

# Job Satisfaction: A Critical, Understudied Facet of Workforce Development in Public Health

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**Context:** The field of public health faces multiple challenges in its efforts to recruit and retain a robust workforce. Public health departments offer salaries that are lower than the private sector, and government bureaucracy can be a deterrent for those seeking to make a difference. **Objective:** The objective of this research was to explore the relationship between general employee satisfaction and specific characteristics of the job and the health agency and to make recommendations regarding what health agencies can do to support recruitment and retention.

**Design:** This is a cross-sectional study using data collected from the 2014 Public Health Workforce Interests and Needs Survey (PH WINS). A nationally representative sample was constructed from 5 geographic (paired adjacent HHS [US Department of Health and Human Services]) regions and stratified by population and state governance type. Descriptive and inferential statistics were analyzed using the balanced repeated replication method to account for the complex sampling design. A multivariate linear regression was used to examine job satisfaction and factors related to supervisory and organizational support adjusting for relevant covariates. **Setting and Participants:** PH WINS data were collected from state health agency central office employees using an online survey. **Main Outcome Measure:** Level of job satisfaction using the Job in General Scale (abridged). **Results:** State health agency central office staff ( $n = 10\,246$ ) participated in the survey (response rate 46%). Characteristics related to supervisory and organizational support were highly associated with increased job satisfaction. Supervisory status, race, organization size, and agency tenure were also associated with job satisfaction. **Conclusions:** Public health leaders aiming to improve levels of job satisfaction should focus on workforce

development and training efforts as well as adequate supervisory support, especially for new hires and nonsupervisors.

**KEY WORDS:** job satisfaction, public health, workforce

Since 2008, many state and local health agencies have experienced resource reductions and 91% of all state health agencies (SHAs) have experienced job losses due to attrition, contributing to a decreased public health workforce.<sup>1-5</sup> While the exact number of these losses is unknown, the pattern is well established.<sup>6-8</sup> This decrease in funding is especially troubling, considering that increased public health spending has been positively associated with improved health outcomes and decreased preventable deaths.<sup>9</sup> Furthermore, with the implementation of the Patient Protection and Affordable Care Act, a number of states are undergoing Medicaid expansion that may further the importance of public health agencies being ready to provide increased services with fewer staff.<sup>10,11</sup>

It is critical in this time of budget constraints that the public health system recruit and retain a high-quality, skilled workforce.<sup>6,12</sup> High workforce turnover can be

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detrimental to an organization's economic health. In a study by Merck and Company, it is estimated that replacing an employee costs 150% of the individual's annual salary and benefits package.<sup>13</sup> New employees take extra time and resources to onboard, train, relocate, and recruit. In many cases, it is more useful to retain experienced employees with a high level of institutional knowledge. In fact, several studies from service-driven organizations suggest that while turnover may bring diversity to an organization, those with a stable, experienced workforce outperform those with high levels of employee turnover.<sup>13-16</sup>

According to Sellers et al,<sup>17</sup> 42% of the current SHA workforce are considering leaving their organization in the next year or are planning to retire by 2020. About 4% of staff are considering leaving their organization in the next year for another position in governmental public health. To retain the best and most essential staff, it is critical to examine the factors associated with attrition. A strong predictor of whether employees leave their organizations is their level of job satisfaction. Studies have shown that workers with high levels of job satisfaction stay at their organizations longer, are more productive and motivated, and have less absenteeism, greater organizational commitment, and higher levels of engagement.<sup>15,18,19</sup> Job satisfaction studies have been conducted for decades among the private sector, medical and education communities, social workers, and many others. However, there is little research or evidence exploring job satisfaction in public health.

There are several theories and models that can be adapted to explain job satisfaction.<sup>20-23</sup> A common theme among these models and theories is that the employees' needs and motivations are taken into account, whether these are recognition, adequate training, feedback, or the quality of relationships with supervisors and coworkers.<sup>20-24</sup> There is a vast amount of literature that examines the relationship between employees' needs, motivations, and job satisfaction. However, these studies use varying measures and have mixed results. For example, some studies have found that job satisfaction is most correlated with organizational factors such as quality of supervision and the supervisor-subordinate relationship, leadership practices, workplace training, organization size, and salary whereas others focus on demographic characteristics such as race and gender.<sup>24-27</sup> Results from these studies provide direction for disciplines such as public health that have limited evidence relating to job satisfaction.

The primary purpose of this article is to characterize the current level of job satisfaction among a nationally representative sample of state public health agency employees and to identify the factors that are correlated with high and low levels of satisfaction. The secondary purpose of this article is to prioritize these factors to assist public health leaders in identifying high-impact

areas to improve job satisfaction among staff. The focus of this study was not to examine personal and demographic characteristics that are unlikely to change, but rather to focus on the aspects of the workplace environment that influence job satisfaction.

## ● Methods

### Survey development

This project received a determination of "exempt" from the Chesapeake Institutional Review Board (Pro00009674). This article examines the workplace environment characteristics associated with the job satisfaction of the public health workforce using data collected from Public Health Workforce Interests and Needs Survey (PH WINS). The methods describing the creation of PH WINS are explained in "The Methods Behind PH WINS" in this supplement to *Journal of Public Health Management and Practice*.<sup>28</sup> To summarize, the purpose of PH WINS was to collect individual worker perspectives across all disciplines and geographic regions. The development of PH WINS began in 2013, with a consensus-building process among 31 public health stakeholders representing an array of disciplines.<sup>29</sup> A technical expert panel was convened to guide the sampling methodology, instrument creation, and protocols for survey fielding and administration.<sup>28</sup>

PH WINS has 4 main sections: training needs, workplace environment/job satisfaction, perceptions of national trends, and demographics.<sup>17</sup> Items from PH WINS used in this analysis were adapted from the United States Office of Personnel Management Annual Survey and Federal Employee Viewpoint Survey, the CDC Technical Assistance and Service Improvement Initiative: Project Officer Survey, the Public Health Foundation Worker Survey, and the Bowling Green University Job in General (JIG) Scale (abridged).<sup>30-33</sup>

After pretesting and preliminary psychometric analysis (also explained in "The Methods Behind PH WINS"), the instrument was fielded among 37 states from September to December 2014.<sup>28</sup> A total of 40 091 survey invitations were sent out to health agency employees in the 37 participating states; 19 171 responded for a raw response rate of 48%. After adjusting for noncentral office staff, nonpermanent employee status, undeliverable e-mail addresses, and those who were no longer in their position, the response rate was 46% (n = 10 246). A nationally representative data set of central office staff, defined as permanent employees who work in the central office of the SHA as opposed to having been assigned to local or regional offices, was constructed. A set of weights was calculated using balanced repeated replication to account for differential nonresponse and demographic characteristics.

## Job satisfaction

Job satisfaction was measured using the Bowling Green State University JIG Scale (abridged).<sup>33</sup> This validated scale includes 8 descriptive words or phrases such as “makes me content” and “better than most” to determine overall job satisfaction. Generally, a score above 27 signifies satisfaction with one’s job and a score less than 22 signifies dissatisfaction.<sup>34</sup>

We describe the job satisfaction of the study population among several categories including age, race, gender, highest level of educational attainment, supervisory status, salary, region, agency tenure, and agency size. We used the SHA workforce data from the 2012 ASTHO Profile to determine agency size. State health agencies with a workforce of 700 or fewer are categorized as small, between 701 and 1400 as medium, and more than 1400 as large. Overall, 18% are small, 24% medium, and the remaining 58% are classified as large.

Independent-group *t* tests, 1-way analysis of variance, and post hoc Tukey tests for pairwise mean comparisons were performed to identify differences in JIG Scale score among and within these variables; these are presented in Table 1. A thorough description of the study population, including demographic information and educational background, is presented in this issue (“Highlights From the Public Health Workforce Interests and Needs Survey: The First Nationally Representative Survey of State Health Agency Employees.”)<sup>17</sup>

## Workplace environment

This article focuses on examining the relationship between the employees’ perceptions of workplace environment characteristics and job satisfaction while accounting for demographic characteristics and other covariates. There were 20 items in PH WINS that ascertained the employees’ perception of their workplace environment. These items were measured with a 5-point Likert scale from *strongly agree* to *strongly disagree*. To condense these items in broader categories, a factor analysis was conducted (Table 2). For each factor, we examined the proportion of SHA staff by level of agreement with items such as “my supervisor/team leader treats me with respect.” All such items were worded in a positive manner such that agreement indicated a higher level of support. In addition, to prioritize workplace environment items, we compared mean JIG Scale scores by level of agreement, and analyze the significant differences in the results section. These factors will serve as the primary dependent variables.

## Regression model

A multivariate linear regression examining the correlates of individuals’ JIG Scale score is presented in

Table 3. Selection of independent variables and covariates was based on the theoretical importance from the literature review and the preliminary statistical analysis. Pearson correlation coefficients were calculated to detect the general strength and the direction of the relationship between the variables of interest. Salary and supervisory status were highly correlated, and salary was dropped from the final model on the basis of conflicting findings from the literature review.<sup>15,35</sup> Age and agency tenure were also correlated, and age was dropped from the model because previous studies have identified agency tenure as a correlate of job satisfaction.<sup>24</sup> Other variables in the model were significantly correlated (supervisory status and agency tenure) but had low correlation coefficients and therefore remained in the final model.

The final model included workplace environment factors, supervisory status, gender, race, years with the employee’s current agency (agency tenure), highest level of educational attainment, organization size, and region. Model fit was checked by a variety of measures, including plotting the residuals, examining outliers, and checking the  $r^2$  value. Collinearity was examined by calculating variance inflation factors. The results indicated that the chosen model is stable and explains 45% of the variation in job satisfaction.

## ● Results

### Job satisfaction of the SHA workforce

As shown in Table 1, a majority of survey respondents were very satisfied with their job and had an overall mean JIG Scale score of 37.19 (95% confidence interval [CI], 36.8-37.61). Typically a JIG Scale score above 27 indicates satisfaction.<sup>34</sup> There were no significant differences in the JIG Scale score by gender or education. There was a significant difference in the JIG Scale score between those making a salary of \$35 000 or less, \$35 000.01-\$55 000, and \$95 000 or higher ( $P < .01$ ). There were also significant differences in the JIG Scale score between nonsupervisors and supervisors and between managers and executives ( $P < .01$ ). In addition, there were significant differences between executives and the other categories (team leaders, supervisors, and managers;  $P < .01$ ). In both cases, higher levels of supervisory status and higher salaries were associated with a higher JIG Scale score. However, because salary and supervisory status were highly correlated, we dropped salary level from the model. Having a tenure with the agency between 0 and 5 years was associated with a higher JIG Scale score than a tenure with the agency of 6-10 or 11-15 years ( $P < .01$ ). White SHA employees had a significantly higher JIG Scale score

**TABLE 1 ● Mean Job in General Scale (Abridged) Score Comparisons by Demographic, Job, and Organizational Characteristics**

	Mean	95% CI		Mean	95% CI
Supervisory status <sup>a</sup>			Salary <sup>a</sup>		
Nonsupervisor	36.37	35.88-36.87	≤\$35 000	35.87	34.77-36.97
Team leader	36.61	35.6-37.61	\$35 000.01-\$55 000	36.66	36.10-37.22
Supervisor	38.50	37.85-39.15	\$55 000.01-\$75 000	37.36	36.72-38.00
Manager	38.16	37.27-39.05	\$75 000.01-\$95 000	37.39	36.50-38.27
Executive	41.71	40.19-43.23	≥\$95 000.01	40.07	39.29-40.86
Gender			Degree		
Male	37.49	36.73-38.25	Associate's	36.12	35.08-37.16
Female	37.09	36.70-37.49	Bachelor's	37.15	36.56-37.73
			Graduate	37.38	36.82-37.93
Agency size <sup>a</sup>			Region <sup>a</sup>		
Small	38.34	37.43-39.25	New England and Atlantic	37.38	36.48-38.28
Medium	36.81	36.28-37.33	Mid-Atlantic and Great Lakes	37.45	37.10-37.81
Large	36.98	36.35-37.61	South	36.81	35.99-37.64
Age, <sup>a</sup> y			Mountain/Midwest	38.38	37.40-39.35
≤25	40.46	38.9-42.02	West	36.72	35.43-38.00
26-30	38.10	36.44-39.72			
31-35	36.97	35.83-38.10	Tenure in agency <sup>a</sup>		
36-40	37.96	37.14-38.78	0-5 y	37.92	37.16-38.70
41-45	37.01	35.64-38.42	6-10 y	36.57	35.91-37.22
46-50	36.93	35.85-38.02	11-15 y	36.70	35.87-37.52
51-55	37.12	36.14-38.10	16-20 y	36.81	35.71-37.90
56-60	36.33	35.31-37.35	≥21 y	37.13	36.32-37.93
61-65	37.65	36.81-38.48			
≥66	38.12	35.98-40.27	Race <sup>a</sup>		
			Nonwhite	36.58	36.07-37.08
			White	37.50	37.49-37.94

<sup>a</sup>Represents significant differences within groups <0.01.

than nonwhite employees ( $P < .01$ ). Younger employees (those younger than 25 years) had a significantly higher JIG Scale score than those who were 31 to 65 years of age ( $P < .03$ ). There were also significant differences when comparing the size of the SHA. Both small and large organizations had significantly higher JIG Scale scores than medium-sized organizations ( $P < .01$ .) Geographically, the New England and Atlantic regions (HHS [US Department of Health and Human Services] 1 & 2) had a significantly lower JIG Scale score than the Mountain/Midwest regions (HHS 7 & 8) ( $P < .01$ ).

### Workplace environment characteristics and job satisfaction

The factor analysis (Tables 2 and 3) resulted in 3 categories: supervisory support, organizational support, and employee engagement. Because the literature

shows that organizational support (training, communication, workload) and supervisory support (respect, good relationships, working well with individuals of different backgrounds) were associated with job satisfaction, they were chosen as primary independent variables for the regression model and items related to employee engagement were excluded.<sup>15,24,25,35</sup>

### Supervisory support

At least 66% of employees agreed or strongly agreed that items characterized as supervisory support were present in their work environment. These items are shown in Table 2 and include the following: "my supervisor/team leader treats me with respect," "my supervisor and I have a good working relationship," "my supervisor supports my need to balance work and family issues," "my supervisor/team leader provides me with opportunities to demonstrate my

**TABLE 2 ● Proportion and Mean JIG Scale Score of Items Related to Supervisory Support**

	%	95% CI	JIG Scale Score	95% CI
My supervisor/team leader treats me with respect <sup>a</sup>				
Strongly disagree	3	3-4	17.63	15.18-20.08
Disagree	5	4-5	21.94	20.37-23.50
Neither agree nor disagree	10	9-10	28.36	27.26-29.46
Agree	38	37-39	36.76	36.14-37.39
Strongly agree	44	43-45	42.07	41.73-42.42
My supervisor and I have a good working relationship <sup>a</sup>				
Strongly disagree	2	2-3	16.99	14.89-19.08
Disagree	4	3-4	22.16	20.63-23.69
Neither agree nor disagree	10	10-11	27.77	26.98-28.56
Agree	40	39-41	36.77	36.18-37.36
Strongly agree	44	42-44	42.11	41.81-42.41
My supervisor supports my need to balance work and family issues <sup>a</sup>				
Strongly disagree	2	2-2	19.22	15.44-23.00
Disagree	4	3-4	25.10	23.04-27.16
Neither agree nor disagree	10	10-11	28.28	27.05-29.50
Agree	40	39-41	36.32	35.91-36.74
Strongly agree	44	42-45	41.58	41.20-41.97
My supervisor/team leader provides me with opportunities to demonstrate my leadership skills <sup>a</sup>				
Strongly disagree	5	4-5	18.28	16.49-20.08
Disagree	10	10-11	26.27	25.5-27.09
Neither agree nor disagree	19	18-20	33.97	33.32-34.62
Agree	41	40-42	39.44	38.89-40.00
Strongly agree	25	24-26	43.32	42.87-43.76
Supervisors/team leaders in my work unit support employee development <sup>a</sup>				
Strongly disagree	4	3-4	18.43	16.26-20.60
Disagree	8	8-9	24.75	23.76-25.74
Neither agree nor disagree	18	17-19	31.79	31.05-32.53
Agree	45	44-46	39.20	38.79-39.60
Strongly agree	25	24-27	43.74	43.23-44.25
Supervisors/team leaders work well with employees of different backgrounds <sup>a</sup>				
Strongly disagree	3	3-4	18.53	16.61-20.45
Disagree	7	7-8	23.92	22.18-25.65
Neither agree nor disagree	18	17-19	32.33	31.42-33.24
Agree	48	47-49	39.3	38.94-39.65
Strongly agree	23	22-24	43.01	42.57-43.44

Abbreviation: JIG Scale, Job in General Scale (Abridged).  
<sup>a</sup>Represents significant differences within groups <0.05.

**TABLE 3 ● Proportion and Mean JIG Scale Score of Items Related to Organizational Support**

	%	95% CI	JIG Scale Score	95% CI
Employees have sufficient training to fully utilize technology needed for their work <sup>a</sup>				
Strongly disagree	6	5-6	23.61	21.49-25.73
Disagree	22	21-23	32.65	31.95-33.34
Neither agree nor disagree	23	23-24	36.43	35.78-37.09
Agree	40	38-41	40.20	39.69-40.70
Strongly agree	9	9-10	44.17	43.64-44.70
My training needs are assessed				
Strongly disagree	6	5-6	22.67	20.50-24.84
Disagree	21	20-22	31.67	30.91-32.44
Neither agree nor disagree	28	27-29	37.07	36.45-37.69
Agree	35	34-36	40.83	40.32-41.34
Strongly agree	10	9-10	44.57	44.05-45.09
Communication between senior leadership and employees is good in my organization <sup>a</sup>				
Strongly disagree	12	11-13	24.28	23.56-24.99
Disagree	22	21-23	32.74	31.71-33.76
Neither agree nor disagree	23	22-25	37.63	37.17-38.09
Agree	32	31-33	42.13	41.72-42.53
Strongly agree	11	10-11	44.81	44.49-45.13
Creativity and innovation are rewarded <sup>a</sup>				
Strongly disagree	9	8-10	21.73	20.49-22.97
Disagree	20	19-21	31.07	30.08-32.06
Neither agree nor disagree	32	31-33	37.64	37.26-38.01
Agree	29	28-30	42.39	41.98-42.80
Strongly agree	10	10-11	45.38	44.96-45.80
My workload is reasonable <sup>a</sup>				
Strongly disagree	6	6-7	24.25	21.80-26.70
Disagree	15	15-16	32.13	30.83-33.43
Neither agree nor disagree	16	15-17	34.15	33.09-35.21
Agree	48	47-49	39.61	39.20-40.01
Strongly agree	14	13-15	43.43	42.89-43.97
I recommend my organization as a good place to work <sup>a</sup>				
Strongly disagree	5	4-5	16.38	14.77-17.99
Disagree	9	8-10	21.82	20.90-22.73
Neither agree nor disagree	23	22-24	32.01	31.53-32.48
Agree	43	41-45	41.25	40.94-41.56
Strongly agree	20	19-21	45.40	45.17-45.62

Abbreviation: JIG Scale, Job in General Scale (Abridged).  
<sup>a</sup>Represents significant differences within groups <0.05.

leadership skills," "supervisors/team leaders in my work unit support employee development," and "supervisors/team leaders work well with employees of different backgrounds." The 3 items with the highest levels of disagreement were as follows: "my supervisor/team leader provides me with opportunities to demonstrate my leadership skills," "supervisors/team leaders in my work unit support employee development," and "supervisors/team leaders work well with employees of different backgrounds." For each item, a higher level of agreement was associated with a higher JIG Scale score. The 2% of employees who strongly disagreed with the statement, "my supervisor and I have a good working relationship," had the lowest mean JIG Scale score (16.99). The supervisory support item with the highest mean JIG Scale score was "supervisors/team leaders in my work unit support employee development." Employees who strongly agreed with that statement had a mean JIG Scale score of 43.74.

**Organizational support**

There was less agreement with items related to organizational support than supervisory support. The highest level of agreement (62%) was for the statement "my workload is reasonable." Those employees who agreed with that statement had a mean JIG Scale score of 43.43. The 2 items with the lowest levels of agreement were "communication between senior leadership and employees is good in my organization" and "creativity and innovation are rewarded." Those who strongly disagreed with these statements had respective mean JIG Scale scores of 24.28 and 21.73, respectively. These scores indicate a neutral attitude toward the job, rather than satisfaction. The organizational support item with the lowest mean JIG Scale score was among employees who strongly disagreed with the statement "my organization is a good place to work." These individuals had a mean JIG Scale score of 16.38, which signifies overall dissatisfaction with their job. Interestingly, this item also had the highest mean JIG Scale score (45.40) among employees who strongly agreed that their organization was a good place to work. Both supervisory and organizational support characteristics showed significant, positive relationships with the JIG Scale score.

**Regression results**

To further examine the relationship between supervisory and organizational support and job satisfaction, we ran a multivariate linear regression using the JIG Scale score as the primary dependent variable and 2 factors of the workplace environment, supervisory support and organizational support, as the primary independent variables (Table 4).

**TABLE 4 • Results of Multivariate Linear Regression on the Correlates of Job Satisfaction (Job in General Scale [Abridged] Scale Score)**

Independent Variables	$\beta$	SE	P	95% CI
Supervisory support	4.26	0.19	<.001	3.88-4.65
Organizational support	6.75	0.26	<.001	6.23-7.28
Supervisory status				
Nonsupervisor (Ref)				
Team leader	0.45	0.46	.33	-0.47 to 1.37
Supervisor	1.01	0.29	.002	0.42-1.60
Manager	1.12	0.39	.01	0.32-1.91
Executive	1.34	0.67	.05	-0.01-2.69
Gender				
Male (Ref)				
Female	0.32	0.39	.42	-0.47 to 1.11
Race				
Other (Ref)				
White	0.68	0.19	.001	0.30-1.07
Tenure in agency				
0-5 y (Ref)				
6-10 y	0.62	0.46	.19	-0.31 to 1.54
11-15 y	1.07	0.45	.02	0.16-1.98
16-20 y	1.06	0.44	.02	0.17-1.95
≥21 y	1.25	0.54	.03	0.15-2.35
Degree earned				
Associate's (Ref)				
Bachelor's	0.49	0.39	.22	-0.31 to 1.28
Graduate	0.82	0.35	.02	0.12-1.53
Agency size				
Small (Ref)				
Medium	-0.91	0.51	.08	-1.94 to 0.12
Large	-1.24	0.50	.02	-2.26 to -0.22
Pairwise region				
New England and Atlantic (Ref)				
Mid-Atlantic and Great Lakes	-0.19	0.25	.46	-0.70 to 0.32
South	-0.41	0.48	.40	-1.37-0.56
Mountain/Midwest	-0.64	0.70	.37	-2.06 to 0.78
West	0.29	0.51	.57	-0.74-1.33

State health agency employees who reported higher levels of supervisory support had an increased JIG Scale score of 4.26 (95% CI, 3.88-4.65). Employees with higher levels of organizational support had an increased JIG Scale score of 6.75 (95% CI, 6.23-7.28) after adjusting for covariates. Organizational support had a higher coefficient, suggesting that job satisfaction is more closely related to organizational support than to supervisory support. This finding is consistent with our descriptive analysis in Tables 2 and 3. Employees

agreed less with organizational support factors than with supervisory support factors.

Other factors significantly associated with the JIG Scale score include race, agency tenure, supervisory status, and agency size. Education, gender, and geographic region showed no significant relationship to the JIG Scale score in the multivariate linear regression.

## ● Discussion

This study, for the first time, examined job satisfaction among a nationally representative sample of SHA employees and contributes to the current job satisfaction literature by introducing a new discipline: public health. The goals of this study were to characterize the current level of job satisfaction among public health workers, identify the factors that are correlated with high and low levels of satisfaction, and recommend strategies for public health practitioners aiming to improve job satisfaction, motivation, performance, and retention of employees.

The SHA workforce has a very high level of job satisfaction. This finding was unexpected considering the constant change and uncertainty in the field related to policy, funding, and technology. In this study, employees who strongly agreed with survey items related to organizational support had a significantly higher job satisfaction score. Components of organizational support (Table 3) included training, communication, creativity, workload, and whether individuals recommend their organization as a good place to work. Assessing training needs and rewarding creativity and innovation were the items with the highest level of disagreement. These results suggest that the greatest impact and mechanism for improving organizational support and therefore job satisfaction are through assessing training needs and allowing SHA employees to work in creative and innovative ways. This confirms findings from other studies that emphasize the relationship between workplace learning and job satisfaction.<sup>25</sup> Rowden<sup>25</sup> found that informal and incidental training opportunities, including coaching and mentoring, were more associated with overall satisfaction as well as a feeling of recognition and support by the organizations. It is a common theme in public health to advocate for increased training activities and workforce development. In addition to improving skills and performance, this study suggests that investment of time and money into addressing training needs will increase job satisfaction. Further research and evaluation should be conducted to determine the type of training and the methods of delivery that will leave employees feeling empowered and supported to do their work.

Attention should also be given to exploring how creativity can be interjected into a work environment that can have highly bureaucratic constraints. Results from this study suggest that employees do not feel that creativity and innovation are rewarded. That lack of creativity contributes to low job satisfaction and possibly attrition. This finding aligns with other studies that emphasize the importance of autonomy and working independently.<sup>24</sup> Employees may feel that they are constricted by their work environment, given rules and regulations associated with federal funding, state policies and procedures, and/or other bureaucratic considerations. State health agencies should recognize that diversifying funding sources, engaging in partnerships, and revamping policies and procedures to allow employees to innovate and work creatively are all important to achieving public health goals and will also lead to important gains in job satisfaction, performance, and retention.

Another method of increasing job satisfaction is through supervisory support. This study found that higher levels of supervisory support were associated with a higher degree of job satisfaction. Items describing supervisory support, as shown in Table 2, describe aspects of the supervisory-subordinate relationship. Supervisory items with the lowest levels of agreement included providing opportunities to demonstrate leadership skills, supporting employee development, and working well with employees of different backgrounds. This finding supports previous works that stress the importance of communication, empowerment, autonomy, and trust in the workplace.<sup>15,24</sup> Campbell et al<sup>24</sup> found that vertical communication and collaboration between supervisors and subordinates significantly increased job satisfaction among public health nurses. Governmental public health agencies may want to encourage managers to provide increased responsibility and opportunities for their staff to take the initiative on a small project. Allowing these opportunities could increase trust, provide a workforce development opportunity, and allow the supervisor to coach their employee in a safe, controlled environment.

Clearly, the public health workforce values high-quality supervisory relationships. To meet this need, public health practitioners should consider actively identifying internal communication channels to gather feedback at all levels of the organization. Furthermore, employees who supervise others may find management and diversity training that emphasizes active listening, open communication, and clear expectations as one avenue to ensure that managers are adequately equipped to provide supervisory support.

This study also examined whether satisfaction differed significantly by gender, race, educational attainment, supervisory status, and agency tenure.

Significant differences in job satisfaction were identified among employees with a shorter agency tenure, who are nonwhite, and who are not in a supervisory position. This suggests that employees falling into these categories require more organizational and supervisory support efforts. Employees with greater agency tenure, experience, and comfort in their role could have an increased sense of security in their position compared with new hires.<sup>20,24</sup> Offering orientation and onboarding programs may boost new hires' levels of comfort and security and promote assimilation into the new work environment. In addition, providing continued support and professional development with increased job responsibilities through an employee's first few years may continue to increase the average employee tenure in an organization.

Also consistent with other studies was the finding that individuals in supervisory positions have significantly higher levels of job satisfaction.<sup>24,36</sup> This reaffirms the finding that worker empowerment is a critical component of job satisfaction. Employees who feel empowered to make decisions and contributions are more likely to have higher job satisfaction.<sup>36-38</sup> This finding aligns with several items of supervisory and organizational support such as feeling that "creativity and innovation are rewarded" and "my supervisor/team leader provides me with opportunities to demonstrate my leadership skills." Finally, white employees had a significantly higher JIG Scale score than nonwhite employees. It is beyond the scope of this article to explore the complex personal and emotional factors related to diversity and job satisfaction. This finding is highlighted to make practitioners aware that employees may have individual and specific needs to achieve the highest levels of job satisfaction.

Findings from this study extend our current knowledge of job satisfaction in public health. It is clear that workforce development needs and training should be prioritized, but it is also evident that good working relationships between supervisors and supervisees are critical. Because both organizational and supervisory support were highly correlated with job satisfaction, programs that address both factors may have the highest impact. Public health leaders should encourage informal coaching and mentoring targeted at groups with significantly lower satisfaction. Simply providing time and the place for these relationships to develop may provide the additional organizational and supervisory support necessary to decrease the differences in job satisfaction. Furthermore, having this added interaction and relationship could positively impact employees' relationships with SHA leaders, adding to the individuals' perceptions of supervisory support.

## Limitations

There were 4 main limitations of this study. First, the PH WINS data could have increased accuracy and generalizability if the 13 other states had participated. While these estimates have very low standard errors, stronger conclusions could be drawn with more SHA representation. The second limitation of this study is not accounting for every factor associated with job satisfaction. Highly personal information such as marital status, health status, and personality characteristics were not measured in PH WINS and have all been shown to impact individual job satisfaction.<sup>26,39,40</sup> Another limitation of this study is the possible bias that may exist in the data. During the fielding of PH WINS, several survey participants voiced concerns about their privacy and possible identification. This fear may have introduced bias that would overestimate job satisfaction. Although PH WINS data have these limitations, we expect that biases are ameliorated by the high number of survey respondents. A final limitation is that this study was cross-sectional. While several interesting associations were found, the findings should not be interpreted as causal.

## Conclusion

While SHA workers seem to be very satisfied with their jobs, identifying the factors associated with job satisfaction is critical to successful strategies to improve retention and performance. Practitioners should focus on factors related to organizational and supervisory support. Efforts that assess and meet the training needs of new employees while building respect and trust from supervisors may be the most effective methods to ensure high levels of job satisfaction. Informal mentorship programs are one example of an initiative that addresses factors associated with organizational and supervisory support at low cost. Further research is needed to clearly identify and prioritize methods to improve organizational and supervisory support and how these factors relate to motivation, performance, and retention.

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