i>p</i> |
|---|-----------|----------------------|--------------------|
| Gender | 2 | .486 | .784 |
| Race | 4 | 3.463 | .484 |
| Ethnicity | 2 | 1.866 | .393 |
| Sexual Orientation | 3 | 6.281 | .099 |
| Disability | 2 | 1.651 | .438 |
| Educational Attainment | 5 | 4.307 | .506 |
| Military Status | 4 | 2.001 | .736 |
| KEY: | | | |
| <i>CV based on degrees of freedom per attribute at 0.05, 2 tailed</i> | | | <i>*p <0.05</i> |

Overview of Research Question Results

The next step in the study was to determine the Job Satisfaction levels per independent variable: *position type* and *generational grouping*. The respective tables include scores for each independent variable and the nine subscales for count, mean, standard deviation as well as the upper and lower confidence interval limits. Comparison data for the total sample and the published public sector baseline is included in each table. One-way ANOVA, appropriate post-hoc testing and effect size (adjusted R-squared), and chi-square (x^2) were performed as appropriate to determine statistical significance of study findings; these findings are provided per research question.

Research Question 1—Does Position Type Influence Job Satisfaction?

First, the distribution of position types for the study sample is provided. For the 149 respondents for whom self-reported primary job

function in public health are available, PHN was the most reported job function ($n=49$, 32.7 percent) followed by Administration (e.g., Health Officer, Directors, Managers) ($n=35$, 23.3 percent) and Support Staff (e.g., clerical/ Office Assistants) ($n=20$, 13.3 percent). Environmental Health Professionals (e.g., Sanitarian, Lead Assessor) was the fourth most reported category ($n=17$, 11.3 percent). Eleven respondents indicated that they are “Other Professional Staff/non-management (e.g., laboratory staff)” (7.3 percent). Six respondents acknowledged that they are technical/ paraprofessionals (e.g., Outreach Worker, database) (four percent) followed by five Public Health Educators and Nutritionists (e.g., including the Womens, Infants, and Children food program; WIC), respectively (3.3 percent). One respondent was an Oral Health Professional (e.g., Dental Hygienist, Dentist) (.7 percent).

What is the Mean Job Satisfaction Score per Position Type?

The mean Job Satisfaction score for position type was 133 ($SD=24.8$); this is indicated in Figure 6, Milwaukee County’s Public Health Workforce Sample- Mean Job Satisfaction Scores by Position Type. Public Health Educators had the highest satisfaction ($m=155$, $SD=17.9$) followed by Nutritionists ($m=150$, $SD=22.5$) and Support Staff ($m=140$, $SD=34.2$). The fourth satisfied group was Other Professional Staff ($m=135$, $SD=17.3$). Administration and PHN was tied for fifth ($m=131$, $SD=21.4$ and $m=132$, $SD=24.7$) respectively. Technical/Paraprofessionals were the second to lowest

satisfied ($m=128$, $SD=25.6$). Environmental Health Professionals were the least satisfied of all groups ($m=127$, $SD=23.3$).

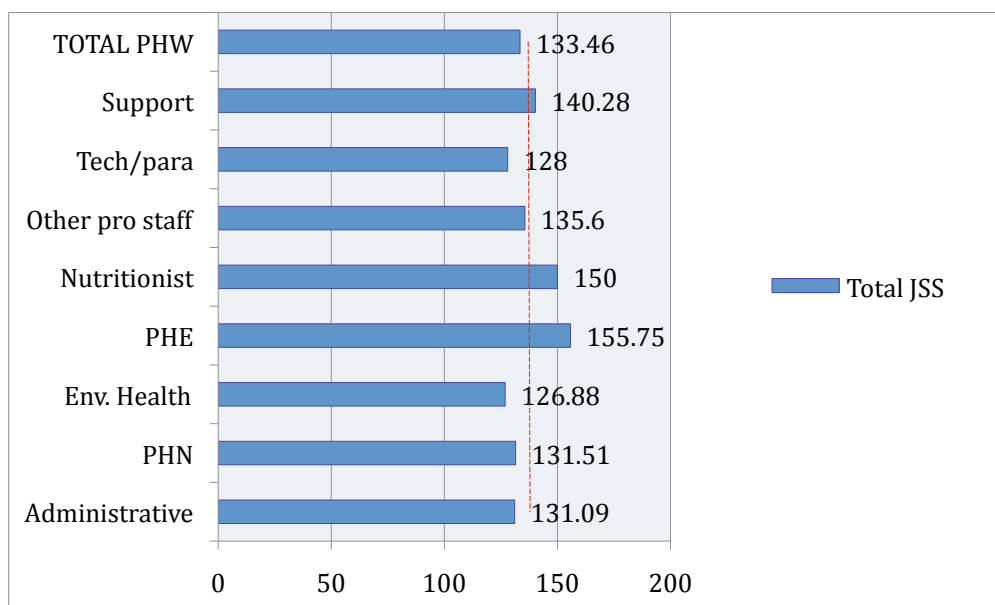


Figure 6. Milwaukee County's Public Health Workforce Sample- Mean Job Satisfaction Scores by Position Type

What are the Job Satisfaction Sub-scores per Position Type?

For the Milwaukee County PHW sample, the sub-scores are approximately the same by position type and generational grouping however position type and Job Satisfaction sub-scores varied. The results will be presented as the greatest group mean sub-scores compared to lowest group mean sub-scores to demonstrate the impact of position type on scoring; standard deviation will also be presented for the study sample. Additional detail pertaining to Job Satisfaction sub-scores per position type can be located in Tables 11 to 19 Mean Job Satisfaction Sub-scores of Milwaukee County's Public Health Workforce Sample by Position Type. The tables include Job Satisfaction sub-scores per position type (JSS), number of

respondents (n), mean, standard deviation (SD), lower and upper confidence intervals at 95 percent (CI).

Pay- According to Table 11, the mean sub-score for pay is 10.8 ($SD=4.6$). This is lower than the published public sector mean baseline of 12.1 ($SD=2.5$). Nutritionists had the highest reported mean sub-score of 15.8 ($SD=4.76$) compared to PHN, which had the lowest reported mean sub-score of 9.9 ($SD=4.48$).

Table 11. Mean Job Satisfaction Pay Sub-scores of Milwaukee County's Public Health Workforce Sample by Position Type.

| <i>JSS</i> | <i>IV</i> | <i>N</i> | <i>Mean</i> | <i>SD</i> | <i>CI-Lower</i> | <i>CI-Upper</i> |
|------------|-------------------|----------|-------------|-----------|-----------------|-----------------|
| Pay | | | | | | |
| | Administrative | 33 | 10.56 | 4.29 | 9.02 | 12.07 |
| | PHN | 47 | 9.89 | 4.48 | 8.58 | 11.21 |
| | Oral Health | 1 | 14 | x | x | x |
| | Env. Health | 17 | 11 | 5.3 | 8.27 | 13.72 |
| | PHE | 5 | 15.8 | 4.76 | 9.88 | 21.71 |
| | Nutritionist | 5 | 11.4 | 6.5 | 3.32 | 19.48 |
| | Other pro staff | 11 | 11.18 | 3.28 | 8.98 | 13.39 |
| | Tech/para | 5 | 10.4 | 4.21 | 5.16 | 15.64 |
| | Support | 20 | 11.6 | 4.75 | 9.38 | 13.82 |
| | TOTAL PHW | 144 | 10.81 | 4.6 | 10.05 | 11.57 |
| | Public Sector JSS | | 12.1 | 2.5 | | |

Promotion- According to Table 12, the mean sub-score for promotion is 9.7 ($SD=4.16$); this is also lower than the published public sector mean baseline of 11.9 ($SD=1.9$). Nutritionists also had the highest reported mean sub-score of 12.2 ($SD=6.57$) compared to Technical/ Paraprofessionals, which had had the lowest reported mean sub-score of 7.2 ($SD=3.77$).

Table 12. Mean Job Satisfaction Promotion Sub-scores of Milwaukee County's Public Health Workforce Sample by Position Type.

| <i>JSS</i> | <i>IV</i> | <i>N</i> | <i>Mean</i> | <i>SD</i> | <i>CI-Lower</i> | <i>CI-Upper</i> |
|------------------|-------------------|----------|-------------|-----------|-----------------|-----------------|
| Promotion | | | | | | |
| | Administrative | 33 | 11.67 | 3.7 | 10.35 | 12.98 |
| | PHN | 45 | 8.84 | 3.92 | 7.67 | 10.02 |
| | Oral Health | 1 | 12 | x | x | x |
| | Env. Health | 17 | 9.06 | 3.31 | 7.36 | 10.76 |
| | PHE | 5 | 10.6 | 4.16 | 5.44 | 15.76 |
| | Nutritionist | 5 | 12.2 | 6.57 | 4.04 | 20.36 |
| | Other pro staff | 11 | 9.18 | 3.71 | 6.69 | 11.67 |
| | Tech/para | 5 | 7.2 | 3.77 | 2.52 | 11.88 |
| | Support | 20 | 8.95 | 4.99 | 6.61 | 11.29 |
| | TOTAL PHW | 142 | 9.71 | 4.17 | 9.02 | 10.4 |
| | Public Sector JSS | | 11.9 | 1.9 | | |

Supervision- According to Table 13, the mean sub-score for supervision is 18.9 ($SD=5.1$) for the target population. This is slightly lower than the published public sector mean baseline of 19.1 ($SD=1.5$). Nutritionists had the highest reported sub-score of 22 ($SD=1.58$) compared to mean sub-score of Environmental Health Professionals at 16.7 ($SD=5.68$).

Table 13. Mean Job Satisfaction Supervision Sub-scores of Milwaukee County's Public Health Workforce Sample by Position Type.

| <i>JSS</i> | <i>IV</i> | <i>N</i> | <i>Mean</i> | <i>SD</i> | <i>CI-Lower</i> | <i>CI-Upper</i> |
|--------------------|-------------------|----------|-------------|-----------|-----------------|-----------------|
| Supervision | | | | | | |
| | Administrative | 32 | 18.19 | 5.26 | 16.29 | 20.08 |
| | PHN | 47 | 19.77 | 4.31 | 18.5 | 21.03 |
| | Oral Health | 1 | 24 | x | x | x |
| | Env. Health | 17 | 16.71 | 5.68 | 13.79 | 29.62 |
| | PHE | 5 | 20.2 | 4.09 | 15.13 | 25.27 |
| | Nutritionist | 5 | 22 | 1.58 | 20.04 | 23.96 |
| | Other pro staff | 10 | 19.3 | 5.33 | 15.48 | 23.12 |
| | Tech/para | 5 | 17.6 | 5.68 | 10.54 | 24.65 |
| | Support | 20 | 18.3 | 6.28 | 15.36 | 21.24 |
| | TOTAL PHW | 142 | 18.85 | 5.1 | 18 | 19.7 |
| | Public Sector JSS | | 19.1 | 1.5 | | |

Fringe Benefits- According to Table 14, the mean sub-score for fringe benefits is 14.6 ($SD=4.2$) for the target population. This is slightly greater than the published public sector mean baseline of 14.4 ($SD=2$). Other professional staff reported the highest sub-score of 16.3 ($SD=3.29$) compared to PHNs at 13.4 ($SD=4.82$).

Table 14. Mean Job Satisfaction Fringe Benefits Sub-scores of Milwaukee County's Public Health Workforce Sample by Position Type.

| <i>JSS</i> | <i>IV</i> | <i>N</i> | <i>Mean</i> | <i>SD</i> | <i>CI-Lower</i> | <i>CI-Upper</i> |
|------------------------|-------------------|----------|-------------|-----------|-----------------|-----------------|
| Fringe Benefits | | | | | | |
| | Administrative | 33 | 14.88 | 3.46 | 13.65 | 16.1 |
| | PHN | 47 | 13.38 | 4.82 | 11.97 | 14.8 |
| | Oral Health | 1 | 10 | x | x | x |
| | Env. Health | 17 | 14.65 | 3.5 | 12.85 | 16.45 |
| | PHE | 4 | 15.75 | 4.72 | 8.24 | 23.26 |
| | Nutritionist | 4 | 14.75 | 6.7 | 4.09 | 25.41 |
| | Other pro staff | 11 | 16.27 | 3.29 | 14.06 | 18.48 |
| | Tech/para | 5 | 14 | 2.92 | 10.38 | 17.62 |
| | Support | 20 | 15.95 | 4.38 | 13.9 | 18 |
| | TOTAL PHW | 142 | 14.57 | 4.23 | 13.87 | 15.27 |
| | Public Sector JSS | | 14.4 | 2 | | |

Contingent Rewards- According to Table 15, the mean sub-score for contingent rewards is 13.2 ($SD=4.8$) for the target population. This is minimally lower than the published public sector mean baseline of 13.5 ($SD=1.8$). Public Health Educators reported the highest sub-score of 15.8 ($SD=7.09$). There was a tie for lowest reported sub-score between Administrators at 12.8 ($SD=3.97$) and Support Staff at 12.8 ($SD=6.09$).

Table 15. Mean Job Satisfaction Contingent Rewards Sub-scores of Milwaukee County's Public Health Workforce Sample by Position Type.

| <i>JSS</i> | <i>IV</i> | <i>N</i> | <i>Mean</i> | <i>SD</i> | <i>CI-Lower</i> | <i>CI-Upper</i> |
|---------------------------|-------------------|----------|-------------|-----------|-----------------|-----------------|
| Contingent Rewards | | | | | | |
| | Administrative | 33 | 12.79 | 3.97 | 11.38 | 14.19 |
| | PHN | 47 | 13.53 | 4.85 | 12.11 | 14.96 |
| | Oral Health | 0 | x | x | x | x |
| | Env. Health | 17 | 11.82 | 4.42 | 9.55 | 14.1 |
| | PHE | 5 | 15.8 | 7.09 | 7 | 24.6 |
| | Nutritionist | 5 | 15.2 | 5.54 | 8.32 | 22.08 |
| | Other pro staff | 11 | 14.45 | 3.72 | 11.95 | 16.96 |
| | Tech/para | 5 | 14 | 4.41 | 8.51 | 19.48 |
| | Support | 20 | 12.8 | 6.09 | 9.95 | 15.65 |
| | TOTAL PHW | 143 | 13.28 | 4.8 | 12.49 | 14.07 |
| | Public Sector JSS | | 13.5 | 1.8 | | |

Operating Procedures- According to Table 16, the mean sub-score for operating procedures is 13.4 ($SD=4$) for the target population. This is higher than the published public sector mean baseline of 12.9 ($SD=2$). Nutritionists had the highest sub-score 17.4 ($SD=3.5$) compared to Administrators at 12 ($SD=3.34$).

Table 16. Mean Job Satisfaction Operating Procedures Sub-scores of Milwaukee County's Public Health Workforce Sample by Position Type.

| <i>JSS</i> | <i>IV</i> | <i>N</i> | <i>Mean</i> | <i>SD</i> | <i>CI-Lower</i> | <i>CI-Upper</i> |
|-----------------------------|-------------------|----------|-------------|-----------|-----------------|-----------------|
| Operating Procedures | | | | | | |
| | Administrative | 33 | 12 | 3.34 | 10.81 | 13.19 |
| | PHN | 46 | 12.71 | 4.24 | 11.46 | 13.98 |
| | Oral Health | 1 | 13 | x | x | x |
| | Env. Health | 17 | 13.23 | 2.8 | 11.8 | 13.98 |
| | PHE | 5 | 12.4 | 2.07 | 9.83 | 14.97 |
| | Nutritionist | 5 | 17.4 | 3.5 | 12.96 | 21.84 |
| | Other pro staff | 10 | 13.7 | 2.67 | 11.79 | 15.6 |
| | Tech/para | 5 | 13.8 | 3.56 | 9.37 | 18.22 |
| | Support | 19 | 16.37 | 4.92 | 14 | 18.74 |
| | TOTAL PHW | 141 | 13.37 | 4.01 | 12.71 | 14.04 |
| | Public Sector JSS | | 12.9 | 2 | | |

Co-workers- According to Table 17, the mean sub-score for co-workers is 18.3 ($SD=3.7$) for the target population. This is slightly higher than the published public sector mean baseline of 17.9 ($SD=1.5$). PHNs had the highest sub-score of 19.8 ($SD=3.13$) compared to Other Professional Staff with the lowest reported sub-score of 16.2 ($SD=2.56$).

Table 17. Mean Job Satisfaction Co-workers Sub-scores of Milwaukee County's Public Health Workforce Sample by Position Type.

| <i>JSS</i> | <i>IV</i> | <i>N</i> | <i>Mean</i> | <i>SD</i> | <i>CI-Lower</i> | <i>CI-Upper</i> |
|-------------------|-------------------|----------|-------------|-----------|-----------------|-----------------|
| Co-workers | | | | | | |
| | Administrative | 33 | 17.21 | 3.53 | 15.96 | 18.47 |
| | PHN | 47 | 19.81 | 3.13 | 18.89 | 20.72 |
| | Oral Health | 1 | 20 | x | x | x |
| | Env. Health | 17 | 18.41 | 3.39 | 16.67 | 20.16 |
| | PHE | 5 | 17.8 | 4.76 | 11.88 | 23.72 |
| | Nutritionist | 5 | 18.6 | 4.1 | 13.51 | 23.69 |
| | Other pro staff | 11 | 16.18 | 2.56 | 14.46 | 17.9 |
| | Tech/para | 5 | 18.4 | 3.71 | 13.79 | 23 |
| | Support | 20 | 17.25 | 4.81 | 15 | 19.5 |
| | TOTAL PHW | 144 | 18.26 | 3.72 | 17.64 | 18.87 |
| | Public Sector JSS | | 17.9 | 1.5 | | |

Nature of Work- According to Table 18, the mean sub-score for nature of work is 19.3 ($SD=4$) for the target population. This is greater than the published public sector mean baseline of 18.9 ($SD=1.7$). Public Health Educators reported the highest sub-score of 21.8 ($SD=1.79$) compared to PHNs with the lowest reported sub-score of 18.7 ($SD=4.36$).

Table 18. Mean Job Satisfaction Nature of Work Sub-scores of Milwaukee County's Public Health Workforce Sample by Position Type.

| <i>JSS</i> | <i>IV</i> | <i>N</i> | <i>Mean</i> | <i>SD</i> | <i>CI-Lower</i> | <i>CI-Upper</i> |
|-----------------------|-------------------|----------|-------------|-----------|-----------------|-----------------|
| Nature of Work | | | | | | |
| | Administrative | 33 | 19.37 | 3.62 | 18.07 | 20.65 |
| | PHN | 46 | 18.67 | 4.36 | 17.38 | 19.97 |
| | Oral Health | 1 | 24 | x | x | x |
| | Env. Health | 17 | 19.88 | 3.3 | 18.19 | 21.58 |
| | PHE | 5 | 21.8 | 1.79 | 19.58 | 24.02 |
| | Nutritionist | 5 | 20 | 2.45 | 16.96 | 23.04 |
| | Other pro staff | 11 | 19 | 5.21 | 15.5 | 22.5 |
| | Tech/para | 5 | 20 | 2.73 | 16.6 | 23.4 |
| | Support | 20 | 19.45 | 4.41 | 17.39 | 21.51 |
| | TOTAL PHW | 143 | 19.35 | 3.97 | 18.69 | 20 |
| | Public Sector JSS | | 18.9 | 1.7 | | |

Overall Communication- According to Table 19, the mean sub-score for overall communication is 14.5 ($SD=4.7$) for the target population; this is the same as the published public sector mean baseline of 14.5 ($SD=2.2$).

Nutritionists had the highest overall sub-score of 18.2 ($SD=3.27$) compared to Environmental Health Professionals with the lowest reported sub-score of 12.1 ($SD=4.87$).

Table 19. Mean Job Satisfaction Communication Sub-scores of Milwaukee County's Public Health Workforce Sample by Position Type.

| <i>JSS</i> | <i>IV</i> | <i>N</i> | <i>Mean</i> | <i>SD</i> | <i>CI-Lower</i> | <i>CI-Upper</i> |
|----------------------|-------------------|----------|-------------|-----------|-----------------|-----------------|
| Communication | | | | | | |
| | Administrative | 33 | 14 | 4.67 | 12.34 | 15.65 |
| | PHN | 47 | 15.49 | 4.3 | 14.23 | 16.75 |
| | Oral Health | 1 | 21 | x | x | x |
| | Env. Health | 17 | 12.11 | 4.87 | 9.61 | 14.62 |
| | PHE | 5 | 13.8 | 5.17 | 7.38 | 20.21 |
| | Nutritionist | 5 | 18.2 | 3.27 | 14.14 | 22.26 |
| | Other pro staff | 11 | 13.64 | 3.44 | 11.32 | 15.95 |
| | Tech/para | 5 | 12.6 | 3.78 | 7.9 | 17.3 |
| | Support | 19 | 15.26 | 5.4 | 12.66 | 17.87 |
| | TOTAL PHW | 143 | 14.54 | 4.65 | 13.78 | 15.32 |
| | Public Sector JSS | | 14.5 | 2.2 | | |

Summary of Job Satisfaction Sub-scores per Position Type

Nutritionists had the highest reported Job Satisfaction mean sub-scores for promotion, supervision, operating procedures, and overall communication; this is the greatest frequency of affirmative mean sub-scores among all other position types (see Table 20). Public Health Educators had the second highest frequency of affirmative responses per mean sub-score (pay, contingent rewards, nature of work). PHNs had the greatest frequency of low mean sub-scores (pay, fringe benefits, nature of work) followed by a tie between Administrators (contingent rewards and operating procedures) and Environmental Health Professionals (supervision and communication).

Table 20. Mean Job Satisfaction Scores of Milwaukee County's Public Health Workforce Sample by Position Type.

| <i>Total JSS</i> | <i>IV</i> | <i>N</i> | <i>Mean</i> | <i>SD</i> | <i>CI-Lower</i> | <i>CI-Upper</i> |
|------------------|-------------------|----------|-------------|-----------|-----------------|-----------------|
| | Administrative | 32 | 131.09 | 21.35 | 123.39 | 138.79 |
| | PHN | 43 | 131.51 | 24.66 | 123.92 | 139.1 |
| | Oral Health | 0 | x | x | x | x |
| | Env. Health | 17 | 126.88 | 23.26 | 114.92 | 138.84 |
| | PHE | 4 | 155.75 | 17.95 | 127.18 | 184.31 |
| | Nutritionist | 4 | 150 | 22.55 | 114.11 | 185.89 |
| | Other pro staff | 10 | 135.6 | 17.27 | 123.24 | 147.95 |
| | Tech/para | 5 | 128 | 25.56 | 96.25 | 159.74 |
| | Support | 18 | 140.28 | 34.18 | 123.28 | 157.28 |
| | TOTAL PHW | 133 | 133.46 | 24.8 | 129.21 | 137.72 |
| | Public Sector JSS | | 138.3 | 27.9 | | |

Are the Job Satisfaction Scores Statistically Significant for Position Type When Compared to Other Socio-demographic Variables?

One-way ANOVA was performed for position type and generational grouping, independently in SPSS. The degrees of freedom per variable were

reported. The sum of squares between (SS)- mean square (MS), *F* statistic, *p*-value, and effect size (Adjusted R-squared; *R*²) is provided for the mean Job Satisfaction score and sub-score. The level of significance is *p*<.05.

Table 21. Milwaukee County's Public Health Workforce Sample- Job Satisfaction Survey Mean Scores and Sub-scores per Generational Grouping and Position Type- One-way ANOVA and Effect Size.

| JSS | IV | df | Mean Sq. | F | <i>p</i><.05 | <i>ES</i> >.04 (adj <i>R</i>²) |
|------------------------|-----------------|-----------|-----------------|----------|------------------------|---|
| Pay | SS-Between- MG | 3 | 37.21 | 1.79 | 0.152 | 0.016 |
| | SS-Between- PHW | 7 | 26.2 | 1.25 | 0.281 | 0.012 |
| Promotion | SS-Between- MG | 3 | 22.52 | 1.31 | 0.273 | 0.007 |
| | SS-Between- PHW | 7 | 35.47 | 2.14 | 0.043* | 0.054* |
| Supervision | SS-Between- MG | 3 | 52.88 | 2.02 | 0.113 | 0.021 |
| | SS-Between- PHW | 7 | 29.44 | 1.14 | 0.343 | 0.007 |
| Fringe Benefits | SS-Between- MG | 3 | 14.35 | 0.802 | 0.495 | (-0.004) |
| | SS-Between- PHW | 7 | 20.95 | 1.18 | 0.318 | 0.009 |
| Cont. Rewards | SS-Between- MG | 3 | 19.79 | 0.85 | 0.467 | (-0.003) |
| | SS-Between- PHW | 7 | 17.09 | 0.733 | 0.644 | (-0.013) |
| Op. Procedures | SS-Between- MG | 3 | 9.81 | 0.6 | 0.616 | (-0.009) |
| | SS-Between- PHW | 7 | 48.65 | 3.36 | 0.003* | 0.016* |
| Coworkers | SS-Between- MG | 3 | 23.64 | 1.73 | 0.165 | 0.015 |
| | SS-Between- PHW | 7 | 31.28 | 2.41 | 0.024* | 0.065* |
| Nature of Work | SS-Between- MG | 3 | 11.81 | 0.73 | 0.54 | (-0.006) |
| | SS-Between- PHW | 7 | 8.78 | 0.546 | 0.799 | (-0.023) |
| Communication | SS-Between- MG | 3 | 35.31 | 1.67 | 0.179 | 0.014 |
| | SS-Between- PHW | 7 | 37 | 1.783 | 0.096 | 0.037 |
| Total JSS | SS-Between- MG | 3 | 877.51 | 1.44 | 0.235 | 0.01 |
| | SS-Between- PHW | 7 | 741.59 | 1.22 | 0.297 | 0.012 |

KEY: MG= Generational Grouping; PHW= Position Type
 * denotes significant findings
P <.05 while *ES* >0.04 according to Ferguson (2009) Recommended Minimum Practically Significant Effect Size (RMPE)

Considering effect size represents true effect, the recommended minimum practically significant effect size (RMPE) is utilized to determine significance ($>.04$) (Ferguson, 2009). According to Table 21, *Milwaukee County's Public Health Workforce Sample- Job Satisfaction Survey Mean Score and Sub-scores per Generational Grouping and Position Type- One-Way ANOVA and Effect Size*, three sub-scores were statistically significant: Operating Procedures (49, $F= 3.36$, $p= .003$, $R^2= .106$); Promotion (35.5, $F= 2.14$, $p= .043$, $R^2= .054$) and Co-workers (31.3, $F= 2.41$, $p= .024$, $R^2= .065$).

Post Hoc Analysis Results

Post hoc analyses (Tukey and Tamhane's) were performed to determine the differences between groups. Tamhane's ($T2$) was selected because variances were not assumed to be equal such as the Tukey test (see Table 22). The Oral Health Professional was removed from the post-hoc analyses because only one respondent self-reported in the study; this is not appropriate for the post-hoc analysis. Considering that the post-hoc analysis contained numerous variables, only the statistically significant mean Job Satisfaction scores and sub-scores were reported.

Table 22. Mean Job Satisfaction Scores and Sub-scores of Milwaukee County's Public Health Workforce Sample by Position Type-Post Hoc Analyses-Tamhane's.

| <i>Job Satisfaction Sub-Scales</i> | <i>Independent variables</i> | <i>Mean Job Satisfaction Sub-Scores</i> | <i>SD</i> | <i>p</i> |
|---|------------------------------|---|-----------|----------|
| Promotion | Administrative | 11.67 | 3.7 | 0.049* |
| | PHN | 8.84 | 3.9 | |
| Contingent Rewards | Administrative | 12.79 | 3.97 | 0.003** |
| | Support Staff | 12.8 | 6.09 | |
| Operating Procedures | Administrative | 12 | 3.34 | 0.051* |
| | Support Staff | 16.37 | 4.92 | |
| Coworkers | PHN | 19.81 | 3.13 | 0.022* |
| | Other pro staff | 16.18 | 2.56 | |
| KEY: <i>NS= not significant subscales: pay, supervision, fringe benefits, nature of work, overall communications and total Job Satisfaction Score are not reported in this table.</i> <i>* Significant subscales at P <0.05 Tamhanes (T2)</i> <i>**Not detected in ANOVA</i> | | | | |

Four significant results were detected via post hoc testing at $p < .05$ for position type: promotion for Administrators and PHN (-2.82, $p = .049$); contingent rewards for Administrators and Support Staff (-4.37, $p = .003$); operating procedures for Administrators and Support Staff (-4.37, $p = .051$); and coworkers for PHN and Other Professional Staff (3.63, $p = .022$).

Research Question 2—Does Generational Grouping Influence Job Satisfaction?

First, the distribution of generational groups for the study sample is provided. First, all 150 respondents answered the generational grouping question. The majority of respondents indicated that they were Baby Boomers (1946-1964, $n = 83$, 55.3 percent). The second largest group reflected in the study was Generation X (1965-1980, $n = 45$, 30 percent) while

Generation Y (1981-1993) represented 13.3 percent of the PHW ($n=20$). The Traditionalist group was divided by pre-1921 and between the years 1922-1945. Two respondents selected the latter Traditionalist group of 1922-1945 (1.3 percent).

What is the Mean Job Satisfaction Score per Generational Group?

The mean Job Satisfaction score for generational grouping was 133 ($SD= 24.8$, variance= 616). The score is slightly lower than the public sector's mean score of 138 ($SD=27.9$) as indicated by the dashed line in Figure 7.

Traditionalists and Generation X had the lowest mean Job Satisfaction scores (127, $SD= 2.12$ and 127, $SD=23$ respectively). Baby Boomers had the second highest mean Job Satisfaction score (134, $SD=25.4$) while Generation Y had the highest mean Job Satisfaction score (141, $SD=26.1$).

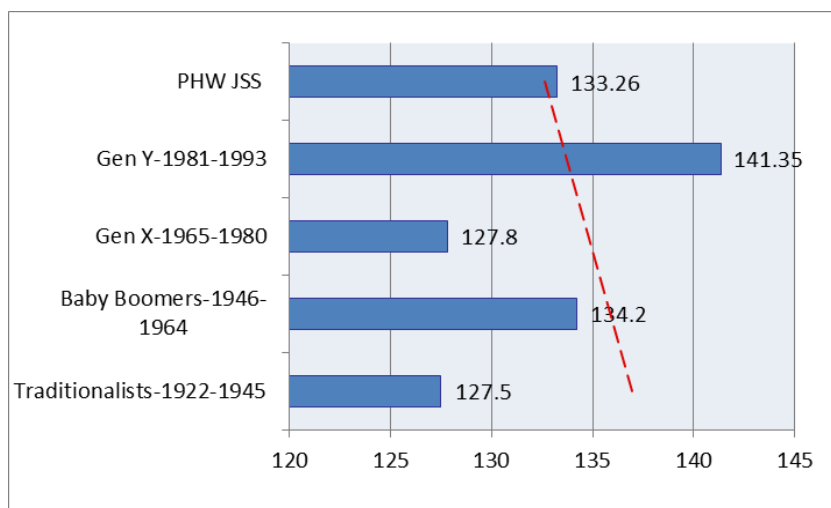


Figure 7. Milwaukee County's Public Health Workforce Sample-Mean Job Satisfaction Score by Generational Grouping.

What are the Job Satisfaction Sub scores per Generational Group?

For the Milwaukee County PHW sample, the overall sub-scores are approximately the same by position type and generational grouping however variance exists for generational grouping among Job Satisfaction sub-scores. The results will be presented as the greatest groups compared to lowest group mean sub-score to demonstrate the impact of generational grouping on scoring. Additional detail pertaining to Job Satisfaction sub-scores per generational grouping can be located in Tables 23 to 31, Mean Job Satisfaction Scores and Sub-scores of Milwaukee County's Public Health Workforce Sample by Generational Grouping. The tables include Job Satisfaction sub-scores per generational grouping (JSS), number of respondents (n), mean, standard deviation (SD), lower and upper confidence intervals at 95 percent (CI).

Pay- According to Table 23, the mean sub-score for pay is 10.8 ($SD=4.6$). This is lower than the published public sector mean baseline of 12.1 ($SD=2.5$). Generation Y had the highest reported mean sub-score of 13 ($SD=5.64$) compared to Traditionalists, which had the lowest reported mean sub-score of 10 ($SD=0$).

Table 23. Mean Job Satisfaction Pay Sub-scores of Milwaukee County's Public Health Workforce Sample by Generational Grouping.

| <i>JSS</i> | <i>IV</i> | <i>N</i> | <i>Mean</i> | <i>SD</i> | <i>CI-Lower</i> | <i>CI-Upper</i> |
|------------|-------------------|----------|-------------|-----------|-----------------|-----------------|
| Pay | | | | | | |
| | 1922-1945 | 2 | 10 | 0 | 10 | 10 |
| | 1946-1964 | 81 | 10.61 | 4.27 | 9.67 | 11.56 |
| | 1965-1980 | 42 | 10.29 | 4.6 | 8.85 | 11.72 |
| | 1981-1993 | 20 | 13 | 5.64 | 10.36 | 15.64 |
| | TOTAL | 145 | 10.84 | 4.6 | 10.09 | 11.6 |
| | Public Sector JSS | | 12.1 | 2.5 | | |

Promotion- According to Table 24, the mean sub-score for promotion is 9.7 ($SD=4.16$). This is also lower than the published public sector mean baseline of 11.9 ($SD=1.9$). Generation Y had the highest reported mean sub-score of 11.1 ($SD=4.43$) compared to Traditionalists, which had the lowest reported mean sub-score of 8 ($SD=4.24$).

Table 24. Mean Job Satisfaction Promotion Sub-scores of Milwaukee County's Public Health Workforce Sample by Generational Grouping.

| <i>JSS</i> | <i>IV</i> | <i>N</i> | <i>Mean</i> | <i>SD</i> | <i>CI-Lower</i> | <i>CI-Upper</i> |
|------------------|-------------------|----------|-------------|-----------|-----------------|-----------------|
| Promotion | | | | | | |
| | 1922-1945 | 2 | 8 | 4.24 | -30.12 | 46.12 |
| | 1946-1964 | 79 | 9.2 | 3.85 | 8.34 | 10.06 |
| | 1965-1980 | 42 | 10.07 | 4.53 | 8.66 | 11.48 |
| | 1981-1993 | 20 | 11.05 | 4.43 | 8.98 | 13.12 |
| | TOTAL | 143 | 9.7 | 4.16 | 9.02 | 10.39 |
| | Public Sector JSS | | 11.9 | 1.9 | | |

Supervision- According to Table 25, the mean sub-score for supervision is 18.9 ($SD=5.1$) for the target population. This is slightly lower than the published public sector mean baseline of 19.1 ($SD=1.5$). Generation Y and Baby Boomers reported the highest mean sub-score of 19.3 ($SD=5.24$, 5.14, respectively). Generation X had the lowest reported mean sub-score of 17.3 ($SD=5.05$).

Table 25. Mean Job Satisfaction Supervision Sub-scores of Milwaukee County's Public Health Workforce Sample by Generational Grouping.

| <i>JSS</i> | <i>IV</i> | <i>N</i> | <i>Mean</i> | <i>SD</i> | <i>CI-Lower</i> | <i>CI-Upper</i> |
|--------------------|-------------------|----------|-------------|-----------|-----------------|-----------------|
| Supervision | | | | | | |
| | 1922-1945 | 2 | 23 | 1.41 | 10.29 | 35.7 |
| | 1946-1964 | 79 | 19.32 | 5.14 | 18.18 | 20.48 |
| | 1965-1980 | 42 | 17.28 | 5.05 | 15.71 | 18.86 |
| | 1981-1993 | 20 | 19.3 | 5.24 | 16.85 | 21.75 |
| | TOTAL | 143 | 18.78 | 5.17 | 17.92 | 19.63 |
| | Public Sector JSS | | 19.1 | 1.5 | | |

Fringe Benefits- According to Table 26, the mean sub-score for fringe benefits is 14.6 ($SD=4.2$) for the target population. This is slightly greater than the published public sector mean baseline of 14.4 ($SD=2$). Baby Boomers had the highest reported mean sub-score of 14.7 ($SD=4.31$) compared to Traditionalists at 10 ($SD=8.49$).

Table 26. Mean Job Satisfaction Fringe Benefits Sub-scores of Milwaukee County's Public Health Workforce Sample by Generational Grouping.

| <i>JSS</i> | <i>IV</i> | <i>N</i> | <i>Mean</i> | <i>SD</i> | <i>CI-Lower</i> | <i>CI-Upper</i> |
|------------------------|-------------------|----------|-------------|-----------|-----------------|-----------------|
| Fringe Benefits | | | | | | |
| | 1922-1945 | 2 | 10 | 8.49 | -66.24 | 86.23 |
| | 1946-1964 | 81 | 14.68 | 4.31 | 13.73 | 15.63 |
| | 1965-1980 | 40 | 14.6 | 3.88 | 13.36 | 15.84 |
| | 1981-1993 | 20 | 14.45 | 4.27 | 12.45 | 16.45 |
| | TOTAL | 143 | 14.56 | 4.22 | 13.86 | 15.26 |
| | Public Sector JSS | | 14.4 | 2 | | |

Contingent Rewards- According to Table 27, the mean sub-score for contingent rewards is 13.2 ($SD=4.8$) for the target population. This is minimally lower than the published public sector mean baseline of 13.5 ($SD=1.8$). Generation Y had the highest reported mean sub-score of 14.5 ($SD=5.1$) compared to Generation X, which had the lowest reported mean sub-score of 12.5 ($SD=4.32$).

Table 27. Mean Job Satisfaction Contingent Rewards Sub-scores of Milwaukee County's Public Health Workforce Sample by Generational Grouping.

| <i>JSS</i> | <i>IV</i> | <i>N</i> | <i>Mean</i> | <i>SD</i> | <i>CI-Lower</i> | <i>CI-Upper</i> |
|---------------------------|-------------------|----------|-------------|-----------|-----------------|-----------------|
| Contingent Rewards | | | | | | |
| | 1922-1945 | 2 | 14 | 2.82 | -11.41 | 39.41 |
| | 1946-1964 | 80 | 13.31 | 5 | 12.2 | 14.43 |
| | 1965-1980 | 42 | 12.45 | 4.32 | 11.11 | 13.8 |
| | 1981-1993 | 20 | 14.5 | 5.1 | 12.11 | 16.89 |
| | TOTAL | 144 | 13.23 | 4.8 | 12.44 | 14.02 |
| | Public Sector JSS | | 13.5 | 1.8 | | |

Operating Procedures- According to Table 28, the mean sub-score for operating procedures is 13.4 ($SD=4$) for the target population. This is higher than the published public sector mean baseline of 12.9 ($SD=2$).

Traditionalist and Generation Y had the highest reported mean sub-score at 14.5 ($SD=0.71$, 4.05 , respectively). Generation X had the lowest reported mean sub-score of 13.1 ($SD=3.98$).

Table 28. Mean Job Satisfaction Operating Procedures Sub-scores of Milwaukee County's Public Health Workforce Sample by Generational Grouping.

| <i>JSS</i> | <i>IV</i> | <i>N</i> | <i>Mean</i> | <i>SD</i> | <i>CI-Lower</i> | <i>CI-Upper</i> |
|-----------------------------|-------------------|----------|-------------|-----------|-----------------|-----------------|
| Operating Procedures | | | | | | |
| | 1922-1945 | 2 | 14.5 | 0.71 | 8.15 | 20.85 |
| | 1946-1964 | 78 | 13.28 | 4.11 | 12.36 | 14.21 |
| | 1965-1980 | 42 | 13.1 | 3.98 | 11.86 | 14.33 |
| | 1981-1993 | 20 | 14.45 | 4.05 | 12.56 | 16.34 |
| | TOTAL | 142 | 13.41 | 4.03 | 12.74 | 14.08 |
| | Public Sector JSS | | 12.9 | 2 | | |

Co-workers- According to Table 29, the mean sub-score for co-workers is 18.3 ($SD=3.7$) for the target population. This is slightly higher than the published public sector mean baseline of 17.9 ($SD=1.5$). Generation Y had

the highest reported mean sub-score of 19 ($SD=4.1$) compared to Traditionalists, which had the lowest mean sub-score of 17 ($SD=4.24$).

Table 29. Mean Job Satisfaction Co-workers Sub-scores of Milwaukee County's Public Health Workforce Sample by Generational Grouping.

| <i>JSS</i> | <i>IV</i> | <i>N</i> | <i>Mean</i> | <i>SD</i> | <i>CI-Lower</i> | <i>CI-Upper</i> |
|------------------|-------------------|----------|-------------|-----------|-----------------|-----------------|
| Coworkers | | | | | | |
| | 1922-1945 | 2 | 17 | 4.24 | -21.11 | 55.12 |
| | 1946-1964 | 81 | 18.59 | 3.89 | 17.73 | 19.45 |
| | 1965-1980 | 42 | 17.19 | 3.1 | 16.23 | 18.15 |
| | 1981-1993 | 20 | 19 | 4.1 | 17.11 | 20.89 |
| | TOTAL | 145 | 18.22 | 3.73 | 17.6 | 18.83 |
| | Public Sector JSS | | 17.9 | 1.5 | | |

Nature of Work- According to Table 30, the mean sub-score for nature of work is 19.3 ($SD=4$) for the target population. This is greater than the published public sector mean baseline of 18.9 ($SD=1.7$). Baby Boomers had the highest reported mean sub-score of 19.7 ($SD=3.97$) compared to Traditionalists, which had the lowest mean sub-score of 16.5 ($SD=2.12$).

Table 30. Mean Job Satisfaction Nature of Work Sub-scores of Milwaukee County Public Health Workforce- sample by Generational Grouping.

| <i>JSS</i> | <i>IV</i> | <i>N</i> | <i>Mean</i> | <i>SD</i> | <i>CI-Lower</i> | <i>CI-Upper</i> |
|-----------------------|-------------------|----------|-------------|-----------|-----------------|-----------------|
| Nature of Work | | | | | | |
| | 1922-1945 | 2 | 16.5 | 2.12 | -2.56 | 35.56 |
| | 1946-1964 | 80 | 19.65 | 3.97 | 18.77 | 20.53 |
| | 1965-1980 | 42 | 18.83 | 4.58 | 17.4 | 20.26 |
| | 1981-1993 | 20 | 19.1 | 2.93 | 17.73 | 20.47 |
| | TOTAL | 144 | 19.29 | 4.02 | 18.63 | 19.95 |
| | Public Sector JSS | | 18.9 | 1.7 | | |

Overall Communication- According to Table 31, the mean sub-score for overall communication is 14.5 ($SD=4.7$) for the target population. This is the same as the published public sector mean baseline of 14.5 ($SD=2.2$). Generation Y had the highest reported mean sub-score at 16.5 ($SD=3.43$)

compared to Generation X, which had the lowest mean sub-score of 13.7 ($SD=4.33$).

Table 31. Mean Job Satisfaction Communication Sub-scores of Milwaukee County's Public Health Workforce Sample by Generational Grouping.

| <i>JSS</i> | <i>IV</i> | <i>N</i> | <i>Mean</i> | <i>SD</i> | <i>CI-Lower</i> | <i>CI-Upper</i> |
|----------------------|-------------------|----------|-------------|-----------|-----------------|-----------------|
| Communication | | | | | | |
| | 1922-1945 | 2 | 14.5 | 9.19 | -68.09 | 97 |
| | 1946-1964 | 80 | 14.46 | 4.91 | 13.37 | 15.56 |
| | 1965-1980 | 42 | 13.71 | 4.33 | 12.37 | 15.06 |
| | 1981-1993 | 20 | 16.5 | 3.43 | 14.9 | 18.1 |
| | TOTAL | 144 | 14.53 | 4.65 | 13.76 | 15.29 |
| | Public Sector JSS | | 14.5 | 2.2 | | |

Summary of Job Satisfaction Sub-scores per Generational Grouping

Generation Y reported the greatest frequency of positive mean sub-scores for pay, promotion, contingent rewards, coworkers, and communication (see Table 32, Mean Job Satisfaction Score of Milwaukee County's Public Health Workforce Sample by Generational Grouping). Traditionalists reported the lowest frequency of mean sub-scores for pay, promotion, fringe benefits, coworkers, and nature of work.

Table 32. Mean Job Satisfaction Scores of Milwaukee County's Public Health Workforce Sample by Generational Grouping.

| <i>JSS</i> | <i>IV</i> | <i>N</i> | <i>Mean</i> | <i>SD</i> | <i>CI-Lower</i> | <i>CI-Upper</i> |
|------------------|-------------------|----------|-------------|-----------|-----------------|-----------------|
| Total JSS | | | | | | |
| | 1922-1945 | 2 | 127.5 | 2.12 | 108.44 | 146.56 |
| | 1946-1964 | 72 | 134.2 | 25.36 | 128.25 | 140.17 |
| | 1965-1980 | 40 | 127.8 | 23.02 | 120.44 | 135.16 |
| | 1981-1993 | 20 | 141.35 | 26.11 | 129.13 | 153.57 |
| | TOTAL | 134 | 133.26 | 24.82 | 129.02 | 137.5 |
| | Public Sector JSS | | 138.3 | 27.9 | | |

Are the Job Satisfaction Scores Statistically Significant for Generational Group when Compared to Other Socio-Demographic Variables?

In order to determine the statistical significance of these findings, one-way ANOVA was performed (see Table 21, Milwaukee County's Public Health Workforce Sample- Job Satisfaction Survey Mean Score and Sub-scores per Generational Grouping and Position Type- One-Way ANOVA and Effect Size, p. 70). Findings were not statistically significant via this type of analyses therefore; post-hoc analyses were not performed for these variables.

Summary of Results

According to this study, the majority of the Milwaukee County PHW sample is female (79 percent), non-Hispanic white (85 percent); only six percent are African American. Roughly three percent of the sample identified as LGBT while seven percent claimed disability. For position type, PHN was the most reported job function ($n=49$, 32.7 percent) followed by Administrators ($n=35$, 23.3 percent) and Support Staff ($n=20$, 13.3 percent). For generational grouping, the majority of the PHW are Baby Boomers ($n=83$, 55.3 percent). The second largest group reflected in the study was Generation X ($n=45$, 30 percent) while Generation Y represented 13.3 percent of the PHW ($n=20$). Traditionalists were the smallest group (1.3 percent).

According to Figure 8, Milwaukee County's Public Health Workforce Sample, the majority of Administrators, PHNs, Other Professional Staff, and

Support Staff are Baby Boomers. Generation X was the largest group for Environmental Health Professionals and the second largest group for Administrators. Generation Y was the second largest group for PHNs.

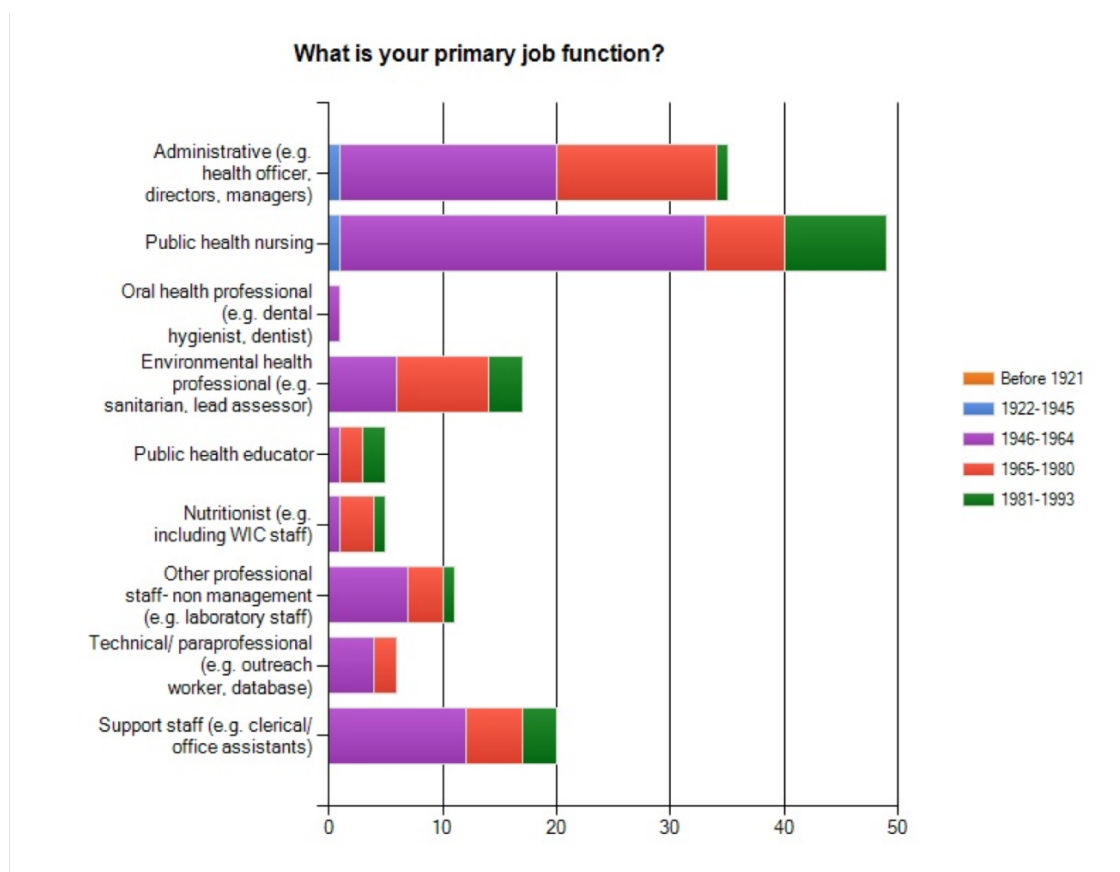


Figure 8. Sample of Milwaukee County Public Health Workforce- Position Type by Generational Grouping

The descriptive data revealed that the mean Job Satisfaction scores of the sample were lower than that of the national public sector baseline (133 to 138 respectively) as well as all other sectors (public, private, non-profit, academia, medical and nursing sectors/ professions). For generational

grouping, mean Job Satisfaction score (listed in parentheses) was lowest for Traditionalists and Generation X (equal at 128), Baby Boomers (134) and highest for Generation Y (141). For position type, mean Job Satisfaction scores were lowest for Environmental Health Professionals (127), Technical/Paraprofessionals (128), Administrators (131), PHN (132), Other Professional Staff (136), Support (140), Nutritionists (150) and highest for Public Health Educators (156). Additionally, two of the nine Job Satisfaction sub-scores were less than (pay) and greater than (coworkers) the national public sector baseline.

The mean Job Satisfaction score for the Milwaukee County PHW sample was statistically significant for generational grouping [overall mean score ($\chi^2 (3) = 9.7, p = .021$)] and sub-scores at alpha .05 for position type [*promotion* (35.5, $F = 2.14, p = .043, R^2 = .054$), *operating procedures* (49, $F = 3.36, p = .003, R^2 = .106$), *coworkers* (31.3, $F = 2.41, p = .024, R^2 = .065$), and *contingent rewards* (17.1, $F = .73, p = .644, R^2 = -.013$)].

Post-hoc testing (*Tamhanes*) was performed to determine where significant differences were housed for the Job Satisfaction scores and *sub-scores*. The post-hoc testing resulted in a very significant outcome between Administrators and Support Staff for *contingent rewards* [-4.37 (0.003)]. The testing also revealed a significant outcome for PHN and Other Professional Staff for *coworkers* [3.63 (0.022)]. Marginally significant results were

obtained for Administrators and PHN for *promotion* [-2.82 (0.049)] as well as Administrators and Support Staff for *operating procedures* [-4.37 (0.051)].

Chapter V

Discussion

Overview

The purpose of this exploratory, cross-sectional study was to examine the influence of position type and generational grouping on Job Satisfaction of a sample of the local PHW. This study gathered the following information about the PHW: (a) Socio-demographic data via a sample of the Milwaukee County PHW; (b) The Job Satisfaction level of the sample of the Milwaukee County PHW was less than the national level; (c) The mean Job Satisfaction score was statistically significant for generational grouping; (d) Four Job Satisfaction sub-scores (promotional opportunities, operating procedures, relationship with coworkers, and contingent rewards) were significant for position type; (e) Generation Y was most satisfied compared to Generation X and Traditionalists (tied for least satisfied); and (f) Administrators and Other Professional Staff were most satisfied compared to PHNs and Support Staff.

Initially, socio-demographic data about the sample of Milwaukee County's PHW was not available for reference. Therefore, the researcher collected this data to answer inform the PHW research gap and answer research questions pertaining to local-level job satisfaction. Position type and generational grouping was collected. It was also necessary to collect gender, race, disability, educational attainment, sexual orientation, or military status

because these variables demonstrated variability of results in other workforce research. Tenure in the public health profession, at one's agency, and in current position as well as PHAB accreditation knowledge and perception of agency's attainment were collected to accommodate Wisconsin's DHS. Mean Job Satisfaction scores and sub-scores, standard deviation, lower and upper intervals for the 95 percent confidence interval were selected to assess group membership for the additional variables. Comparison data will be important to demonstrate PHW trends over time.

In this study, the majority of respondents were female (79 percent), non-Hispanic whites (85 percent), only six percent were African American. Roughly three percent of the sample identified as LGBT while seven percent claimed disability. The majority of Administrators, PHNs, Other Professional Staff, and Support Staff were Baby Boomers. According to the workforce research, Baby Boomer group affiliation is related to increased turnover related to retirement in other sectors. Generation X was the largest group for Environmental Health Professionals and the second largest group for Administrators. Generation Y was the second largest group for PHNs. Generation Y group affiliation reported increased turnover related to job dissatisfaction in workforce research.

Understanding the composition of the PHW is necessary for recruitment and retention efforts. In 2011, APHA stated that public health Administrators do not represent the communities that they serve. This

statement does not appear to be true according to the results of the study. Considering that the majority of Milwaukee County is white, the majority of the sample was also white. It is important to note that the role of health disparities and distribution of racial and ethnic groups should be considered for effective PHW staffing, specifically in urban areas like the City of Milwaukee (a more racially and ethnically diverse community).

Statistically significant differences were noted at the macro-level by generational grouping (mean Job Satisfaction Score). Traditionalists and Generation X were least satisfied compared to Generation Y which was most satisfied, even above the national baseline. Statistically significant differences were detected at the micro-level by position type (Job Satisfaction sub-scores). Environmental Health Professionals were least satisfied compared to Public Health Educators, which reported the greatest satisfaction far beyond the national baseline. Administrators reported the greatest satisfaction for *contingent rewards, promotion, and operating procedures*. Other Professional Staff reported the greatest satisfaction for their *coworkers*. PHNs reported lower satisfaction for *promotion* (opportunities) and *operating procedures* (policy).

The results of this county-level PHW study can be used to justify the need to assess Job Satisfaction by generational grouping and position type, particularly in relation to recruitment and retention of employees with less seniority/supervisory rank

Limitations

Limitations of the study are theoretical and methodological in relation to research, policy, and practice implications. Recommendations to remedy these limitations will be provided.

Theoretical

According to the study framework (Figure 2), individuals are defined by self-reported socio-demographic variables. Individuals represent the organizations that employ them. In turn, Job Satisfaction is the result of individual, position, unit, and organizational-level influences. The affective nature of Job Satisfaction can alter the true impact in the PHW. For instance many external factors such as the pertussis outbreak of 2012 and the political climate in the State of Wisconsin (Act 10) (see Appendix G- Figure 9) may have impacted the results of this study. Unfortunately, it is impossible to mitigate external factors when assessing Job Satisfaction levels. Regular, quantitative, Job Satisfaction assessments can serve to reduce the potential impact of external factors.

At the *organizational level*, factors were evaluated at the macro and micro-level. For example, policy and co-worker relationships were significant by position type. However, qualitative data to support the reasoning for the outcomes is lacking. Organizational level interviews/ surveys were not performed due to limited resources; this data could be useful to validate

claims made by individual respondents as well as provide indicators for future PHW research.

At the *unit level*, division/ program data was not obtained, primarily due to the size of the sample and volume of findings. It was not possible to collect the various divisions and programs per health department. However, future studies should attempt to collect this level of data, possibly at the organizational level to validate organizational structure and staffing. Such information can be used to determine variance in Job Satisfaction score across divisions and programs in public health settings.

At the *position level*, cross-tabulations were performed to assess position type and generational grouping distribution. Selection of the DHS position types may have led to small cell counts. For future research, blue/ white collar or technical/ non-technical staff position types can be used for future Milwaukee County PHW research.

At the *individual level*, generational grouping was the only variable that was statistically significant for overall Job Satisfaction (mean Job Satisfaction Score), however collection of the remaining variables that represent diversity yield practical significance. Assessment of PHW diversity is a component of the national PHSSR agenda. Collection of these socio-demographic variables can be challenging because as with any survey, they are self-reported measures and respondents are not required to report their

group affiliations. In the future, assurance of anonymity is necessary to yield adequate response rates.

Methodological

Generalizability of results (e.g., impacts comparison related to size and type of jurisdiction) and volunteer bias are common limitations in research. Incomplete demographic data and missing retention and turnover rates are important considerations for future PHW research. Although power of the sample size was achieved, stratification of cases across position type and generational group variables were limited. The researcher was unable to simultaneously analyze Job Satisfaction scores across variables because some of the groups did not contain enough cases per cell to assess a potential interaction. In turn, each independent variable was analyzed separately (e.g., position type and Job Satisfaction and generational grouping and Job Satisfaction, versus position type + generational grouping and Job Satisfaction). In the future, larger PHW data sets can enable researchers to determine if multiple variables simultaneously impact Job Satisfaction levels.

Another limitation that must be noted is the lack of retention data for the target area. Initially, retention rates were desired by the researcher to correlate with Job Satisfaction scores, however retention data per health department was not accessible. Retention rates were recommended via some

authors as a companion to Job Satisfaction scores for parity and should be considered for future research (cf. e.g., Lavoie-Tremblay *et al*, 2010).

Strengths

This study attempted to address the gaps in PHSSR noted by HRSA, NACCHO, APHA, and DHS. The data (study results) and process (response rate and follow-up process) to obtain it is the greatest strength of this study. To the researcher's knowledge, this study was the first of its kind to quantify Job Satisfaction levels for a sample of the PHW in Milwaukee County.

The Milwaukee County PHW study results address the national PHSSR research gap at the local-level (cf. e.g., Stevens, 2010; and Graham, 2010). In the process of assessing Job Satisfaction, valuable descriptive information was obtained to provide planners and human resource professionals with a better understanding of diversity of Milwaukee County's PHW. Earlier in this paper, the Wisconsin PHW Reports noted inconsistent age and socio-demographic data for the PHW served as a barrier to complete data sets. The researcher was able to obtain full demographic data for 100 percent of the local-level respondents.

The Milwaukee County PHW study demonstrated that Generation X and Y should be viewed separately in workforce research as Job Satisfaction varies per sample. Job Satisfaction scores were highest for Generation Y ($m=141$) and lowest for Generation X ($m=128$, tied with Traditionalists). According to the results of this study, Job Satisfaction interventions should

be tailored for generational groups because statistical significance was detected.

Another notable strength of this study is the participant response rate (45 percent) via administration of a web-based survey tool. Previous literature has reported low engagement via web-based self-administered surveys. For instance, Gladwell *et al.* performed an exploratory Job Satisfaction study of 1340 participants; the response rate was merely 14.3 via Survey Monkey ® (2010). The return from the Milwaukee County PHW sample is adequate considering published response rates for web-based survey facilitation range between 35-44.6 (Cook, Heath, Thompson, 2000; Cobanoglu, Warde & Moreo, 2001).

The researcher's ability to obtain power of the sample size via engagement of health departments and staff without incentives is remarkable. The process of engaging key individuals in person, over the phone as well as the provision of various tiers of email follow-ups (i.e., direct, various venues, in-direct through DHS regional director) facilitated successful engagement of the target population. A single method may not have yielded the same results; rather a combination of consistent interactions was necessary to meet the research goal because various generations respond to a variety of communication modes (Baum, 2007).

Implications

Implications of the study include future research, public policy, and practice. PHAB accreditation for health departments is a process that can incorporate all three implications to increase capacity of the PHW. Accreditation also enforces national, state, and local health department accountability to facilitate achievement of the implications.

Future Research

In 1985, Spector stated that there was a need to understand the cause and effect associated with Job Satisfaction. At that point in time, Spector's identified three moderators: level (position type), intent to resign (turnover), and commitment. Additional research was necessary to understand the relationship of moderators on Job Satisfaction. Approximately 30 years later, the cause and effect of Job Satisfaction remains to be resolved. The need to understand the complexity of moderators that represent the diversity of today's PHW and their role in Job Satisfaction is critical for future research proposals.

Diversity of the PHW is noted as an area of improvement at the national level (HRSA, 2005; APHA, 2006; DHS, 2011). Some common variables that represented diversity in the workforce literature review (e.g. race, ethnicity, sexual orientation and disability) were not statistically significantly for Job Satisfaction in the Milwaukee County PHW study. Perhaps other variables that represent diversity should be assessed (e.g.,

socio-economic status) for significance in the near future. Examples of additional variables that should be examined in future PHW research are marital status, union affiliation, and religion.

As noted, this Milwaukee County PHW study lacked turnover and retention data; this would have been useful because these rates can be compared to Job Satisfaction levels. Additional research should be conducted to determine intent as well as why staff with low Job Satisfaction separated from their employers. Rationale for separation (e.g., via exit interviews), especially for those that invested in formal public health training and education is important to mitigate premature turnover (e.g., not related to retirement). The impact of retention and turnover rates related to Job Satisfaction must be addressed in future research to prepare for projected reductions in the PHW (NACCHO, 2010). Better mechanisms are needed to measure retention and turnover at the local-level including reasons for separation (e.g., retirements, layoffs). As a result of the Milwaukee County PHW study, it is recommended that the State of Wisconsin DHS should include retention and turnover rates as a part of their annual assessment process for the county health profiles. If FTEs and employee type per position is required, turnover and retention rates should also be provided to yield a more complete view of the PHW.

Additional research including larger target audiences (e.g. statewide) and inclusion of non-governmental public health professionals is needed

because public health is more than a government function; for it is a collaborative movement. Standardization and reporting to the DHS by community-based agencies and coalitions that provide public health services is also needed to assess this segment of the workforce and their relevance to achievement of essential public health functions.

Public Policy

According to the research, funding, or the lack thereof has continued to serve as the biggest barrier to PHW assessments and PHSSR. Policy implications have been made via ASTHO, NACCHO, APHA and HRSA to improve PHW data and justify the need for funding. The ACA's Prevention and Public Health Fund attempts to increase PHW capacity via training, loan repayment programs, and workforce research (APHA, 2013). Unfortunately, the fund continues to be diverted from public health prevention efforts.

Considering the state of funding, several implications for practice have been addressed because they are free or low-cost for the employer. According to the literature review, the impact of generational grouping on Job Satisfaction, communication, diversity, supervisory relationships, and retention can be assessed and inform positive change in the workforce.

The Milwaukee County PHW study results were consistent with the literature review because Job Satisfaction levels were statistically significant for generational grouping. The statistical significance of Job Satisfaction levels within position types should be explored in future research. For

example, Administrators reported greater Job Satisfaction than Support Staff and PHN for contingent rewards, promotional opportunities, and operating procedures. Other Professional Staff (e.g., non-management) reported greater satisfaction than PHNs for their coworkers. According to the sample of Milwaukee County's PHW, performance of workforce assessments may also facilitate review and implementation of quality improvement initiatives that are atypical for the sector such as lean management. These exercises may align with transparency and accountability initiatives linked to funding. Adoption of such policy measures may help ease concerns of business-minded, policy-makers and the return on investment via public health.

Practice

According to the Milwaukee County PHW study, the majority of staff earned bachelor degrees while graduate-level degrees were the second highest earned degree. Unfortunately, the types of degrees (e.g., B.S. in community health, M.P.H. in health policy) and the location (School of Public Health, interdisciplinary degree programs) where they were obtained were not collected via the study. Assessment of public health training and education would be beneficial to public health practice because it can serve to identify gaps in training. In turn, local health departments can attempt to provide free, low-cost training opportunities to staff. The need for academic-public health partnerships is paramount because they can serve to assess and meet gaps in PHW training. Practice is multifaceted; it consists of

partnerships, revisiting the role of academia, specifically schools of public health, workforce development, and engagement of staff via leadership opportunities. Acute care has benefitted from the academic-practice partnership for decades via the establishment of teaching hospitals. Public health departments can learn from acute care, via the incorporation of the academic health department model. The academic health department is a formal relationship between ones local academic institution and the health department (Association of Schools of Public Health, *n.d.*, Swain, Bennett, Etkind, Ransom, 2006; Keck, 1998). The academic health department model can also facilitate the achievement of PHAB accreditation.

The role of academia in the PHW is one that must not be overlooked. HRSA's PHW Report called for increased access to educational and training opportunities, tuition reimbursement, loan repayment, and innovation in education. Schools of Public Health were called to be more responsive in their relationships with the PHW in their respective communities. More recently, RWJF called for an increased role of Historically Black Colleges and Universities to increase the pipeline of public health professionals of color. Lastly, a call for more relevant and robust public health curricula was made.

In response to HRSA's recommendations, implications for education/training of public health Administrators and human resources departments as well as staff were evident via this study. First, education about self-assessments, the frequency of administration, data analysis and usefulness of

the results is warranted. Administration can use the Job Satisfaction Survey, but they must first receive training, determine who will be responsible for collection of the data (e.g., online/ hard copy) and coding of the results for analysis in statistical software packages such as SPSS or SAS. Partnerships with local public health programs via the academic health department model or learning collaboratives can provide access to the statistical software packages and free/ low cost training for staff. The access and training related to workforce assessment can also benefit other health department surveillance and programming initiatives such as sentinel surveillance of communicable disease. In addition to increasing access and training opportunities for the PHW, the survey results (i.e., data) will enable Administrators and human resources departments to prioritize areas with the greatest need for intervention (e.g., Environmental Health Professionals with lowest Job Satisfaction scores). A final way to provide training to staff is via the provision of working groups to achieve shared goals, including diversity. The development of a diverse advisory group or committee tied to the workforce can be an educational process for staff. Implications for staff must be tied to increasing the awareness of such assessments (e.g., branding and marketing) and engagement (e.g., planning meetings and listening sessions) in every step of the workforce assessment process. Inclusion of staff may also impact retention (e.g., feeling valued by participation in the process); further research is necessary to support this recommendation.

*Role of Public Health Accreditation in Workforce Research,
Policy, and Practice*

Many health departments are preparing for PHAB accreditation. Assessment of the PHW is integral to obtain accreditation, which will be tied to funding levels. Health departments must research, evaluate, and decide what assessment methods will be used to demonstrate that all domains have been met. The accreditation process integrates policy, research and practice. Initially, the establishment of PHAB accreditation and the link to public health funding represents policy. Changes in policies and procedures may also be necessary to comply with accreditation; this is subject to local ordinances and state statutes. In terms of research, PHW review and regular assessment is necessary to achieve and maintain accreditation status. Accreditation status will represent high-performing health departments.

Knowledge of accreditation and the time to obtain accreditation status was surveyed via the Milwaukee County PHW study. Two-thirds of staff acknowledged that they understood the importance of PHAB for their agency while sixteen percent did not. Approximately one-third of staff claimed that it would take two to three years for their agency to become accredited while one-third reported that it would take three to five years. Twelve percent noted they never heard of PHAB before and approximately seven percent noted that their agency would not be able to obtain accreditation at all. The latter results are concerning because staff buy-in is necessary to achieve

accreditation. Ongoing communication and PHW training is necessary to shift staff attitudes to support accreditation efforts. Again, these areas are assessed via administration of tools such as the Job Satisfaction Survey.

Conclusion

Data should drive public health interventions and public health policies. The reality is, this is not always the case. Public health funding, in particular, is becoming more reliant on data. Public health professionals collect data about their communities however; there is a considerable failure to perform analyses on the common denominator, the PHW. National-level public health planners and funders are declaring the importance of PHW data via PHSSR agenda and workgroups. The recent RWJF, PHN Job Satisfaction study was the first of its kind to translate concept into practice however the blueprint for performance of Job Satisfaction assessments is unavailable at the local level. The current study attempted to address the PHSSR gap via the lens of Job Satisfaction of the PHW. Job Satisfaction assessments have provided data for practical use in other sectors. The utility of Job Satisfaction assessments is to define the workforce, retain existing staff, and market results to recruit new employees. Diversity and retention of the workforce via assessment of Job Satisfaction levels was explored via selection of position type, generational grouping, and other socio-demographic variables. Job Satisfaction assessment is an important process because diversity of the workforce can be evaluated for future recruitment and

retention efforts. However, staffing, turnover, and retention rates should be collected from the PHW on an annual basis to support future Job Satisfaction research. The overall mean Job Satisfaction score was statistically significant for generational grouping; Generation Y was most satisfied. Public health Administrators were more satisfied with contingent rewards, promotional opportunities and operating procedures. Other Professional Staff (non-management) were most satisfied with their coworkers. PHNs were least satisfied with their coworkers, promotional opportunities, and operating procedures. The statistical significance of these findings, coupled with the practical significance of the study can be used to assess Job Satisfaction levels and diversity of the local PHW.

The lack of PHSSR regarding the influences of position type and generational grouping on Job Satisfaction is a worthy investment of time and resources as demonstrated in other sectors (e.g. corporate business, acute care, public education, energy). Job Satisfaction assessments can promote sustainability of the workforce because they inform supply and demand of the PHW. Informing supply and demand consists of functional enumeration of the PHW. Projections of staffing gaps by socio-demographic characteristics (e.g., diversity of population served), position type (e.g., PHNs and paraprofessionals to provide direct service), and location (underserved communities and census tracts) are crucial to provide essential public health services. The provision of essential public health services is necessary to

suppress disease and reduce health disparities. More importantly, timely PHW supply and demand data is necessary to support funding and policy decisions in the near future.

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Glossary

Affordable Care Act of 2010- The ACA is an attempt to overhaul the US healthcare delivery system, however it established the Public Health Fund and National Public Health Improvement Initiative. The fund will serve to support public health workforce assessments and development.

Functional Enumeration- the process of counting and defining the PHW (PHF, 2012).

Job Satisfaction- defined as one's perception that their job fulfills their personal needs; it is an affective and relative state of mind (Graham, 2010; Wilson et al, 2008). Freeman (1978) defines Job Satisfaction as a major determinant of labor market mobility; he quantified with the following formula:

$$P(Q) = 1 / (1 - \exp \sum B_i X_i)$$

P= probability of quitting a job (turnover)

X= demographic variables

Job Satisfaction Survey- Spector's Job Satisfaction Survey, the tool used for this research study. © 1994, Paul E. Spector, All rights reserved.

The survey included nineteen demographic questions in addition to the 36 Job Satisfaction questions that reflect nine components (scales/sub-scores) of satisfaction (salary, promotion, supervision, benefits, contingent rewards, operating procedures, coworkers, nature of work and communication).

Retention- is a rate is defined as the percentage of employees employed at the beginning and end of a designated period of time (Society of Human Resource Management, 2012).

Sustainability- defined as investments in local and state public health, the public health system, community partners and the public health workforce, which builds operational capacity to make a significant impact on health outcomes, reduced disparities and enhanced preparedness (Monroe, 2011).

Turnover- is defined as the number of separations divided by the average of employees in the same time period (Society of Human Resource Management, 2012). When discussing turnover rates it is crucial to report retention rates because the two compliment one other and assign more meaning to the situation.

Appendices

Appendix A: Table 1. An Overview of Generations

| <i>Generational Grouping</i> | <i>Work Ethic</i> | <i>Organizational Hierarchy</i> | <i>Communication</i> | <i>Healthcare Impact</i> |
|---|---|---|---|--|
| <p><u>Traditionalists</u></p> <p><i>Years/ages:</i> 1925- 1945 (ages 67- 90)</p> <p><i>Workforce:</i> 12 percent or 22 million</p> | <p>Company loyalty - believed they would work for the same company their entire career.</p> | <p>*Great influence politically and economically due to their discretionary spending. *Greatest frequency of retirements has taken place.</p> | <p>*Formality *Knowledge transfer *Low-tech and high touch Prefers letters and personal notes.</p> | <p>*Maintain strong hospital- physician relationships. *More likely to become disengaged with short patient interaction to increase revenue.</p> |
| <p><u>Baby Boomers</u></p> <p><i>Years/ages:</i> 1946 -1964 (ages 48-66)</p> <p><i>Workforce:</i> 44 percent or 66 million</p> | <p>*Self- fulfillment or workaholics. *Value challenge, creativity, freedom, and the notion of living to work. *Tend to be micromanagers.</p> | <p>*The majority of executive level managers and professionals belong to this generation. *Predicted to retire at greatest frequency in next 5 years.</p> | <p>*Moderate-tech and touch. *Prefers phone calls and in- person communication.</p> | <p>Hold management roles therefore they shape the hospital/ practice.</p> |
| <p><u>Generation X</u></p> <p><i>Years/ages:</i> 1965-1980 (ages 32-47)</p> <p><i>Workforce:</i> 34 percent or 50 million</p> | <p>*Can be perceived as narcissistic and selfish. *Work does not define their lives. *Value flexibility, balance, individualism, and skepticism. *Tends to seek out work opportunities that supply freedom and autonomy and may be prepared to leave the organization if these needs are not met.</p> | <p>*Will be difficult to retain for several reasons: poor communication, unmet social work values such as work/life balance (offering flexible work schedules), lack of control over work and/or if there is a lack of mentoring and advancement opportunities. *Employees may see rank and file leadership as a barrier to accomplishing work assignments.</p> | <p>*Values consistent feedback from management. *High-tech and low touch. *Prefers email and voicemail.</p> | <p>More likely to leave the hospital/ practice if their work-life balance is challenged or unfulfilled.</p> |

| | | | | |
|---|---|---|--|--|
| <u>Generation Y</u> | *Clearly values | *Will be difficult | *Values | *More prone to |
| <i>Years/ages:</i> 1981 -2000 12 to adults aged 31 | results more than the standard work environment. | to retain for several reasons: poor communication, unmet social | consistent feedback from management. *More prone to text messaging. | multi-task. *Adaptable, need to understand approaches must vary cross |
| <i>Workforce:</i> 12 percent or 22 million | *Desires meaningful work and embraces globalism. | work values such as work/life balance (offering flexible work | | generations. *Factors that impact nursing retention: |
| | *Increased spirit of volunteerism. | schedules), lack of control over work and/or if | | scheduling, coworker and physician |
| | *Tends to seek out work opportunities that supply freedom and autonomy and may be | there is a lack of mentoring and advancement opportunities. | | relationships, professional growth opportunities, recognition, |
| | prepared to leave the organization if these needs are not met. | *Employees may see rank and file leadership as a barrier to accomplishing | | control, and responsibility. |
| | | work assignments. | | |

Appendix B: Table 3. Overview of Job Satisfaction Theory

| <i>Year</i> | <i>Author/s</i> | <i>Theory</i> | <i>Overview</i> | <i>Variables</i> |
|-------------|------------------|-----------------------------------|---|--|
| 1954 | Maslow | Hierarchy of needs | Five levels of need; must be satisfied in order. Classified as growth and deficiency needs. Impacts motivation | From basic to advanced: -Survival needs -Safety needs -Love, affection & belongingness -Esteem needs -Self-actualization- full development of human potential |
| 1966 | Herzberg | Motivation Theory | Operability of base factors to measure JS. | Intrinsic- job satisfiers= MOTIVATORS Extrinsic – job dissatisfier= hygiene factors. |
| 1966 | Rotter | Locus of Control | Includes control of +/- reinforcements. Crosses life domains. Sig. correlated to JS | External- outward/ environment. Internal- Inside/ self. Expanded in 1988 by Spector- developed Work Locus of Control Scale |
| 1976, 1980 | Hackman & Oldham | Job Characteristics Theory | Includes 5 constructs that= Motivation Potential Score (MPS) | Skill Variety (SV) Task Identification (TI) Task Significance (TS) Autonomy (Auton) Job Feedback (Feed) $MPS=(SV+TI+TS)/3x\text{ Auton } x\text{ Feed}$ |
| 1978 | Freeman | Job Satisfaction (JS) | Treated JS as an economic variable. Determined JS is a major determinant of labor market mobility. JS predicted the probability of turnover | JS Turnover Demographic variables: -Age (older/younger) -Gender (male/female) -Educational attainment (less edu/more edu) |

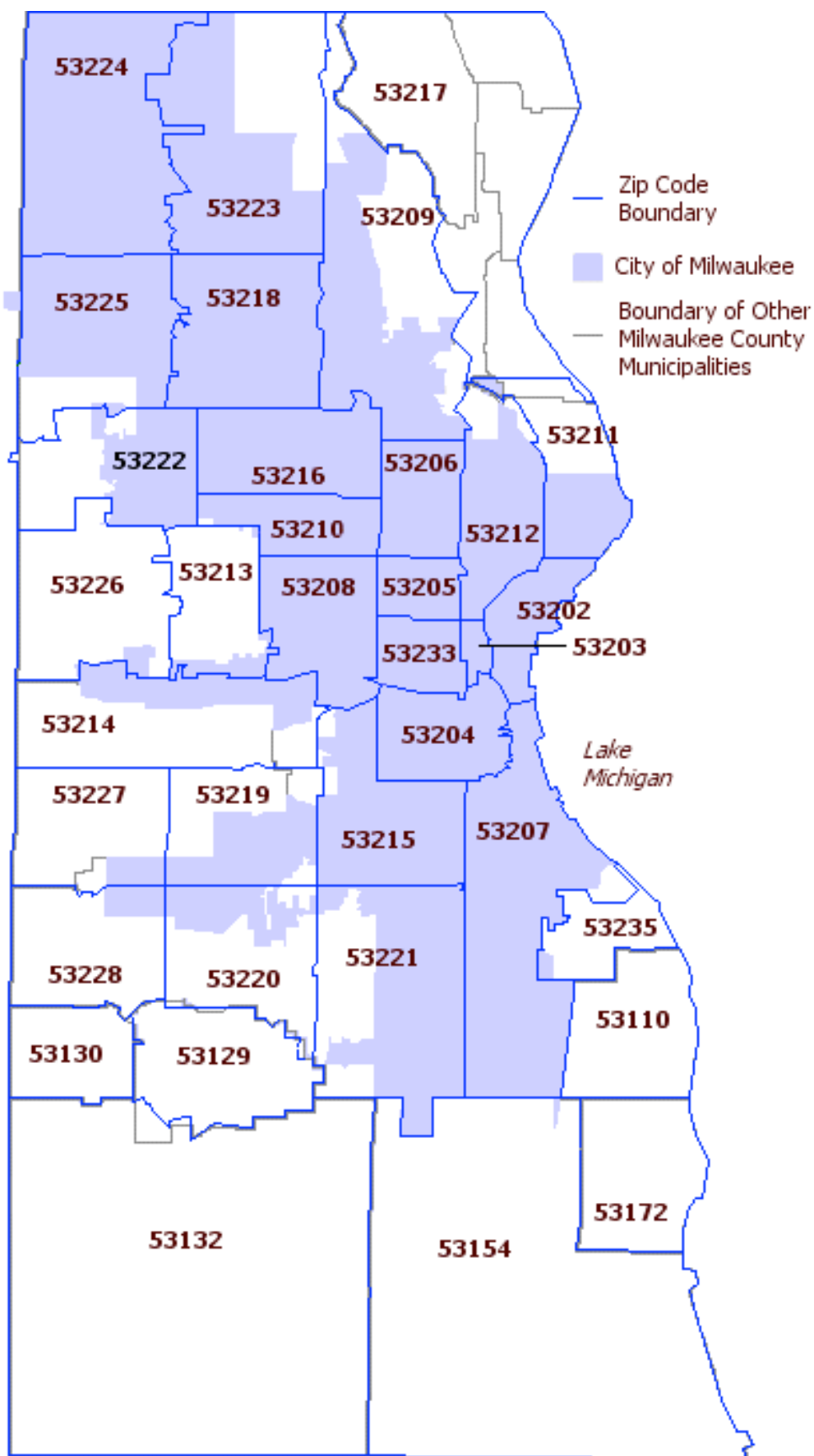
| | | | | |
|------|---------------------------|------------------------------------|---|--|
| 1978 | Katz & Kahn | Role Theory | Correlates with Job Satisfaction. Most impacted by ambiguity and conflict. Addressed work family conflict which was sig. correlated with JS | Roles: -not identical -not mutually exclusive -formal/informal -supervisor is greatest source of ambiguity -conflict (on job vs. out of job) |
| 1978 | Weaver | Life Satisfaction | Increased life satisfaction is correlated with increased JS. Moderate and positively correlated. Bi-directional. | Life satisfaction & JS measures. Concepts supported by subsequent research: -Lance, Lautenschlager, Sloan & Varca, 1989 -Rain, Lane & Stenier, 1991 -Judge & Watanabe, 1993 XXX |
| 1978 | Schneider & Dachler | Personality | JS is stable over time because it may be more so related to personality than work. | |
| 1979 | Karasek | Demand-Control Model | Control + job stressors interact JS | Demand represents stressors (e.g. workload). Buffers represents the effect of demands |
| 1980 | Peters, O'Connor & Rudolf | Critical Incident Technique | Includes 8 areas of organizational constraint. Job performance predicts JS. | Job related info. Tools & equipment Materials & supplies Budgetary support Req. services & help Task prep. Time available Work environment Quantified AD |
| 1986 | Staw, Bell & Clausen | Affective Disposition (AD) | AD is sig. correlated with JS | Quantified AD |
| 1986 | Watson, | Negative | NA is correlated | Quantified NA. |

| | | | | |
|------|---------------------|-------------------------------|--|---|
| | Pennebaker & Folger | Affectivity (NA) | with JS (inverse relationship). NA level impacts selection of jobs: -High NA=worse job fit -Low NA= better job fit | Subsequent research ties JS to the selection of the job itself (Davis, Blake & Pfeffer, 1989). |
| 1988 | Spector | JS | Establish baseline JS Score and 9 sub-scores. Determined demographic variables impact JS: age, country of origin, gender & race | Quantified JS: 36 questions organized by nine scales: pay, promotion, supervision, fringe benefits, contingent rewards, operating procedures, coworkers, nature of work, and communication XXX |
| 1989 | Arvey <i>et al.</i> | Genetic Predisposition | Performed JS research on twins. Found 30% variance in JS accounted for by genetics | |

KEY: AD- Affective Disposition; Auton- Autonomy; Feed- Job Feedback; JS- Job Satisfaction; MPS=Motivation Potential Score or (SV+TI+TS)/3x Auton x Feed; NA- Negative Affectivity; SIG- statistically significant; SV- Skill Variety; TI- Task Identification; Task Significance (TS)
XXX= not available

Appendix C: Table 4. Milwaukee County zip codes- inclusion for study (MapsZipcode, 2011).

| <i>Zip Code</i> | <i>City</i> | <i>Zip Code</i> | <i>City</i> |
|-----------------|---|-----------------|--------------------------|
| 53110 | Cudahy | 53222 | Milwaukee/ Wauwatosa |
| 53129 | Greendale | 53223 | Milwaukee/ Brown Deer |
| 53130 | Hales Corners | 53224 | Milwaukee |
| 53132 | Franklin | 53225 | Milwaukee/ Wauwatosa |
| 53154 | Oak Creek | 53226 | Wauwatosa |
| 53172 | South Milwaukee | 53227 | West Allis |
| 53201 | Milwaukee | 53228 | Greenfield |
| 53202 | Milwaukee | 53233 | Milwaukee |
| 53203 | Milwaukee | 53234 | Milwaukee |
| 53204 | Milwaukee | 53235 | Saint Francis |
| 53205 | Milwaukee | 53237 | Milwaukee |
| 53206 | Milwaukee | 53259 | Milwaukee |
| 53207 | Milwaukee | 53263 | Milwaukee |
| 53208 | Milwaukee | 53267 | Milwaukee |
| 53209 | Milwaukee/ Glendale | 53268 | Milwaukee |
| 53210 | Milwaukee | 53270 | Milwaukee |
| 53211 | Milwaukee/ Shorewood | 53274 | Milwaukee |
| 53212 | Milwaukee/ Glendale | 53277 | Milwaukee |
| 53213 | Wauwatosa | 53278 | Milwaukee |
| 53214 | West Allis/ West Milwaukee | 53280 | Milwaukee |
| 53215 | Milwaukee | 53281 | Milwaukee |
| 53216 | Milwaukee | 53284 | Milwaukee |
| 53217 | Bayside/ Fox Point/ River Hills/ Whitefish Bay/ Glendale | 53285 | Milwaukee |
| 53218 | Milwaukee | 53288 | Milwaukee |
| 53219 | Milwaukee/ West Allis | 53290 | Milwaukee |
| 53220 | Milwaukee/ Greenfield | 53293 | Milwaukee |
| 53221 | Milwaukee/ Greenfield | 53295 | Milwaukee |



Appendix D: Figure 3. Job Satisfaction Survey-© 1994, Paul E. Spector, All rights reserved

Located online at: <http://www.surveymonkey.com/s/23PTZZ8>

2012 Public Health Workforce - Job Satisfaction Survey

Demographic section

*** 1. University of Wisconsin – Milwaukee
Consent to Participate in Online Research**

**Study Title: EXAMINATION OF JOB SATISFACTION AS AN INDICATOR OF SUSTAINABILITY OF A MULTIGENERATIONAL PUBLIC HEALTH WORKFORCE
IRB #12.363 - Approval date 5/2/2012.**

Person Responsible for Research: Mary K. Madsen, PhD and Jeanette Kowalik, MPH

Study Description: The purpose of this research study is to examine job satisfaction of the local public health workforce from a multigenerational and position specific perspective to assist with retention efforts for sustainability of the profession. Research suggests that there is a link between retention and job satisfaction. The self-administered Job Satisfaction Survey (JSS) (Spector, 1994) will be given to public health professionals employed at the local health departments serving Milwaukee County. This study is necessary to better assess the unique needs of public health and compare job satisfaction scores per generational grouping and type of public health position. Lastly, JSS scores obtained from this study will be compared to the national public sector to assist with the establishment of a baseline, which has not been performed for the public health workforce to date. Approximately 145 subjects will participate in this study. If you agree to participate, you will be asked to complete a survey that will take no more than 30 minutes to finish. The survey will include seventeen demographic questions in addition to the 36 job satisfaction questions. The questions will ask about pay, promotion, supervision, fringe benefits, contingent rewards, operating procedures, coworkers, nature of work, and communication.

Risks / Benefits: Risks to participants are considered minimal. There will be no costs for participating, nor will you benefit from participating other than to further research.

Confidentiality: Your responses are completely confidential and no individual participant will ever be identified with his/her answers. Data from this study will be saved on a password protected computer for seven years. Only Mary K. Madsen, PhD, Jeanette Kowalik, MPH and Kaija Zusevics, PhD will have access to the information.

Voluntary Participation: Your participation in this study is voluntary. You may choose to

2012 Public Health Workforce - Job Satisfaction Survey

not answer any of the questions or withdraw from this study at any time without penalty. Your decision will not change any present or future relationship with the University of Wisconsin Milwaukee.

Who do I contact for questions about the study: For more information about the study or study procedures, contact Jeanette Kowalik, MPH at 414-748-3482 or jkowalik@uwm.edu.

Who do I contact for questions about my rights or complaints towards my treatment as a research subject? Contact the UWM IRB at 414-229-3173 or irbinfo@uwm.edu

Research Subject's Consent to Participate in Research:

By completing and submitting the attached survey, you are voluntarily agreeing to take part in this study once. Completing the survey indicates that you have read this consent form and have had all of your questions answered, and that you are 18 years of age or older. Thank you!

Please mark "X" in the text box below if you consent to participate:

***2. In what ZIP CODE is your primary employer located (please enter 5 digit code; for example 53201)**

ZIP CODE

***3. What range represents the year that you were born (18 and over only)?**

- Before 1921
- 1922-1945
- 1946-1964
- 1965-1980
- 1981-1993

2012 Public Health Workforce - Job Satisfaction Survey

4. Were you born in the United States (if NO, please provide the country of origin in the space below)?

- Yes
 No
 Other

Other (please specify)

5. If you answered YES to question 3, which state were you born in?

State:

6. Are you Mexican, Mexican-American, Chicano, Puerto Rican, Cuban, Cuban-American, or some other Spanish, Hispanic, or Latino group?

- Yes
 No
 I decline to respond

7. Which of the following racial groups do you identify with the most (please select the best single response)?

- White (European and middle eastern descent)
 African (foreign-born or of American descent)
 Asian (including India)
 American Indian/ Alaskan Native
 Native Hawaiian/ Pacific Islander
 Other (please respond in the comment box below)
 I decline to respond

Other (please specify)

8. Are you disabled (that is, having a physical or chronic disease/ condition requiring special accommodations at work)?

- Yes
 No
 Other
 I decline to respond

2012 Public Health Workforce - Job Satisfaction Survey**9. Do you/ have you served in the United States military or not?**

- Yes- active duty
- Yes- veteran
- No
- Other
- I decline to respond

Other (please specify)

10. What is your gender?

- Male
- Female
- Transgender
- Other
- I decline to respond

Other (please specify)

11. What sexual orientation best represents you?

- Heterosexual (prefer opposite gender)
- Homosexual (prefer same gender)
- Bi-sexual (prefer same or opposite genders)
- Transgender (male to female, female to male transition)
- Other (please state in comment box)
- I decline to respond

Other (please specify)

2012 Public Health Workforce - Job Satisfaction Survey**12. What is the highest level of education that you have completed to date?**

- High school diploma/ GED (12th grade)
- Associate degree (2 years)
- Bachelor degree (4 years)
- Master degree (graduate)
- Doctorate degree (professional)
- Post doctoral fellowship
- Other (please specify)

Other (please specify)

13. What is your primary job function?

- Administrative (e.g. health officer, directors, managers)
- Public health nursing
- Oral health professional (e.g. dental hygienist, dentist)
- Environmental health professional (e.g. sanitarian, lead assessor)
- Public health educator
- Nutritionist (e.g. including WIC staff)
- Other professional staff- non management (e.g. laboratory staff)
- Technical/ paraprofessional (e.g. outreach worker, database)
- Support staff (e.g. clerical/ office assistants)

14. How many years have you worked in public health?

- Less than one year
- 1-4 years
- 5-9 years
- 10-14 years
- 15-19 years
- Over 20 years

2012 Public Health Workforce - Job Satisfaction Survey**15. How many years have you worked at your current agency/ place of employment?**

- Less than one year
- 1-4 years
- 5-9 years
- 10-14 years
- 15-19 years
- Over 20 years

16. How many years have you worked in your current position?

- Less than one year
- 1-4 years
- 5-9 years
- 10-14 years
- 15-19 years
- Over 20 years

17. Do you understand the importance of accreditation via the Public Health Accreditation Board, a national body for your agency or not?

- Yes
- No
- Never heard about public health accreditation before

18. Do you think your agency will be able to become accredited via the Public Health Accreditation Board, a national body, if so how long do you think it will take?

- Yes- less than one year
- Yes- between 2-3 years
- Yes- between 3-5 years
- No
- Never heard about public health accreditation before

2012 Public Health Workforce - Job Satisfaction Survey

Job satisfaction section

Please select the one response for each question that comes closest to reflecting your opinion about it (from disagree to agree).

19. Job Satisfaction Questions

| | Disagree very much | Disagree moderately | Disagree slightly | Agree slightly | Agree moderately | Agree very much |
|--|-----------------------|------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1. I feel I am being paid a fair amount for the work I do. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 2. There is really too little chance for promotion on my job. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 3. My supervisor is quite competent in doing his/her job. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 4. I am not satisfied with the benefits I receive. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 5. When I do a good job, I receive the recognition for it that I should receive. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 6. Many of our rules and procedures make doing a good job difficult. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 7. I like the people I work with. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 8. I sometimes feel my job is meaningless. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 9. Communications seem good within this organization. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 10. Raises are too few and far between. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 11. Those who do well on the job stand a fair chance of being promoted. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 12. My supervisor is unfair to me. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 13. The benefits we receive are as good as most other organizations offer. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 14. I do not feel that the work I do is appreciated. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 15. My efforts to do a good job are seldom blocked by red tape. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

2012 Public Health Workforce - Job Satisfaction Survey

| | | | | | | |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 16. I find I have to work harder at my job because of the incompetence of people I work with. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 17. I like doing the things I do at work. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 18. The goals of this organization are not clear to me. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 19. I feel unappreciated by the organization when I think about what they pay me. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 20. People get ahead as fast here as they do in other places. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 21. My supervisor shows too little interest in the feelings of subordinates. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 22. The benefit package we have is equitable. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 23. There are few rewards for those who work here. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 24. I have too much to do at work. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 25. I enjoy my coworkers. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 26. I often feel that I do not know what is going on with the organization. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 27. I feel a sense of pride in doing my job. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 28. I feel satisfied with my chances for salary increases. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 29. There are benefits we do not have which we should have. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 30. I like my supervisor. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 31. I have too much paperwork. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 32. I don't feel my efforts are rewarded the way they should be. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 33. I am satisfied with my chances for promotion. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 34. There is too much bickering and fighting at work. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 35. My job is enjoyable. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

2012 Public Health Workforce - Job Satisfaction Survey

36. Work assignments are
not fully explained.

Appendix E: Figure 4. University of Wisconsin Milwaukee- Survey Monkey Email Collector- May 23, 2012 Sample

----- Forwarded Message -----

From: Jeanette Lynn Kowalik <jkowalik@uwm.edu>

To: XXXX

Sent: Wed, 23 May 2012 09:41:59 -0500 (CDT)

Subject: Fwd: 2012 Public Health Workforce - Job Satisfaction Survey- for Milwaukee County

Hello:

It was a pleasure speaking to you this am! Here's my dissertation research that I referred to the 2012 Public Health Workforce- Job Satisfaction Survey. My intent is to engage the health departments representing Milwaukee County via SERO and Health Officers to increase response rates. See below for the intro email with the link for completing the survey online. I will also provide hard copy surveys along with self addressed stamped envelopes as needed; please let me know. The data collection period is 8 weeks from today (Friday July 13th). I also attached the IRB approval, hard copy of the survey, online and standard consent forms. THANKS for your support!!! Jeanette

~~~~~  
University of Wisconsin Milwaukee

Study Title: EXAMINATION OF JOB SATISFACTION AS AN INDICATOR OF SUSTAINABILITY OF A MULTIGENERATIONAL PUBLIC HEALTH WORKFORCE  
IRB #12.363 - Approval date 5/2/2012.

Dear public health professional,

In the spirit of leveraging limited resources to improve the delivery of public health services as well as preparation for national public health accreditation (PHAB), Dr. Mary K. Madsen and I are interested in evaluating the climate of our local public health workforce. More particularly, we intend to examine the different generations in the public health workforce related to Job Satisfaction, an indicator of retention. Additional demographic variables will also be collected to determine statistical significance. The Job Satisfaction Survey, a nationally-known tool will be used for the first time in the public health sector. The Job Satisfaction Survey has 36 questions arranged into 9 scales (Pay; Promotion; Supervision; Fringe Benefits; Contingent Rewards; Operating Procedures; Coworkers; Nature of Work; Communication).

We are asking you to assist us by taking a moment to complete the Job Satisfaction Survey. The survey should take approximately 15 minutes to complete but will not exceed 30 minutes. The survey can be accessed by clicking on the link provided in this e-mail message. We will be closing the survey July 13, 2012 so please participate at your earliest convenience.

<https://www.surveymonkey.com/s/NJVNNYC>

Results will be aggregated to maintain confidentiality.

Please feel free to contact us if you require additional information about this endeavor.

Thank you for your assistance,

Mary K. Madsen, PhD and Jeanette Kowalik, MPH  
University of Wisconsin Milwaukee  
College of Health Sciences  
jkowalik@uwm.edu  
414-748-XXXX

**Appendix F: Figure 5. University of Wisconsin Milwaukee- New Study- Notice of IRB Exempt Status Letter- May 2, 2012**



**New Study - Notice of IRB Exempt Status**

**Date:** May 2, 2012

**To:** Mary Madesn, PhD  
**Dept:** College of Health Sciences

**Cc:** Jeanette Kowalik

**IRB#:** 12.363

**Title:** Examination of Job Satisfaction as an Indicator of Sustainability of a Multigenerational Public Health Workforce

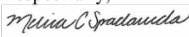
After review of your research protocol by the University of Wisconsin – Milwaukee Institutional Review Board, your protocol has been granted Exempt Status under **Category 2** as governed by 45 CFR 46.101(b).

Unless specifically where the change is necessary to eliminate apparent immediate hazards to the subjects, any proposed changes to the protocol must be reviewed by the IRB before implementation. It is the principal investigator's responsibility to adhere to the policies and guidelines set forth by the UWM IRB and maintain proper documentation of its records and promptly report to the IRB any adverse events which require reporting.

It is the principal investigator's responsibility to adhere to UWM and UW System Policies, and any applicable state and federal laws governing activities the principal investigator may seek to employ (e.g., [FERPA](#), [Radiation Safety](#), [UWM Data Security](#), [UW System policy on Prizes, Awards and Gifts](#), state gambling laws, etc.) which are independent of IRB review/approval.

Contact the IRB office if you have any further questions. Thank you for your cooperation and best wishes for a successful project

Respectfully,

  
 Melissa C. Spadanuda  
 IRB Administrator

**Melissa Spadanuda**  
 IRB Administrator  
 Institutional Review Board  
 Engelmann 270  
 P. O. Box 413  
 Milwaukee, WI 53201-0413  
 (414) 229-3173 phone  
 (414) 229-6729 fax

<http://www.irb.uwm.edu>  
[spadamud@uwm.edu](mailto:spadamud@uwm.edu)

Appendix G: Figure 9. State of Wisconsin ACT 10

<http://docs.legis.wisconsin.gov/2011/related/acts/10.pdf>

## Curriculum Vitae- Jeanette Kowalik

Curriculum Vitae 2013

Jeanette Kowalik

PhD Candidate- Health Sciences  
University of Wisconsin Milwaukee  
Milwaukee, WI 53201

Telephone: (414) XXXXXXXX  
E-mail: jeanettekowalik@me.com

### EDUCATION:

- University of Wisconsin-Milwaukee, Health Sciences, PhD, 2013
- Northern Illinois University, Health Promotion, Master of Public Health, 2006
- University of North Carolina Chapel Hill, Public Health Management, Certificate, 2006
- University of Wisconsin- Milwaukee, Healthcare Administration, Bachelor of Science, 2002

### PROFESSIONAL EXPERIENCE:

|              |                                                                           |
|--------------|---------------------------------------------------------------------------|
| 2012-Present | Director of STI Surveillance, Chicago Department of Public Health         |
| 2013-2013    | Adjunct Professor, Benedictine University                                 |
| 2010-2012    | Director of Health & Life Skills, Boys & Girls Clubs of Greater Milwaukee |
| 2006-2012    | Adjunct Instructor, Bryant & Stratton College                             |
| 2008-2010    | Public Health Specialist, Wauwatosa Health Department                     |
| 2007-2008    | Immunization Program Coordinator, City of Milwaukee Health Department     |
| 2005-2007    | Public Health Educator II, City of Milwaukee Health Department            |
| 2004-2005    | Environmental Hygienist, City of Milwaukee Health Department              |
| 2003-2005    | Childbirth Educator, Up Connection, Inc.                                  |
| 2002-2004    | Nuisance Control Officer I, City of Milwaukee Health Department           |

### RESEARCH INTERESTS:

Public health workforce development, recruitment and retention, diversity of public health workforce, role of workforce in health disparities; community based participatory research; coalition building to impact health outcomes; health policy; youth development.

Dissertation "THE INFLUENCE OF POSITION TYPE AND GENERATIONAL GROUPING ON JOB SATISFACTION OF MILWAUKEE COUNTY'S PUBLIC HEALTH WORKFORCE IRB #12.363 "

#### **PUBLICATIONS IN REFEREED JOURNALS AND BOOKS:**

Madsen, M, Kowalik, J, Smuckler, N, Garber, H, Casey, MK, Bradford, L. (2002). UTILIZING FOCUS GROUPS TO DETERMINE BARRIERS TO PRENATAL CARE ADEQUACY AMONG AFRICAN AMERICAN ADOLESCENTS. *Clinical Research and Regulatory Affairs* 2002 19:4, 351-365

#### **AWARDS and HONORS:**

- Chair's Award—American Public Health Association- Health Administration Section- 2013
- Black Women's Network- 33rd Annual Award Recipient- Well-willed women 2012
- UW-Milwaukee Graduate School- Chancellors Award
- UW-Milwaukee Alumni Association- Jeannette Vincens Scholarship
- Ronald E McNair & Committee for Institutional Cooperation Scholar
- Milwaukee Metropolitan Chamber of Commerce, Scholar

#### **PROFESSIONAL AFFILIATIONS:**

- Boys & Girls Clubs of America  
The Professional Association- Land of Lakes Chapter- Chair (2012)
- American Public Health Association-Member, Co-chair (2012) and Chair (2013) Health Administration section-Program Planning
- Wisconsin Public Health Association- Member
- American College of Healthcare Executives-Affiliate
- Metropolitan Milwaukee Association of Commerce- Student Scholar

#### **PROFESSIONAL ACTIVITIES:**

- National Commission for Health Education Credentialing, Inc.  
Master Certified Health Education Specialist (MCHES)  
October 2012 #20903.
- Served as grant reviewer for the US Department of Education, Carol White Physical Education Program (CFDA 84.215F) (August 2010) and Administration for Children, Youth and Families- Children's Bureau, Comprehensive Support Services for Families Affected by Substance Abuse and/or HIV/AIDS (CFDA 93.551) (2012-2013).
- Chair for the Health Administration section of the American Public Health Association 2012 annual meeting, 2012-2013.
- Co-Chair for the Health Administration section of the American Public Health Association 2012 annual meeting, 2011-2012.
- Chair of the Boys & Girls Clubs of Greater Milwaukee Wellness Committee, 2011-2012.

- President of the Milwaukee County Nutrition and Physical Activity Coalition, 2010-2012.
- Chair for the Boys & Girls Clubs Professional Association, Land of Lakes chapter, 2010-present.
- Facilitated focus group interviews for diverse populations, May 2002-August 2007
- Founding member of the Milwaukee Comprehensive Home Visiting Program (MCHVP)/ Empowering Families of Milwaukee (EFM) by researching evidence based infant mortality reduction interventions and home visiting models.

#### **PARTICIPATION IN EDUCATION:**

- AHLT 111, Intro to Healthcare, Bryant & Stratton College, 2006- 2011
- HTHS 301, Health services management, Bryant & Stratton College, 2010
- HTHS 305, Legal Aspects of healthcare management, Bryant & Stratton College, 2011
- HTHS 410, Health research methods, Bryant & Stratton College, 2011
- HTHS 470, Capstone, Bryant & Stratton College, 2011-2012
- MPH 602, Public Health Systems, Benedictine University, 2013

#### **SUPERVISION:**

- Barbara Humblet, Bryant & Stratton College, Healthcare administration intern, 2012
- Adela Berbovic, Bryant & Stratton College, Healthcare administration intern, 2012
- Hanna Hubbs, UW-LaCrosse, Community Health BS intern, 2012
- Mary Biehl, Marquette University, Exercise physiology intern, 2011
- Angela Amman, UW-Milwaukee, Healthcare administration, intern 2009
- Maureen Bezold, UW-LaCrosse, Master of Public Health intern, 2008
- AJ Beron, UW-Milwaukee, Clinical lab sciences, intern 2008
- Jon Pennycuff, Vanderbilt University, intern 2008

#### **PUBLISHED ABSTRACTS, PAPERS PRESENTED AT MEETINGS, POSTERS AND INVITED LECTURES:**

##### Meeting Participation:

Authored and presented, “Can't get no satisfaction: an exploratory review of the local public health workforce and Job Satisfaction as a predictor of sustainability” at the Public Health Systems & Services Research, Keeneland Conference in Lexington, KY (April 2013).

Co-authored and presented “Examining Job Satisfaction as an indicator of retention: A multigenerational perspective of the local public health workforce” at the American Public Health Association's 140th annual meeting and expo in San Francisco, California (October 2012).



Co-authored and presented (poster) with Maureen Bezold, PhD, MPH "Let's get Flexible, Flexible!: Embracing a Multigenerational Public Health Workforce" at Public Health Systems & Services Research, Keeneland Conference in Lexington, KY (April 2010).

Co-authored and presented with Maureen Bezold, PhD, MPH "Let's get Flexible, Flexible!: Embracing a Multigenerational Public Health Workforce" at the American Public Health Association's 137th annual meeting and expo in Philadelphia, PA (November, 2009).

Co-authored and presented (poster) "Building Public-Private Partnerships in Pan Flu Response Planning: The City of Milwaukee Model" at the National Association of County and City Health Officials Public Health Preparedness Summit in Atlanta, GA (February 2008).

Co-authored and presented with Bevan K. Baker, current Commissioner of Health for the City of Milwaukee (poster) "The Milwaukee Center for Emergency Public Health Preparedness: Improving Public Health-Health Care Communications for Bio-terrorism and Other Emergencies" at the American College of Healthcare Executives National Congress in Chicago, IL (March, 2002).

Co-authored with Mary K. Madsen, PhD, RN "Factors Contributing as Obstacles to the Effective Communication of Health Care in An Urban Setting" which was presented at the Second International Healthcare Conference at Baskent University in Ankara, Turkey (July, 2002).

Authored "Increasing communication concerning the initiation of adequate prenatal care in minority populations." Presented at the National Ronald E. McNair Scholars Research Conference in Delavan, WI (November, 2001), the American Multicultural Student Leadership Conference at the University of Wisconsin Eau Claire (April, 2002) and the Annual Summer Research Opportunities Program Conference at the Pennsylvania State University (July, 2002).