

Loving and Leaving Public Health: Predictors of Intentions to Quit Among State Health Agency Workers

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Context: State health agencies play a critical role in protecting and promoting the health and well-being of the people they serve. To be effective, they must maintain a highly skilled, diverse workforce of sufficient size and with proper training.

Objective: The goal of this study was to examine demographics, job and workplace environment characteristics, job satisfaction, and reasons for initially joining the public health workforce as predictors of an employee's intentions to leave an organization within the next year. **Design:** This study used a cross-sectional design. Respondents were selected on the basis of a stratified sampling approach, with 5 geographic (paired Health and Human Services [HHS] regions) as the primary strata. Balanced repeated replication was used as a resampling method for variance estimation. A logistic regression model was used to examine the correlates of intentions to leave one's organization within the next year. The independent variables included several measures of satisfaction, perceptions about the workplace environment, initial reasons for joining public health, gender, age, education, salary, supervisory status, program area, and paired HHS region.

Setting and Participants: The sample for this study consisted of 10 246 permanently employed state health agency central office employees who responded to the Public Health Workforce Interests and Needs Survey (PH WINS). **Main Outcome**

Measure: Considering leaving one's organization within the next year. **Results:** Being a person of color, living in the West (HHS regions 9 and 10), and shorter tenure in one's current position were all associated with higher odds of intentions to leave an organization within the next year. Conversely, greater employee engagement, organizational support, job satisfaction, organization satisfaction, and pay satisfaction were all significant

predictors of lower intentions to leave one's organization within the next year. **Conclusions:** Results from this study suggest several variables related to demographics, job characteristics, workplace environment, and job satisfaction that are predictive of intentions to leave. Future researchers and state health agencies should explore how these findings can be used to help with retention of employees in the state health agency workforce.

KEY WORDS: job satisfaction, public health workforce, intentions to quit, state health agencies, turnover

State health agencies play a critical role in protecting and promoting the health and well-being of the people they serve. To most effectively provide the multitude of services and activities that are under their purview, state health agencies must employ a talented and diverse workforce of skilled and properly trained individuals. Since the economic downturn in 2008, state health agencies have been forced to make cuts to their budgets, reducing the services they can provide and

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decreasing the size of their workforce through hiring freezes and elimination of positions.¹ At the same time, the average age of the current state health agency workforce has continued to rise, and an increasing number of employees are approaching retirement.² According to the Association of State and Territorial Health Officials (ASTHO) Profile Survey, the average percentage of state health agency employees who are eligible for retirement is projected to increase from 18% in fiscal year (FY) 2012 to 25% in FY 2016.² In addition, 12% of positions at state health agencies are currently vacant, but only 24% of vacant positions are actively being recruited for.²

With losses in the total number of state health agency workers and the continuous arrival of new and serious health threats, such as Ebola or measles, in addition to long-standing public health issues, it is imperative for state public health agencies to work to retain a skilled workforce of sufficient size and training.³⁻⁶ This is especially important given the substantial costs of recruiting, hiring, and training new staff. A better understanding of what factors contribute to employees' decisions to stay at their jobs or leave may help avoid or reduce these costs.

● Research on Predictors of Intentions to Leave

The research literature on predictors of employee turnover and turnover intentions has tended to focus on clusters of variables, many based on the conceptual model of Mobley et al,⁷ which includes individual-level variables, organizational factors, job satisfaction, availability of other options, economics/the labor market, and several other potential indicators. Findings on the relationship between demographic variables and intentions to leave an organization have been mixed. While Moynihan and Landuyt⁸ found that women are less likely to quit than men, a meta-analysis conducted by Griffeth⁹ did not find a consistent relationship between gender and turnover intentions. Similarly, findings on race/ethnicity have been mixed. In their survey of federal government workers, Pitts et al¹⁰ found that people of color were more likely to leave the federal government than were white employees. Selden and Moynihan¹¹ and Griffeth,⁹ on the contrary, did not find differences in intentions to quit by race/ethnicity. Age has been linked to intentions to leave, with younger individuals being more likely to quit than older employees.^{7,10,12} Similarly, shorter tenure at one's agency or in one's position has been positively associated with intentions to leave.^{7,12} Level of educational attainment, on the contrary, has been found to be a negative predictor of intentions to leave.^{8,13}

While results on demographic variables have been mixed, the research findings on the relationship between job satisfaction and intentions to leave have been strong and consistent across studies. Employees who are more satisfied with their job overall, or with various elements of their job (eg, salary, job content, advancement opportunities), are less likely to intend to leave, or to actually leave their job, than are employees dissatisfied with their job or pay.^{7-11,13,14}

The extent to which employees feel engaged in their work, supported by their organization, and satisfied with their supervisor has also been studied as potential predictors of intentions to leave. Research suggests that some elements of the workplace environment have been shown to predict intentions to leave. For example, Griffeth's⁹ meta-analysis found organizational commitment and work group cohesion to be predictive of lower turnover. Leadership support, on the contrary, did not predict intentions to leave. In their study of 4 samples of different occupational groups, Van Dick et al¹⁵ found that organization identification (the perceived overlap between an employee's self-concept and the norms, values, and goals of the organization) predicted lower intentions to leave.

Fewer studies have examined the effect that employees' motivation for entering the public health workforce has on their intentions to leave. Two motives that have been studied are public service motivation, defined as "an individual's predisposition to respond to motives grounded primarily or uniquely in public institutions and organizations,"^{16(p368)} and perceptions of mission contribution, or the idea that one's daily activities are directly and positively contributing to the mission of the organization.¹³ In his study of 339 New York State civil service employees, Caillier¹³ did not find support for a relationship between perceived mission contribution and turnover intentions. He did, on the contrary, find a positive relationship between public service motivation and intentions to quit. One possible explanation offered is that individuals with high public service motivation may want to leave their agency when they do not feel that they are successful in their mission to serve society.

● Current Study

While other studies have looked at intentions to leave among other state or federal government employees in general,^{10,11,13} or among specific sectors of the public health workforce,^{17,18} this is among the first of the studies looking at predictors of intentions to leave among the state health agency workforce.^{19,20} The purpose of this study was to examine how demographics, job characteristics, workplace environment, job

satisfaction, and reasons for initially joining public health predict state health agency workers' intentions to leave the organization within the next year.

● Methods

Participants and procedure

The sample consisted of central office employees who responded to the Public Health Workforce Interests and Needs Survey (PH WINS). PH WINS, a nationally representative survey of governmental health agency workers at the state level (as well as local levels in select states), was administered to individual public health practitioners in 37 states from September to December 2014. The survey collected information on public health workforce training needs, the workplace environment, national trends, and demographics. An extensive description of the development and methodology of PH WINS appears in 2 other articles in this supplement.^{19,21} This project received a determination of "exempt" from the Chesapeake institutional review board (Pro00009674).

Measures

Items used in PH WINS were adapted from the 2009 National Assessment of Epidemiology Capacity,²² the US Office of Personnel Management Annual Employee Survey,²³ the US Office of Personnel Management Federal Employee Viewpoint Survey,²⁴ the Centers for Disease Control and Prevention Technical Assistance and Service Improvement Initiative: Project Officer Survey,²⁵ and the Public Health Foundation Public Health Workforce Survey²⁶ and are described in the following text.

Demographic variables

Respondents were asked to report their gender (male or female), race (American Indian or Alaska Native, Asian, black or African American, Native Hawaiian or other Pacific Islander, 2 or more races, or white), ethnicity (Hispanic or Latino vs. non-Hispanic or Latino) their age, educational attainment, and geographic region (state). Because of small sample size for certain racial/ethnic categories, race/ethnicity was dichotomized into white and nonwhite. Per the stratified sampling approach, geographic location is reported in analyses by adjacent paired Health and Human Services (HHS) regions.²⁷ For analyses, education was categorized by highest degree attained: associate's, bachelor's, or graduate. Age was also collapsed into 10 categories (≤ 25 , 26-30, 31-35, 36-40, 41-45, 46-50, 51-55, 56-60, 61-65, ≥ 66 years).

Job characteristics

Respondents were asked to indicate their supervisory status (nonsupervisor, team leader, supervisor, manager, or executive), their salary (within a \$10 000 range), the number of years of experience they have had in public health practice in total (in any agency, any position), and their primary program area. For analyses, salary was divided into 5 categories ($\leq \$35\,000$, \$35 000.01-\$55 000, \$55 000.01-\$75 000, \$75 000.01-\$95 000, and $> \$95\,000$) and tenure in public health was divided into 5 categories (0-5, 6-10, 11-15, 16-20, and ≥ 21 years). Primary program area was primarily based on University of Michigan's taxonomy²⁸ and was collapsed into 10 categories for analyses based on the Foundational Capabilities and Foundational Areas from the Foundational Public Health Services model.²⁹

Initial reasons for entering public health

Respondents were asked to rate the importance (on a scale of 1 = *not at all important* to 4 = *very important*) of each of 12 factors in their original decision to work in public health. Items were modified from the 2009 National Assessment of Epidemiology Capacity.²² Results of a factor analysis (principal component factor analysis) indicated 5 items ("Desire to work in public health," "Importance of public health," "Desire to make a difference," "Learning about public health in college," and "Opportunity to use my skills") that loaded onto 1 factor (factor 1) and 5 items ("Beginning salary and benefits," "Job security in public health," "Advancement opportunities," "Lack of other career options," and "Status of public health practitioners") that loaded onto a second factor (factor 2). On the basis of the results of the factor analysis, initial reasons for entering public health were collapsed into 2 categories: intrinsic motivators (factor 1) and extrinsic motivators (factor 2).

Workplace environment

Respondents were asked to rate their level of agreement (on a scale of 1 = *strongly disagree* to 5 = *strongly agree*) with 20 statements about their workplace environment, adapted from the US Office of Personnel Management Annual Employee Survey.²³ A factor analysis (principal component factor analysis) was conducted, and results indicated that 17 of the items loaded onto 3 factors (3 items split-loaded and were subsequently removed from analyses). The first factor (supervisory support) comprises 6 items (eg, "My supervisor/team leader treats me with respect" and "My supervisor and I have a good working relationship"). The second factor (organizational support) consists of 5 items (eg, "Employees have sufficient training to fully utilize technology needed for their work" and "My training needs

are assessed"). The third factor (employee engagement) comprises 6 items (eg, "I am determined to give my best effort at work every day" and "The work I do is important"). On the basis of these results, the workplace environment was measured with 3 variables corresponding to the 3 factors of leadership support, organizational support, and employee engagement.

Job satisfaction

Respondents were asked to rate their level of satisfaction (on a scale of 1 = *very dissatisfied* to 5 = *very satisfied*) with their job, their organization, their pay, and their job security.

Intentions to leave organization

Respondents were asked to indicate whether they were considering leaving their organization within the next year and, if so, why. They were presented with the following response options, modified from 2012 Federal Employee Viewpoint Survey³⁰: "No"; "Yes, to retire"; "Yes, to take another governmental job (in public health)"; "Yes, to take another governmental job (not in public health)"; "Yes, to take a nongovernmental job (in public health)"; "Yes, to take a nongovernmental job (not in public health)"; and "Yes, other." For the purposes of the regression analyses, intentions to leave was dichotomized into "Yes" (those who selected any of the yes responses other than "Yes, to retire") and "No." Those who responded "Yes, to retire" were omitted from subsequent analyses. Those who responded "Yes, to take another governmental job (in public health)" were retained for subsequent analyses. Although those who select that response will be remaining in governmental public health (and the overall governmental public health workforce), the negative consequences for an organization will be the same as it is when an employee leaves to take a nongovernmental job or a job in a field other than public health.

Statistical analysis

The sample frame for this study was limited to state health agency central office employees. The response rate, after accounting for the undeliverable e-mails and staff who had left their positions, was 46%, and the total number of observations in the sample was 10 246 central office employees. Respondents were selected on the basis of a stratified sampling approach, with 5 geographic regions (paired adjacent HHS regions) as the primary strata. A map of the HHS paired regions can be found in another article in this supplement.¹⁹ We used balanced repeated replication (BRR) as a resampling method for variance estimation because of its ability to account for the complex sampling. For a complex sample survey setting such as PH WINS, variance

estimates computed from simple random sampling are generally too low, and significance levels are overstated and biased, since they do not account for the differential weighting among sampled persons. The BRR method is popular because of the relative simplicity of replication-based estimates, especially for nonlinear estimators. In BRR, multiple replicates (also called subsamples) are drawn from a full sample according to a specific resampling scheme. It requires 2 primary sampling units per strata design, and for the national PH WINS we created 2 pseudo-primary sampling units per state. The BRR method yielded a national population estimate of 41 617 state health agency central office employees.

Univariate and bivariate analyses among variables of interest were conducted, as well as logistic regression with *intentions to leave* as the outcome variable. We also conducted the model specification error, log likelihood χ^2 , and pseudo- R^2 goodness-of-fit, as well as Hosmer and Lemeshov goodness-of-fit tests. The model specification error, log likelihood χ^2 , and Hosmer and Lemeshov goodness-of-fit tests confirm whether appropriate variables are featured in the regression model and whether the overall model is statistically significant and meaningful. Tolerance and variance inflation factor (VIF) are common indicators of degree of collinearity. For any given variable, tolerance equals 1 minus the R^2 and VIF is 1/tolerance. Typically, to avert concerns of a high degree of collinearity, VIF values lower than 10 and tolerance higher than 0.1 are desired. These diagnostic tests confirmed that the predictors chosen in the logistic regression model were meaningful, and the overall model fit the data well. Furthermore, the VIF for the independent variables in the model ranged between 1.06 and 3.19, the mean VIF was 1.67, and all tolerance values were higher than 0.1. These outcomes ensured that the regression model did not suffer from multicollinearity. All analyses were conducted using Stata (version 13.1; StataCorp LP, College Station, Texas).

Results

Demographic characteristics of the entire PH WINS sample of state health agency employees at central offices are displayed elsewhere in this supplement.¹⁹ Overall, 26% of the sample respondents are considering leaving their job within the next year: 5% to retire (removed from all subsequent analyses); 5% to take another governmental job in public health; 4% to take another governmental job (not in public health); 2% to take a job in nongovernmental job in public health; 2% to take a nongovernmental job (not in public health); and 8% for another reason.

Table 1 presents the proportion of respondents who report considering leaving their job within the next year

TABLE 1 ● Proportion of Intentions to Leave by Demographic and Job Characteristics

Demographic/Job Characteristic	%	Low (CI 95%)	High (CI 95%)	Demographic/Job Characteristic	%	Low (CI 95%)	High (CI 95%)
Supervisory status				Degree earned			
Nonsupervisor	23.6	22.4	24.7	Associate's	19.7	17.3	22.1
Team leader	24.9	21.7	28.1	Bachelor's	21.8	20.1	23.5
Supervisor	18.7	16.2	21.2	Graduate	23.6	22.3	24.9
Manager	17.7	14.7	20.7	Tenure in public health			
Executive	13.3	9.0	17.6	0-5 y	26.5	23.9	29.2
Gender				6-10 y	26.7	24.1	29.2
Male	21.4	19.1	23.8	11-15 y	21.2	19.0	23.4
Female	21.9	21.1	22.8	16-20 y	21.4	18.3	24.5
Age				≥21 y	13.4	10.7	16.1
≤25 y	26.1	13.0	39.3	Pairwise region			
26-30 y	33.8	28.6	39.0	New England and Atlantic (HHS regions 1 and 2)	16.6	14.4	18.9
31-35 y	31.0	27.2	34.8	Mid-Atlantic and Great Lakes (HHS regions 3 and 5)	20.3	19.1	21.6
36-40 y	28.1	24.4	31.8	South (HHS regions 4 and 6)	24.0	22.2	25.7
41-45 y	25.0	20.5	29.4	Mountain/Midwest (HHS regions 7 and 8)	19.1	17.9	20.4
46-50 y	19.9	17.1	22.7	West (HHS regions 9 and 10)	26.2	23.8	28.7
51-55 y	17.4	14.6	20.2	Program areas			
56-60 y	16.7	13.4	20.0	Chronic disease and injury	24.1	17.8	30.4
61-65 y	11.8	9.0	14.7	Communicable disease	24.0	19.6	28.5
≥66 y	14.0	8.8	19.3	Environmental health	18.7	15.2	22.2
Race/ethnicity				Maternal and child health	24.2	20.0	28.5
Minorities	26.1	23.9	28.3	All hazards preparedness	25.5	19.7	31.2
White, non-Hispanic	19.9	18.3	21.5	Assessment	23.0	20.0	26.1
Salary				Communications	22.4	8.0	36.9
≤\$35 000	26.6	22.3	30.9	Organizational competencies	20.5	18.0	23.0
\$35 000.01-\$55 000	24.7	22.9	26.4	Other	22.2	20.4	24.0
\$55 000.01-\$75 000	21.3	19.5	23.2	Other health care	25.0	19.0	30.9
\$75 000.01-\$95 000	18.8	16.7	20.9				
≥\$95 000.01	10.4	7.6	13.3				

Abbreviations: CI, confidence interval; HHS, Health and Human Services.

by key demographic variables. Groups of respondents reporting especially high intentions to leave their job within the next year include those aged 25 to 40 years, racial/ethnic minorities, those earning less than \$35 000 per year, those with 0 to 10 years of experience in public health, and those in the West.

Table 2 presents the mean scores on key independent variables by intentions to leave, and the results of independent-groups *t* tests on the mean differences between those who intend to leave within the next year and those who do not. As expected, those with higher levels of satisfaction and those reporting a better workplace environment were more likely to report intending to stay at their current job within the next year. Both those reporting more intrinsic motivation for entering

public health and those reporting more extrinsic motivation for entering public health were also more likely to report intending to stay in their current job in the next year. Those who did not strongly endorse many of the intrinsic or extrinsic factors as motivating them to join public health, on the contrary, were more likely to report considering leaving. All mean differences were significant at the $P < .01$ level. Bivariate correlations between predictor variables and intentions to leave supported their inclusion in the model.

The results of the logistic regression analyses for all variables included in the model are displayed in Table 3. Analyses revealed 2 demographic factors associated with intentions to leave: race and region. Non-Hispanic white staff were significantly less likely to

TABLE 2 • Group Mean Differences on Predictor Variables Between Intentions to Leave and Intentions to Stay

	<i>M</i>	<i>SE</i>	Low (95% CI)	High (95% CI)	<i>t</i>
Job satisfaction					
Stay	4.26	0.016	4.23	4.29	42.64 ^a
Leave	3.18	0.037	3.10	3.25	
Organizational satisfaction					
Stay	3.85	0.018	3.81	3.89	35.26 ^a
Leave	2.85	0.028	2.80	2.91	
Pay satisfaction					
Stay	3.25	0.021	3.20	3.29	23.55 ^a
Leave	2.46	0.031	2.39	2.52	
Job security satisfaction					
Stay	3.98	0.014	3.95	4.01	19.04 ^a
Leave	3.53	0.034	3.46	3.60	
Supervisory support					
Stay	4.11	0.011	4.09	4.13	29.48 ^a
Leave	3.53	0.023	3.48	3.58	
Organizational support					
Stay	3.44	0.010	3.42	3.46	32.26 ^a
Leave	2.79	0.019	2.76	2.83	
Employee engagement					
Stay	4.28	0.008	4.27	4.30	29.21 ^a
Leave	3.81	0.021	3.76	3.85	
Intrinsic motivators					
Stay	17.08	0.010	17.06	17.10	3.87 ^a
Leave	17.01	0.020	16.97	17.05	
Extrinsic motivators					
Stay	16.59	0.014	16.56	16.62	3.76 ^a
Leave	16.52	0.017	16.49	16.56	

Abbreviation: CI, confidence interval.

^a $P < .01$ (2-tailed).

report intentions to leave their organization within the next year than were nonwhite individuals (odds ratio [OR] = 0.80, $P < .05$). Those in the West (HHS regions 9 and 10), on the contrary, were significantly more likely to report intentions to leave their organization within the next year (OR = 1.30, $P < .05$) than those in the New England and Atlantic regions (HHS regions 1 and 2). Gender, age, and educational attainment were not significant predictors of intentions to leave.

One characteristic (tenure in public health) was associated with intentions to leave the organization within the next year. Tenure in public health showed an inverse relationship to intentions to leave within the next year, such that a greater number of years in public health were associated with lower intentions to leave in the next year for those with 6 to 10 years (OR = 0.72, $P < .01$), 11 to 15 years (OR = 0.57, $P < .001$), and 21 or more years (OR = 0.47, $P < .01$) in public health. The only exception was for 16 to 20 years in public health, which did not show a significant association with Intentions to leave (OR = 0.75, $P = .13$). Salary, supervisory

status, and primary program area were not significant predictors of intentions to leave.

Initial reasons for joining the public health workforce were not significant predictors of intentions to leave the organization within the next year. Neither intrinsic nor extrinsic motivations for initially joining public health were associated with intentions to leave in the regression analysis.

Two of the 3 work environment variables measured were associated with intentions to leave: organizational support and employee engagement. As hypothesized, both variables were inversely associated with intentions to leave the organization in the next year (OR = 0.79, $P < .05$, for organizational support, and OR = 0.78, $P < .05$, for employee engagement). Supervisory support was not a significant predictor of intentions to leave (OR = 0.89, $P = .08$).

Finally, 3 of 4 measures of job satisfaction were associated with intentions to leave the organization within the next year: job satisfaction, organization satisfaction, and pay satisfaction. Individuals more satisfied with

TABLE 3 ● Results of Logistic Regression on Predictors of Intentions to Leave^a

Predictor Variable	Odds Ratio	SE	t	Low (95% CI)	High (95% CI)
Satisfaction					
Job satisfaction	0.60	0.04	−7.31 ^b	0.52	0.69
Organizational satisfaction	0.80	0.04	−4.48 ^b	0.72	0.88
Pay satisfaction	0.76	0.04	−5.64 ^b	0.69	0.84
Job security satisfaction	1.06	0.05	1.43	0.98	1.16
Workplace environment					
Supervisory support	0.89	0.06	−1.80	0.78	1.01
Organizational support	0.79	0.08	−2.32 ^c	0.65	0.97
Employee engagement	0.78	0.07	−2.66 ^c	0.65	0.94
Initial reasons for joining public health					
Intrinsic motivators	1.00	0.08	−0.06	0.85	1.17
Extrinsic motivators	0.89	0.08	−1.32	0.74	1.06
Gender					
Male (ref)					
Female	0.89	0.09	−1.13	0.72	1.10
Race/ethnicity					
Minorities (ref)					
White, non-Hispanic	0.80	0.08	−2.31 ^c	0.65	0.97
Education					
Associate's degree (ref)					
Bachelor's degree	1.03	0.17	0.21	0.74	1.44
Graduate degree	1.16	0.20	0.86	0.82	1.65
Salary					
≤\$35 000 (ref)					
\$35 000.01-\$55 000	1.02	0.19	0.08	0.70	1.48
\$55 000.01-\$75 000	1.00	0.20	0.00	0.66	1.51
\$75 000.01-\$95 000	1.01	0.22	0.04	0.65	1.57
≥\$95 000.01	0.69	0.19	−1.33	0.39	1.21
Supervisory status					
Nonsupervisor (ref)					
Team leader	1.29	0.17	1.99	1.00	1.68
Supervisor	1.20	0.16	1.39	0.92	1.56
Manager	1.08	0.13	0.62	0.85	1.37
Executive	1.17	0.30	0.60	0.70	1.95
Tenure in public health					
0-5 y (ref)					
6-10 y	0.72	0.08	−2.95 ^d	0.58	0.90
11-15 y	0.57	0.08	−4.13 ^a	0.43	0.75
16-20 y	0.75	0.14	−1.56	0.51	1.09
≥21 y	0.47	0.11	−3.23 ^d	0.29	0.75
Age					
≤25 y (ref)					
26-30 y	0.99	0.55	−0.02	0.32	3.04
31-35 y	0.87	0.43	−0.28	0.32	2.39
36-40 y	1.02	0.46	0.05	0.41	2.57
41-45 y	0.61	0.32	−0.93	0.21	1.77
46-50 y	0.57	0.27	−1.18	0.22	1.50
51-55 y	0.47	0.27	−1.30	0.15	1.52
56-60 y	0.45	0.22	−1.66	0.17	1.19
61-65 y	0.31	0.18	−1.96	0.09	1.04
≥66 y	0.33	0.22	−1.69	0.09	1.24

(continues)

TABLE 3 • Results of Logistic Regression on Predictors of Intentions to Leave^a (Continued)

Predictor Variable	Odds Ratio	SE	t	Low (95% CI)	High (95% CI)
Program area					
Chronic disease and injury (ref)					
Communicable disease	0.96	0.31	− 0.12	0.50	1.86
Environmental health	0.67	0.18	− 1.50	0.40	1.15
Maternal and child health	0.89	0.22	− 0.45	0.54	1.47
All hazards preparedness	1.15	0.29	0.55	0.68	1.93
Assessment	0.94	0.30	− 0.19	0.49	1.80
Communications	1.36	0.62	0.67	0.54	3.43
Organizational competencies	0.90	0.25	− 0.37	0.51	1.58
Other	0.90	0.25	− 0.40	0.51	1.56
Other health care	1.16	0.42	0.41	0.56	2.41
Pairwise region					
New England and Atlantic (HHS regions 1 and 2) (ref)					
Mid-Atlantic and Great Lakes (HHS regions 3 and 5)	1.14	0.11	1.31	0.93	1.38
South (HHS regions 4 and 6)	1.21	0.13	1.80	0.98	1.50
Mountain/Midwest (HHS regions 7 and 8)	1.05	0.09	0.64	0.89	1.24
West (HHS regions 9 and 10)	1.30	0.14	2.39 ^c	1.04	1.63

Abbreviations: CI, confidence interval; HHS, Health and Human Services.

^aThe dependent variable in this analysis is “consider leaving the agency in the next year” coded so that 0 = not considering leaving and 1 = considering leaving.

^b $P < .001$.

^c $P < .05$.

^d $P < .01$.

their job (OR = 0.60), organization (OR = 0.80), and pay (OR = 0.76) were significantly less likely to report intentions to leave within the next year than were less satisfied individuals (all P values < .001).

● Discussion

Results from this study indicate several demographic variables related to job characteristics, workplace environment, and job satisfaction to be predictors of considering leaving one's organization within the next year among state health agency workers at central offices. Racial/ethnic minorities and those in the West are more likely to be considering leaving their job in the next year, as are those with a shorter tenure in public health. Conversely, perceptions of greater organizational support and employee engagement, and higher job satisfaction, organization satisfaction, and pay satisfaction are predictive of lower intentions of leaving one's job within the next year. Reasons for initially entering the public health workforce did not predict intentions to leave.

The finding that racial/ethnic minorities are more likely to be considering leaving their jobs within the next year is not particularly surprising when considering the racial/ethnic disparities in pay that exist in the public health workforce.³¹ However, the racial/ethnic pay gap is not a complete explanation, as a gender

pay gap also exists, yet women are not significantly more likely to be considering leaving their jobs than men. Furthermore, salary was not found to be a predictor of intentions to leave. It is worthwhile to look at the culture of state health agencies, and if there are policies or practices in place that may make the work environment, and staying with their current jobs, less appealing to certain racial/ethnic minority groups. Alternatively, it is possible that the explanation for this finding is something on the complete opposite end of the spectrum. For example, it may be that racial/ethnic minorities with public health backgrounds are in higher demand and have greater opportunities for career advancement in the general public health workforce and are therefore more likely to be considering leaving their current jobs.

State health agencies and the effectiveness of the services they provide can only benefit by employing a diverse workforce that accurately reflects the diversity of the individuals they serve. Having a workforce that is representative of the composition of those served may be particularly important as racial/ethnic disparities continue to persist in chronic health diseases and conditions, communicable diseases, environmental health, and access to care, among other areas.

It is not clear from the current data why living in the West (HHS regions 9 and 10) was predictive of intentions to leave. One possibility is that it is other factors at the state or regional level not included in the

current model that are responsible for these regional differences. For example, using data from 44 states, Selden and Moynihan¹¹ found that (although this is perhaps counterintuitive) the unemployment rate was a positive predictor of intentions to leave. Unionization, internal opportunity structure, and on-site childcare were all negative predictors of intentions to leave.¹¹ Future research should explore the extent to which these factors may contribute to regional differences in intentions to leave among state health agency workers.

Consistent with previous research,^{7,12} longer tenure at one's agency was found to be associated with lower intentions to leave one's job. The only exception to this was employees who had been in public health for 16 to 20 years. It is not clear why only this time period would not be a significant predictor of intentions to leave. Future research may replicate this approach with other professions or other individuals in public health to see whether similar findings emerge. It is interesting to note that it was tenure, and not age, that was associated with leave intentions. This supports Moynihan and Landuyt's⁸ finding that the sense of attachment, or loyalty, that employees feel toward their organization or coworkers is a significant predictor of retention.

Also consistent with previous research,^{9,15} select elements of the work environment, employee engagement, and organizational support were predictive of intentions to leave. The finding that perceptions of supervisory support do not predict intentions to leave, although also consistent with the literature, seems a bit more surprising. It would seem logical that the person with whom one works most closely would have a substantial effect on one's satisfaction and intentions to leave. It is possible, however, that others in the organization, such as a mentor who is not one's supervisor or other colleagues or a second-level supervisor, may have a stronger influence on satisfaction and intentions to leave. Future research should seek to better understand why supervisory support does not predict intentions to leave and also determine whether this is something unique to state health agency employees or something that occurs among public health professionals in general.

Results from this study replicate many others in finding that high job satisfaction is associated with higher retention. While job satisfaction, organization satisfaction, and pay satisfaction were all predictors, job security satisfaction did not predict intentions to leave. It appears that perceptions of job security do not play a large role when state health agency employees are considering whether to leave their current job. The higher job stability among government workers may at least partially account for this.^{32,33} It is worth noting that it was pay satisfaction, rather than actual salary, that predicted intentions to leave. This suggests that it is not a

certain pay grade or dollar amount that predicts satisfaction and intentions to leave, but, rather, how one's reality aligns with one's expectations and/or desires. It will be important for human resources (HR) managers to assess how well aligned potential and (current) employees' salary expectations are with their actual salaries.

State health agencies are well positioned to use best practices in HR management to address issues raised on the basis of the results from this study. For example, an analysis of corporations that made *Fortune* magazine's list of 100 best places to work found that these workplaces had cultures emphasizing the value of employees, offered flexible scheduling, developed innovative staffing practices, provided training programs that demonstrate investment in employee development, utilized effective performance management systems aligned with company objectives, and offered fair compensation, linking job performance to pay.³⁴ Other practices state health agencies can use to improve retention are ensuring a good fit between employee and organization³⁵ and improving employees' links to their coworkers and their sense of community.³⁶

Limitations

There are several limitations of note to this study. Throughout the study administration period, some respondents expressed concerns about privacy. Despite assurances of anonymity, these concerns may have led to an underreporting of intentions to leave. If this is the case, it will be important to determine whether there is a significant number of individuals who are considering leaving, but did not report it due to privacy concerns, and to identify the characteristics of this group. For instance, if certain groups of respondents (eg, younger individuals or racial/ethnic minorities) were more likely to have privacy concerns, this could have especially significant implications for the results of this study. Those with privacy concerns could pose particular difficulties from an HR perspective, as there may be fewer overt indicators that these individuals are planning to leave, resulting in HR having less time to plan for acquiring new staff.

In addition, while this study is able to test for predictors of considering leaving one's job within the next year, we do not know how many of these employees actually quit, and the characteristics that distinguish those who are considering quitting from those who actually do leave their jobs. Although there are clearly limitations posed by the use of intentions to leave as a proxy for sorts for actual leaving, studies do indicate that, in general, intention to perform a behavior is the strongest predictor of the performance of that behavior³⁷ and that intentions to quit are the best

predictor of employees actually quitting their jobs.⁹ Data from the US Bureau of Labor Statistics also suggest that the finding that 26% of state health agency employees are considering leaving their jobs is fairly comparable with actual quit rates across the government sector.³⁸ Understanding more about employees who are considering quitting, however, may be even more valuable for state health agencies in that they still have the ability to implement interventions with those considering leaving their positions.

Conclusions

This study sought to examine a variety of predictors of intentions to leave one's job among state health agency workers. Results suggest that several demographic, job characteristic, work environment, and job satisfaction variables are predictive of intentions to leave. State health agency HR departments should focus on how to improve employee engagement and perceptions of organizational support to increase job satisfaction. The longer an employee is with an agency, the less likely he or she is to consider leaving. State health agencies should look at both organizational policies and informal practices that may encourage or discourage certain individuals from staying in their positions.

Despite the many challenges that state health agencies face with decreasing budgets and an increasingly aging workforce, there are many talented individuals dedicated to improving health and well-being through their service at state public health agencies. By recognizing employees' achievements, encouraging professional development and training, fostering a positive work environment, and participating in equitable hiring and compensation practices, state health agencies have the potential to maintain a skilled workforce of adequate size and attract a dynamic, diverse state public health workforce of the future.

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