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Perceptions of Public Health Workers about the Effects of New Public Health Trends on Their Daily Tasks

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ABSTRACT

Background

Public health employees face increasing challenges due to emerging trends such as cross-jurisdictional sharing, quality improvement (QI), integration of public and primary care, evidence-based public health practices (EBPH), Health in All Policies (HiAP), and multi-sectoral collaboration. These trends impact their day-to-day work, but little is known about how organizational climate and culture influence employees' perceptions of these emerging trends. This study aims to assess Perceptions of Public Health Workers about the Effects of New Public Health Trends on Their Daily Tasks

Methods

This study utilized data from a nationwide survey conducted by a public health foundation to assess the interests, needs, and attitudes of public health workers. The survey gathered responses from 47,756 public health employees across state, local, and other public health agencies, with a 48% response rate. Respondents were asked to rate the perceived impact of six emerging public health trends on their daily work, using a four-point Likert scale. Workplace environment and individual characteristics such as supervisory status, gender, ethnicity, race, and experience were examined for their associations with perceived impact.

Results

Most respondents reported a marginal impact from the six emerging trends, with significant variation in perceived impact based on workplace environment and supervisory status. A positive workplace environment was associated with higher odds of perceiving a significant impact across all trends. Supervisors and executives

were more likely to perceive greater impacts compared to non-supervisors. Minority workers, particularly Black employees, reported higher odds of perceiving significant impacts across multiple trends.

Conclusion

The findings highlight the importance of workplace environment and leadership in shaping public health employees' perceptions of emerging trends. A supportive and positive organizational culture can enhance the recognition and integration of emerging public health practices, especially among supervisors and minority employees. These insights suggest that strengthening organizational climate and leadership engagement can improve workforce effectiveness in responding to evolving public health challenges.

Introduction

The term "public health" conjures various images for different people. For some, it represents a broad network of health professionals tasked with addressing a community's health concerns. Others view it as a workforce equipped with the knowledge, research, and interventions to tackle a wide range of health-related issues and challenges [1]. However, for most of the general public, public health is often associated with government agencies providing medical care to underserved or indigent populations. As the field of public health continuously evolves, practitioners face numerous challenges that place strain on their daily activities, such as natural disasters, new healthcare approaches, environmental crises, and an aging population. These challenges make it difficult for public health workers to stay up- to-date on the essential knowledge and skills required to effectively deliver core public health services to their communities [2,3].

Over the past decade, the number of public health workers has been declining, largely due to high turnover rates, reduced funding, non-competitive wages, and a significant portion of the workforce nearing retirement [4,5,6,7,8,9]. Research in organizational culture and job satisfaction indicates that many issues tied to high turnover and early retirement can be mitigated when workers feel supported by leadership, value their work, and believe in the importance of their contributions [10,11,12]. In many public health systems, authority is divided across local, state, and federal levels, with no single entity having complete control. At the federal level, Congress allocates resources to federal agencies, while state governments manage commerce, allocate resources to local entities, and enact public health laws. Local governments control health departments and local health ordinances [13]. As a cornerstone of public health infrastructure [3], the public health workforce takes pride in its diversity, drawing from various academic, experiential, and professional backgrounds, united by shared ethical principles and a common mission [8,14,15]. While many public health workers receive specialized training in areas such as environmental health, nursing, administration, health education, or epidemiology [14], most lack training in other critical areas such as informatics, strategic planning, cultural competency, policy development, advocacy, community-based research, and organizational effectiveness [3,16]. This gap in skills and knowledge can hinder their ability to incorporate emerging public health trends into everyday practice.

The evolution of public health practice in the United States has been shaped by changing priorities, threats, and service models. Before the 1850s, the focus was on battling recurring epidemics, followed by efforts in the 1950s to address gaps in medical care. Since 2000, attention has shifted to preparing for and responding to community health threats, along with providing population health services [1]. In 2015, Erwin and Brownson identified key emerging trends in public health, including cross-jurisdictional sharing, fostering a culture of quality improvement, adopting Health in All Policies (HiAP), and emphasizing Evidence-Based Public Health (EBPH) practice [17]. The advent of Public Health 3.0 in 2016 signified a shift towards public health practitioners becoming the chief health strategists in their communities to effectively improve population health [18]. For practitioners, staying informed about these emerging trends and integrating them into daily activities can improve efficiency and enhance proficiency in delivering essential public health services to communities [19,20,21,22,23,24,25,26,27]. As history has demonstrated, these emerging trends are crucial for shaping future public health practices, including program and policy implementation and success [14].

This research aims to answer three key questions: (1) To what extent do public health employees perceive the impact of six identified emerging public health issues on their daily work? (2) Is the work environment of public health employees linked to variations in perceived impact on their day-to-day responsibilities? (3) What individual characteristics of public health workers are associated with variations in perceived impact levels? By exploring the factors that influence these perceptions, this study will fill significant gaps in existing literature and offer insights into the investments needed in workforce development and the workplace environment. These findings will help ensure that public health workers feel connected to the broader goals of their organizations [28].

Methods

This study employed data from a survey designed to assess the interests and needs of the public health workforce, conducted by a national association and a public health foundation. The survey aimed to support the development of future workforce initiatives, provide baseline metrics for workforce development, and examine the overall attitudes, morale, and environment within the public health sector [29,30,31]. The sampling strategy for the survey consisted of two distinct sampling frames: one focused on state-level workers and the other on local-level workers. This approach was designed to account for variables such as the population size, governance, and geographic characteristics of the jurisdictions surveyed [30,31]. The local sampling frame was restricted to medium and large local health departments, excluding those with fewer than 25,000 residents or fewer than 25 employees [30]. Participants were invited to complete the survey via email, with assistance from designated workforce coordinators and IT contacts to ensure up-to-date staff lists and to minimize technical issues [30]. A total of 47,756 government public health workers participated in the survey, yielding a 48% response rate, with 35% of state-level respondents and 59% of local-level respondents completing the survey [30,31]. The analysis used weighted data to adjust for nonresponse and subsampling, as well as to correct for any potential biases related to staffing levels [30]. More details about the survey's sampling methodology can be found in the work of Leider et al. [30].

Measures

Six dependent variables were used to evaluate the perceived influence of emerging public health topics on the daily work of public health workers. Respondents were asked to rate how much each of the following areas impacted their work: (1) cross-jurisdictional sharing of services, (2) cultivating a culture of quality improvement (QI), (3) integration of public and primary care, (4) use of evidence-based public health practices (EBPH), (5) implementing Health in All Policies (HiAP), and (6) fostering multi-sectoral collaboration. Participants responded using a four-point Likert scale, ranging from "Nothing at all" to "Impact great deal." For analysis purposes, responses were recoded into three categories: "No impact" (coded as 0 for "Nothing at all"), "Marginal impact" (coded as 1 for "Not too much" and "Impact fair amount"), and "Significant impact" (coded as 2 for "Impact great deal").

The primary independent variable, workplace environment, was quantified by aggregating responses to 17 statements regarding job satisfaction and workplace conditions. Examples of statements included "The work I do is important" and "Employees learn from one another while performing their tasks." Responses to these statements were recorded on a five-point Likert scale, ranging from "Strongly disagree" to "Strongly agree," generating a total composite score between 17 and 85.

Additional independent variables controlled for in the regression models included supervisory status (non-supervisor, supervisor, manager, executive), gender (male, female, non-binary/other), , age (≤30, 31–40, 41–50, 51–60, ≥61), employer type (local, state, federal government, or non-governmental), years of experience in public health (0–5, 6–10, 11–15, 16–20, 21+ years), and whether the respondent's degree was in public health or another field.

Analytical Methods

Descriptive statistics were calculated for all variables, both dependent and independent. Given that the proportional odds assumption for ordered logistic regression was not satisfied, multinomial logistic regression was applied to model six separate outcomes, each representing one of the emerging public health issues. The models assumed multivariate normal distributions and normally distributed error terms. All statistical analyses were performed using SAS software version 9.4 [33]. The study received ethical approval, and it was determined that the study met the criteria for exemption from full board review.

Results

The majority of participants from state and local health departments, as well as other agencies, identified as supervisors, comprising 72.26% of the workforce (see Table 1). A large proportion (62%) of respondents were employed by state governments, with 78.36% identifying as female. The largest group of workers had 5 or fewer years of experience (30.45%), followed by those with over 21 years of tenure (21.33%). Only 13.81% of respondents held a degree in public health. The mean score for the workplace environment was 66.02, within a possible range of 17 to 85.

When assessing the impact of six emerging trends on their daily work, most public health workers reported a marginal effect across all trends. These trends included: cross-jurisdictional sharing of services (68.54%), fostering a culture of quality improvement (QI) (63.53%), integration of public health and primary care (63.51%), evidence-based public health (EBPH) (58.56%), Health in All Policies (HiAP) (66.85%), and multi-sectoral collaboration (66.88%). A notable proportion of workers, however, indicated that they felt significantly impacted by certain trends: 18.18% for cross-jurisdictional sharing, 29.50% for QI, 21.02% for integration of public and primary care, 29.63% for EBPH, 17.23% for HiAP, and 22.61% for multi-sectoral collaboration.

Univariate regression analyses for each trend demonstrated that workplace environment was significantly positively associated with the perception of the impact of all six trends. The odds of perceiving a significant impact (vs. no impact) on daily work increased as the workplace environment score rose. Specifically, the odds ratios (OR) for significant impacts were as follows: cross-jurisdictional sharing (OR = 1.02, $p = 0.01$), QI (OR = 1.04, $p < 0.001$), integration of public health and primary care (OR = 1.02, $p < 0.001$), EBPH (OR = 1.03, $p < 0.001$), HiAP (OR =

1.03, $p < 0.001$), and multi-sectoral collaboration (OR = 1.02, $p = 0.01$).

In Table 2, the results of multinomial logistic regression models for each of the six emerging trends are presented, distinguishing between significant and marginal impact (compared to no impact). The analyses revealed that both workplace environment and supervisory status were positively associated with the perceived impact levels for all six trends. For example, the odds of perceiving a significant impact from cross-jurisdictional sharing (vs. no impact) were higher with an increase in workplace environment score (adjusted odds ratio [AOR] = 1.02, $p = 0.01$). Similar patterns were observed for the other trends: QI (AOR = 1.04, $p < 0.001$), public health and primary care integration (AOR = 1.03, $p < 0.001$), EBPH (AOR = 1.04, $p < 0.001$), HiAP (AOR = 1.03, $p < 0.001$), and multi-sectoral collaboration (AOR = 1.02, $p < 0.001$). Executives in public health agencies (compared to non-supervisors) had significantly higher odds of perceiving the trends as having a significant impact on their daily work, including cross-jurisdictional sharing (AOR

= 1.97, $p = 0.03$), QI (AOR = 14.66, $p < 0.001$), public health and primary care integration (AOR = 1.60, $p = 0.01$), EBPH (AOR = 1.90, $p = 0.04$), HiAP (AOR =

, $p < 0.001$), and multi-sectoral collaboration (AOR = 3.45, $p < 0.001$). Managers and supervisors were also more likely to perceive a significant impact compared to non-supervisors.

For minority public health workers (compared to white public health workers), the odds of perceiving significant impacts were higher for at least five of the six trends. Black workers, in particular, had increased odds across all trends, with the following odds ratios (AOR): cross-jurisdictional sharing (AOR = 3.17, $p < 0.001$), QI (AOR

= 1.85, $p < 0.001$), integration of public health and primary care (AOR = 2.80, $p < 0.001$), EBPH (AOR = 2.15, $p = 0.01$), HiAP (AOR = 3.37, $p < 0.001$), and multi-

sectoral collaboration (AOR = 2.41, $p < 0.001$). Female workers were more likely than male workers to report significant impacts from QI (AOR = 1.44, $p < 0.001$), integration of public health and primary care (AOR = 1.58, $p = 0.01$), and HiAP (AOR = 1.67, $p < 0.001$).

Public health workers with a degree in public health had significantly increased odds of perceiving significant impacts compared to those without such a degree, particularly in areas such as cross-jurisdictional sharing (AOR = 1.83, $p < 0.001$), QI (AOR = 1.69, $p < 0.001$), EBPH (AOR = 2.83, $p < 0.001$), and multi-sectoral collaboration (AOR = 3.44, $p < 0.001$). Differences in employer type also influenced perceptions of impact. Workers employed by non-governmental organizations (vs. state government) were less likely to report significant impacts from EBPH (AOR = 0.58, $p = 0.03$). Additionally, public health workers aged 61 years or older, compared to those under 30, had significantly lower odds of perceiving significant impacts for cross-jurisdictional sharing (AOR = 0.47, $p = 0.02$), integration of public health and primary care (AOR = 0.53, $p = 0.01$), EBPH (AOR = 0.40, $p = 0.01$), and multi-sectoral collaboration (AOR = 0.41, $p = 0.03$). Workers aged 41 to 50 also had lower odds of perceiving significant impacts from EBPH.

Table 1. Public health workforce descriptive statistics, 2017 Public Health Workforce Interests and Needs Survey (PH WINS).

	N (Un-Weighted)	Percent (Weighted)
Total Number of Respondents	47,756	
Supervisory Status:		
Supervisor	31,750	72.26
Manager	7017	16.39
Executive	3721	8.92
Non-supervisor	1055	2.44
Gender:		
Male	9270	21.06
Female	33,547	78.36
Age:		
(≤30 years)	4575	11.04
(31–40 years)	8899	22.44
(41–50 years)	10,495	24.32
(51–60 years)	12,450	28.83
(≥61 years)	5785	13.37
Employer:		
Local government	10,886	33.72
State government	31,388	62.10
Federal government	515	2.09
Non-governmental	490	2.10
Tenure in Public Health		

Practice:		
0–5 years	13,315	30.45
6–10 years	7458	18.41
11–15 years	6217	15.59
16–20 years	5258	14.22
21 years or above	9341	21.33
Whether the employee degree is in Public Health:		
Non-Public Health degree	37,370	86.19
Public Health degree	6329	13.81
	N	Mean (variance)
Workplace Environment	43,575	66.02 (0.17)

Abbreviations: N, number of observations.

Table 2. Multinomial logistic regression of the perceived impact of the emerging public health trends on the day-to-day work of state and local public health workforce.

Public	**Cross-Jurisdictional Sharing**				**Fostering a Culture of QI**				**PI**
	Significant Impact vs. NoImpact		**Marginal Impact vs. No Impact**		**Significant Impact vs. NoImpact**		**Marginal Impact vs. No Impact**		**SII**
	AOR	***p-Value***	**AOR**	***p-Value***	**AOR**	***p-Value***	**AOR**	***p-Value***	**A**
Work Environment	**1.02**	*0.01*	**1.01**	*<0.001*	**1.04**	*<0.001*	**1.02**	*<0.001*	**1**
Supervisory Status:									
Supervisor	0.70	*0.21*	0.75	*0.42*	**1.68**	*<0.001*	**1.50**	*<0.001*	0
Manager	**1.47**	*0.04*	1.09	*0.53*	**4.98**	*<0.001*	**2.53**	*<0.001*	1
Executive	**1.97**	*0.03*	1.58	*0.06*	**14.66**	*<0.001*	**5.50**	*<0.001*	**1**
Non-supervisor	--		--		--		--		--
Gender:									
Female	0.70	*0.97*	0.91	*0.55*	**1.44**	*<0.001*	**1.23**	*0.01*	**1**
Non-binary/Other	0.70	*0.48*	0.59	*0.21*	1.69	*0.25*	1.83	*0.08*	1
Male	--		--		--		--		--
White	--		--		--		--		--
Age:									
(31–40 years)	1.22	*0.13*	0.96	*0.66*	1.13	*0.40*	0.93	*0.70*	0
(41–50 years)	1.02	*0.91*	0.77	*0.09*	1.26	*0.08*	0.79	*0.21*	1
(51–60 years)	0.88	*0.39*	**0.67**	*0.01*	1.11	*0.37*	0.73	*0.12*	0
(> 61 years)	**0.47**	*0.02*	0.43	*0.09*	1.06	*0.73*	0.78	*0.20*	**0**
(< 30 years)	--		--		--		--		--
Employer:									
Local government	1.14	*0.30*	1.08	*0.37*	0.99	*0.88*	1.08	*0.35*	1
Federal government	**3.00**	*0.01*	**3.50**	*0.04*	1.38	*0.57*	2.25	*0.34*	2
Non-governmental	2.90	*0.40*	0.73	*0.18*	1.09	*0.93*	0.52	*0.08*	4
State government	--		--		--		--		-
Tenure in Public Health Practice:									
6–10 years	1.27	*0.07*	1.31	*0.09*	**1.22**	*0.01*	1.23	*0.15*	1
11–15 years	**1.53**	*0.01*	**1.46**	*0.02*	1.07	*0.53*	1.15	*0.28*	1
16–20 years	0.87	*0.63*	0.99	*0.84*	**1.40**	*0.01*	**1.55**	*0.01*	1

21 years or above	**1.73**	*0.01*	**1.71**	*0.02*	1.23	*0.06*	**1.34**	*0.01*	**1**
0–5 years	--		--		--		--		-
Whether the employee's degree isin Public Health:									
Public Health degree	**1.83**	*<0.001*	**1.23**	*0.04*	**1.69**	*<0.001*	**1.37**	*0.01*	0
Non-Public Health degree	--		--		--		--		-

Abbreviations: QI, quality improvement; EBPH, evidence-based public health; HiAP, Health in All Policies; AOR, adjusted odds ratio; CI, confidence intervals. Note: Bold AORs indicates statistically significant differences compared with the reference category at $p < 0.05$.

Discussion

As public health practices continue to evolve in response to emerging challenges and new demands, the role of public health workers is undergoing significant changes. Many practitioners have had to adapt their daily work practices to address obstacles linked to a workforce that is increasingly diverse, with many employees lacking formal public health education [1,34,35,36,37]. The findings of this study reveal that individual characteristics of public health workers, such as race, ethnicity, education level, and supervisory status, significantly correlate with their perception of the impact of various emerging public health issues on their day-to-day activities. The relationship between emerging issues and the perceived support within the workplace aligns with previous studies, though our research specifically focused on government public health settings [38,39]. It was observed that the organizational climate and culture within these agencies significantly influence the work environment, which, in turn, shapes the way employees engage with their work and perceive its relevance. This effect was most prominent with evidence-based public health (EBPH) and the promotion of a culture of quality improvement (QI), areas that have long been recognized as essential to improving health outcomes, workforce development, and organizational culture [40,41,42].

The composition of the public health workforce was found to be predominantly females in supervisory roles, with many lacking formal public health training. This trend is consistent with prior research on the demographics of public health professionals [43]. However, it was observed that Black public health workers reported a higher perceived impact of all emerging public health trends compared to their white counterparts, and workers from other racial backgrounds identified five out of the six trends as significantly affecting their daily tasks. Similarly, public health workers reported significant impacts from four of the six trends, indicating that these groups may experience unique challenges in adapting to public health shifts. These findings underscore the need for greater diversity within the public health workforce, including within educational programs.

Additionally, the study highlights the importance of formal public health education. Those with a public health degree were more likely to report that emerging trends had a significant impact on their daily work, particularly regarding four out of six identified trends. This suggests that formal training equips workers with the knowledge and skills necessary to stay current with evolving public health challenges, such as EBPH, cross-jurisdictional collaboration, fostering QI, and working with community partners. Moreover, the influence of supervisory status and work tenure on the perception of these trends suggests that experience, whether through formal education or on-the-job learning, plays a key role in understanding and responding to these emerging issues.

Future research could explore the relationship between the perceived impact of emerging trends and public health workforce performance and efficiency. Investigating how individual characteristics of workers influence organizational capacity could provide valuable insights into how public health agencies can enhance their ability to deliver essential services and improve population health. Furthermore, exploring the role of formal public health education in building workforce capacity at both individual and organizational levels is an important area for future study.

Limitations of the Study

This study has several limitations. The data relied on self-reported, secondary information, which may introduce bias. The exclusion of smaller health departments from the sample may limit the generalizability of the findings. Another limitation is that over 95% of the participants held supervisory roles, which could suggest that the survey distribution method may have skewed responses toward those in managerial positions, potentially underrepresenting field staff and non-supervisory workers. Additionally, the cross-sectional nature of the study design means that only associations, not causal relationships, can be drawn.

Conclusions

This study examines key trends in modern public health practice, focusing on how emerging issues such as quality improvement, evidence-based practices, cross-jurisdictional sharing, and health in all policies influence the daily work of public health professionals. The study found that significant variations in the perceived impact of these trends exist based on worker characteristics like education, race, ethnicity, gender, and supervisory status. These insights can guide policy efforts and capacity-building initiatives aimed at enhancing the professional development of the public health workforce. To ensure the continued effectiveness of the public health sector, there is a need for increased investment in workforce development, supportive work environments, and ongoing evaluation of how emerging trends affect public health practices.

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