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Competency Status and Desire for Training in Core Public Health Domains: An Analysis by Job Level

James K. Cunningham, PhD

ABSTRACT

Context: Although trainings on core public health domains are widely available, and experts concur that competency in multiple core domains (analysis/assessment, leadership, communication, etc) is desirable for public health professionals, many still lack such competency. Employee job level could be a factor, as organizational research indicates that broad skill sets often hold importance mainly for higher-level employees.

Objective: This study examines whether the association between competency and desire for training in core public health domains depends on job level.

Design: A training preferences and domain competency survey of public health professionals: nonmanagers (n = 790), middle managers (n = 332), and upper managers (n = 69). The association of competency in domains overall with number of related training topics desired was examined using median tests. The association of competency in individual domains with desire for specific related training topics was assessed using logistic regressions adjusted for education.

Settings: Public health departments in the US Southwest (2013-2019).

Main Outcome Measures: Competence in core domains: Financial Planning and Management, Analysis/Assessment, Communication, Cultural Competency, Leadership/Systems Thinking, Policy Development/Program Planning, Public Health Sciences, and Community Dimensions of Practice. Desire for training (yes/no) in 25 domain-related topics.

Results: Upper managers lacking overall competence in core domains desired more training topics than their competent counterparts (median of 12 topics vs 5, $P = .02$). In contrast, nonmanagers lacking overall competence desired fewer topics than their competent counterparts (4 vs 6, $P < .001$). Upper managers with lesser competency in an individual domain often had significantly higher odds of desiring training related to the domain, but the opposite was found for nonmanagers. Among middle managers, little association between competency and training desire was found.

Conclusions: Ideally, lesser competence in core domains would be accompanied by greater desire for ameliorative training, but only upper managers exhibited this pattern. Efforts are needed to better connect domain competency status and training desire among nonmanagers and middle managers.

KEY WORDS: competency, core public health domains, job level, public health departments, training

Author Affiliation: *Department of Family and Community Medicine, College of Medicine, Health Promotion Sciences, Mel and Enid Zuckerman College of Public Health, Western Region Public Health Training Center, University of Arizona, Tucson, Arizona.*

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Correspondence: *James K. Cunningham, PhD, Department of Family and Community Medicine, The University of Arizona, 655 N. Alvernon Way, Suite 228, Tucson, AZ 85711 (jkcunnin@email.arizona.edu).*

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Colleges and departments of public health, public health foundations, and expert practitioners have long agreed that competence in multiple core public health domains (analysis/assessment, leadership, cultural competency, etc) is desirable for public health professionals.[1-6] Nevertheless, many public health professionals lack such competence.[6-8] For example in a national survey reported by Bogaert et al,[9] 55%, 49%, and 31% of public health professionals, respectively, had competency gaps in financial management, systems/strategic thinking, and cultural competency. It appears, consequently, that skill enhancement for many public health workers is needed.[10] In light of this, large numbers of public health training courses have been developed and made available, often online for free.[6,11-13] It might be expected that interest in them would be keen among professionals who lack competence in core domains.

A consideration here, however, is that employees lower in an organization's hierarchy tend to specialize, while broader skill sets often hold importance primarily for higher-level employees.[14-19] In the case of public health professionals, the majority are specialists (data analysts, epidemiologists, nurses, outreach professionals, safety inspectors, vector control officers, etc) located in lower rungs of their organizations.[6,10] It seems possible, consequently, that many of these professionals might have limited interest in trainings designed to help support skills in a range of public health domains.

Few if any studies examining this possibility have been published to date. That said, there has been some related research in the field of massive open online courses (MOOCs). MOOCs are offered at no charge primarily by colleges and universities and number in the thousands. They have been advanced as a means to increase access to higher education for underserved populations and thus help address the relative deficit in education these populations face.[20] Studies, however, indicate that MOOCs tend to be taken by persons who are already educationally advantaged—not the students MOOCs were most intended to help.[21-23] Granting that most MOOCs do not focus on public health topics (perhaps limiting generalizability to public health trainings), these studies nevertheless do suggest that when trainings are being developed and made available, it is important to assess the target audience's interest. In the case of public health trainings, that audience would include professionals with competency gaps in core public health domains.

Using survey data from professionals at public health departments in the US Southwest, this study examined the professionals' self-assessments of competency in core public health domains. It then considered whether the assessments were associated with the professionals' desire for training related to the domains, including whether the association depended on job level within a public health department.

Methods

The Western Region Public Health Training Center (WRPHTC), as part of its mission, conducts employee needs assessment surveys for public health departments. During 2013-2019, the WRPHTC administered online surveys to employees at 13 public health departments and to executive-level public health department employees who were members of a public health officers association (all located in the US Southwest). Respondent data went to the WRPHTC. The surveyed organizations provided estimates rather than exact counts of the numbers of their employees/members, partly due to transitions (eg, persons leaving and new hires). An approximate rather than exact response rate was consequently constructed. The number of employees at the 13 public health departments surveyed was approximately as follows: 2 had fewer than 25 employees, 3 had 25 to 49 employees, 4 had 50 to 99 employees, 2 had 100 to 499 employees, and 2 had 500+ employees.

Using definitions based in part on the Council on Linkages Between Academia and Public Health Practice's (COL)[4] tier 1, 2, and 3 level job descriptions, respondents self-identified their job level as a public health professional nonmanager, middle manager, or upper manager (see Supplemental Table 1, available at http://links.lww.com/JPHMP/A909). Respondents also indicated their highest level of education (high school or less, associate degree, bachelor's, master's, and doctorate). To help support respondent anonymity, additional demographic information was generally not obtained.

Competency in core public health domains was assessed using a slightly modified version of COL's competency assessment instruments (70+ questionnaire items), which are tailored to nonmanagers, middle managers, and upper managers.[4] Modifications were made to address issues such as double-barreled items. Eight public health domains were assessed: Financial Planning and Management, Analysis/Assessment, Communication, Cultural Competency, Leadership/Systems Thinking, Policy Development/Program Planning, Public Health Sciences, and Community Dimensions of Practice. The number of questionnaire items per domain ranged from 5 to 15. Each item was self-rated using a 5-point Likert-type scale. The first 2 surveys conducted used the following wording for the scale: 1 = novice, 2 = between novice and competent, 3 = competent, 4 = between competent and expert, and 5 = expert. For the remaining surveys, the scale was simplified to 1 = none/very little, 2 = beginner/aware, 3 = competent, 4 = proficient, and 5 = expert.

A respondent was categorized as competent or not competent in a domain if their mean score on items for the domain was 3 or more or less than 3, respectively. If their average score across the 8 domains (8 mean domain scores divided by 8) was 3 or more or less than 3, a respondent was categorized as competent or not competent overall, respectively.

Twenty-five training topics related to core public health domains were presented in the survey: (1) Advanced Program Evaluation, (2) Budgeting, (3) Community Assessment, (4) Community Mobilization and Engagement, (5) Cultural Responsiveness, (6) Customer Service, (7) Effective Project Management, (8) Financial Decision Making, (9) Health Data for Program Quality, (10) Improving Program

Outcomes/Measures, (11) Leadership Skills, (12) Managing in an Ever-Changing Environment, (13) Planning Public Health Programs, (14) Program Evaluation, (15) Public Health 101, (16) Public Health Preparedness, (17) Quality Improvement, (18) Social Media, (19) Social/Economic Determinants of Health, (20) Summarizing Information Effectively, (21) Systems Thinking, (22) Using Evidence-Based Programs/Policies, (23) Web Data, (24) Working With Policy Makers, and (25) Working With Stakeholders. These topics relate to the 8 core public health domains as follows: Financial Planning and Management (training topics 2, 7, and 8), Analysis/Assessment (3, 9, and 23), Communication (6, 18, and 20), Cultural Competency (5), Leadership/Systems Thinking (11, 12, 21, and 24), Policy Development/Program Planning (1, 10, 13, 14, 16, 17, 19, and 22), Public Health Sciences (15), and Community Dimensions of Practice (4 and 25). Employees were instructed to check each of the 25 training topics they "would like to have."

To help assess the reliability (internal consistency) of the domain measures (*note*: 8 domains within each job level—nonmanagers, middle managers, and upper managers), 24 Cronbach α values were constructed. Median tests were used to assess the association of competency in the 8 domains overall (yes/no) with the total number of training topics desired. The association of competency (yes/no) in individual domains (eg, Financial Planning and Management) with desire for specific related training topics (eg, Budgeting) was examined descriptively. Logistic regressions adjusted for education were used to test (1) whether the associations between competency in individual domains and desire for specific related training topics were statistically significant and (2) whether job level moderated the associations. In the regressions, the independent variable for competency in a domain was the respondent's mean score on items for that domain. Predicted probabilities (adjusted predictions) for selecting a training were constructed using marginal standardization.[24,25] Stata version 15.1 was used. Significance tests were 2-sided. The University of Arizona Institutional Review Board certified this research as exempt from ongoing review.

Results

Of approximately 2246 employees (support staff and professionals) invited to participate in the surveys, 1552 responded (a response rate of about 69%). Of the respondents, 790 nonmanagerial, 332 middle managerial, and 69 upper managerial public health professionals completed the competency assessment instruments. These professionals are examined here.

Education varied with job level. An associate degree or less was more common among nonmanagers (34.7%, n = 251) than among middle managers (20.9%, n = 66) and upper managers (10.6%, n = 7). A master's degree/doctorate was more common among middle managers (38.3%, n = 121) and upper managers (69.7%, n = 46) than among nonmanagers (27.8%, n = 201) (see Supplemental Table 2, available at http://links.lww.com/JPHMP/A910).

Public health domains

Each of the 24 Cronbach α values for the public health domains was greater than 0.80. The domains of Cultural Competency and Communication had the highest percentage of professionals overall who scored as competent (Table 1). By job level, the domains with the highest competency were as follows: nonmanagers—Cultural Competency, middle managers—Leadership/Systems Thinking, and upper managers—Communication. Regardless of job level, Analysis/Assessment, Financial Planning and Management, and Public Health Sciences had the lowest percentages of professionals who scored as competent.

Upper managers had the highest percentage who scored as competent in each of the 8 domains. Middle managers had the lowest percentage scoring as competent in 2 domains—Cultural Competency and Analysis/Assessment. In each of the remaining 6 domains, nonmanagers had the lowest percentage who scored as competent.

Course topics

Of the 25 training topics examined, Leadership Skills was selected most often overall (40.6%) (see Supplemental Table 3, available at http://links.lww.com/JPHMP/A911). It was also the top pick among nonmanagers (41.3%) and middle managers (39.8%). Upper managers' top pick was managing in an Ever-Changing Environment (43.5%).

The topic selected least often overall was Financial Decision Making (16.6%). By job level, the topics selected least were as follows: nonmanagers—Financial Decision Making (14.6%), middle managers—Program Evaluation (17.8%), and upper managers—Customer Service (14.5%).

TABLE 1
Percentage of Professionals Who Scored as Competent in Core Public Health Domains[a]

Public Health Domain	All % (n[b])	Nonmanager % (n[c])	Middle Manager % (n[d])	Upper Manager % (n[e])
Cultural Competency	70.3 (837)	71.3 (563)	66.6 (221)	76.8 (53)
Communication	63.4 (755)	60.9 (481)	64.5 (214)	87.0 (60)
Leadership/Systems Thinking	56.8 (676)	48.6 (384)	70.5 (234)	84.1 (58)
Community Dimensions of Practice	52.4 (624)	47.7 (377)	59.0 (196)	73.9 (51)
Policy Development/Program Planning	50.7 (604)	42.4 (335)	65.4 (217)	75.4 (52)
Analysis/Assessment	42.5 (506)	41.1 (325)	41.0 (136)	65.2 (45)
Financial Planning and Management	36.7 (437)	30.8 (243)	43.4 (144)	72.5 (50)
Public Health Sciences	34.5 (411)	30.5 (241)	37.0 (123)	68.1 (47)
Domains overall[b]	44.3 (528)	39.7 (314)	49.4 (164)	72.5 (50)

[a] *Each professional was assigned a mean score (ranging from 1 through 5) for each of the 8 domains. When the average of these 8 means was 3.0 or more, a professional was coded as competent in the domains overall.*
[b] *n out of 1191.*
[c] *n out of 790.*
[d] *n out of 332.*
[e] *n out of 69.*

Overall competence and number of training topics desired

As can be seen in Figure 1, professionals lacking overall competence in the 8 public health domains desired fewer training topics (median of 4 topics) than professionals who had such competency (median of 6) ($P = .002$). Nonmanagers lacking competence overall also desired fewer training topics than their competent counterparts (median of 4 topics vs 6, $P = .002$). Middle managers lacking competence or having it did not differ significantly regarding the median number of topics (5 vs 6, $P = .08$). Upper managers lacking competence desired more topics than their competent counterparts (12 vs 5, $P = .03$).

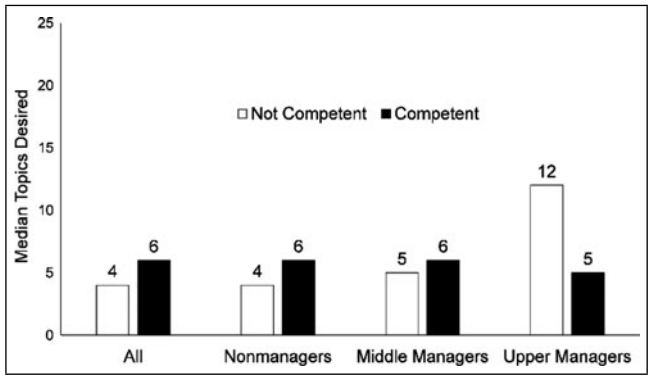

FIGURE 1 Overall Competency and Median Number of Training Topics Desired by Public Health Professionals: Nonmanagers, Middle Managers, and Upper Managers[a]
[a]Medians within the all, nonmanager, and upper manager groups were significantly different ($P < .05$). Each professional was assigned a mean score ranging from 1 to 5 for each of the 8 core public health domains. When the average of these 8 means was 3.0 or more, a professional was coded as competent in the domains overall.

Individual domains and specific training topics: Descriptive findings

Descriptively, the percentage of nonmanagers desiring a specific training topic was generally less if they lacked competency in a related domain (Table 2). For example, only 15.2% of nonmanagers lacking competency in the domain of Financial Planning and Management desired training on Budgeting, whereas 30.9% of their competent counterparts desired it. In contrast, the percentage of upper managers who desired a specific training topic was generally greater if they lacked competency in a related domain. For example, 52.6% of upper managers who were not competent in Financial Planning and Management desired training in Budgeting, whereas only 20.0% of upper managers competent in the domain desired it.

Compared to their competent counterparts, middle managers lacking competency in a domain often had a lower percentage who desired a related course topic. These differences, however, were typically smaller than those indicated for nonmanagers.

Individual domains and specific training topics: Logistic regressions

Among upper managers, when competency in a domain was significantly associated with desire for a related training topic (9 of the 25 topics examined), the association was lesser competence predicting

TABLE 2

Competency in Domains and Desire for Related Training Topics Among Nonmanagers, Middle Managers, and Upper Managers[a]

			Training Topic Desired			Logistic Regressions[b]			
Public Health Domain	**Training Topic**	**Competent in Domain**	**Nonmanager, %**	**Middle Manager, %**	**Upper Manager, %**	**Nonmanager AOR (95% CI)**	**Middle Manager AOR (95% CI)**	**Upper Manager AOR (95% CI)**	**Interactions[c]**
Financial Planning and Management	Budgeting	Yes	30.9	30.6	20.0	1.77[d] (1.44-2.18)	1.16 (0.89-1.52)	0.48[e] (0.26-0.88)	A, B, C
		No	15.2	27.7	52.6				
	Financial Decision Making	Yes	18.9	21.5	28.0	1.52[d] (1.21-1.91)	1.24 (0.92-1.69)	0.75 (0.42-1.37)	B
		No	12.6	17.6	26.3				
	Effective Project Management	Yes	30.9	31.9	22.0	1.47[d] (1.22-1.77)	0.97 (0.75-1.25)	0.59 (0.32-1.09)	A, B
		No	23.9	30.3	31.6				
Analysis/Assessment	Health Data for Program Quality	Yes	32.3	29.4	24.4	1.65[d] (1.38-1.98)	1.26 (0.96-1.66)	0.73 (0.41-1.32)	B
		No	17.8	20.4	29.2				
	Web Data	Yes	28.3	21.3	15.6	1.12 (0.95-1.33)	0.89 (0.68-1.17)	0.60 (0.32-1.14)	
		No	23.2	26.0	33.3				
	Community Assessment	Yes	36.6	28.7	22.2	1.45[d] (1.23-1.70)	1.20 (0.92-1.58)	0.64 (0.36-1.13)	B, C
		No	25.4	20.4	50.0				
Communication	Customer Service	Yes	21.0	15.9	11.7	1.01 (0.79-1.29)	0.71 (0.49-1.04)	0.60 (0.19-1.89)	
		No	19.7	22.0	33.3				
	Social Media	Yes	21.6	28.5	21.7	1.35[e] (1.05-1.75)	1.30 (0.94-1.80)	0.61 (0.24-1.56)	
		No	15.9	25.4	44.4				
	Summarizing Information Effectively	Yes	33.3	33.6	30.0	1.05 (0.84-1.30)	1.19 (0.87-1.62)	0.34[e] (0.13-0.86)	B, C
		No	28.5	28.8	66.7				
Cultural Competency	Cultural Responsiveness	Yes	30.9	24.4	22.6	1.23[e] (1.04-1.46)	1.13 (0.85-1.49)	0.58 (0.26-1.28)	
		No	23.3	21.6	37.5				
Leadership/Systems Thinking	Managing in an Ever-Changing Environment	Yes	26.0	35.5	39.7	1.18 (0.99-1.41)	1.12 (0.86-1.46)	0.56 (0.27-1.13)	B
		No	22.4	34.7	63.6				
	Working With Policy Makers	Yes	21.6	29.1	32.8	1.45[d] (1.18-1.78)	1.33 (0.99-1.80)	0.63 (0.31-1.28)	B
		No	13.8	19.4	54.5				
	Systems Thinking	Yes	20.3	23.9	32.8	1.32[f] (1.08-1.62)	1.64[f] (1.17-2.29)	0.53 (0.26-1.11)	B, C
		No	15.5	15.3	54.5				
	Leadership Skills	Yes	44.0	39.7	32.8	1.33[d] (1.14-1.56)	0.99 (0.76-1.28)	0.84 (0.42-1.69)	A
		No	38.7	39.8	54.5				

(*continues*)

TABLE 2

Competency in Domains and Desire for Related Training Topics Among Nonmanagers, Middle Managers, and Upper Managers[a] (*Continued*)

			Training Topic Desired			Logistic Regressions[b]			
Public Health Domain	**Training Topic**	**Competent in Domain**	**Nonmanager, %**	**Middle Manager, %**	**Upper Manager, %**	**Nonmanager AOR (95% CI)**	**Middle Manager AOR (95% CI)**	**Upper Manager AOR (95% CI)**	**Interactions[c]**
Policy Development/ Program Planning	Planning Public Health Programs	Yes	33.4	26.7	25.0	1.19[e] (1.00-1.41)	0.85 (0.67-1.09)	0.51 (0.25-1.03)	A, B
		No	29.2	31.3	41.2				
	Quality Improvement	Yes	32.5	40.6	34.6	1.29[f] (1.09-1.53)	1.09 (0.87-1.36)	0.51 (0.26-1.00)	B, C
		No	27.9	37.4	47.1				
	Improving Program Outcomes/ Measures	Yes	34.9	41.0	34.6	1.21[e] (1.02-1.43)	1.14 (0.91-1.43)	0.49[e] (0.25-0.96)	B, C
		No	32.3	35.7	47.1				
	Using Evidence-Based Programs/Policies	Yes	34.0	27.2	23.1	1.26[f] (1.06-1.50)	0.93 (0.73-1.19)	0.48[e] (0.24-0.98)	A, B
		No	28.4	32.2	47.1				
	Program Evaluation	Yes	18.5	18.0	11.5	1.15 (0.94-1.41)	1.03 (0.77-1.38)	0.31[e] (0.13-0.75)	B, C
		No	18.7	17.4	41.2				
	Advanced Program Evaluation	Yes	28.4	30.9	25.0	1.44[d] (1.19-1.75)	1.21 (0.93-1.56)	0.33[f] (0.15-0.70)	B, C
		No	18.5	20.0	52.9				
	Public Health Preparedness	Yes	27.8	23.0	17.3	1.11 (0.93-1.33)	1.11 (0.85-1.46)	0.42[e] (0.19-0.90)	B, C
		No	26.4	18.3	41.2				
	Social/Economic Determinants of Health	Yes	32.2	30.4	25.0	1.13 (0.95-1.34)	1.15 (0.90-1.47)	0.44[e] (0.22-0.89)	B, C
		No	29.9	27.0	58.8				
Public Health Sciences	Public Health 101	Yes	22.8	22.0	14.9	0.87 (0.73-1.03)	0.79 (0.61-1.03)	0.48[e] (0.25-0.91)	
		No	31.7	31.1	31.8				
Community Dimensions of Practice	Community Mobilization and Engagement	Yes	31.0	27.0	37.3	1.35[f] (1.13-1.62)	1.23 (0.92-1.64)	0.68 (0.34-1.38)	
		No	23.7	25.0	33.3				
	Working With Stakeholders	Yes	19.6	20.9	21.6	1.42[f] (1.14-1.77)	1.47[e] (1.07-2.03)	0.54 (0.24-1.19)	B, C
		No	13.6	19.9	33.3				

Abbreviations: AOR, adjusted odds ratio; CI, confidence interval.

[a] *The following is an example of how to read the percentages. Among nonmanagers, 30.9% of those who were competent and 15.2% of those who were not competent in Financial Planning and Management desired training on Budgeting. Among middle managers, 30.6% of those who were competent and 27.7% of those who were not competent in Financial Planning and Management desired training on Budgeting.*

[b] *In the logistic regressions, a respondent's competency score for a domain was the mean rating for items in that domain.*

[c] *Tests of interactions: A = nonmanagers and middle managers differed significantly ($P < .05$) regarding how competency status and wanting a course topic were associated; B = nonmanagers and upper managers differed significantly regarding the association; C = middle managers and upper managers differed significantly regarding the association. (Full regressions are in Supplemental Table 4, available at http://links.lww.com/JPHMP/A912.)*

[d] $P < .001$.

[e] $P < .05$.

[f] $P < .01$.

greater desire for the topic—see adjusted odds ratios (AORs) in Table 2. In contrast, among nonmanagers, when competency in a domain was significantly associated with desire for a related training topic (17 of the 25 topics examined), the association was lesser competence predicting lesser desire for the topic. For instance, the AOR for the association between Financial Planning and Development and desire for training in Budgeting was 0.48 (95% confidence interval [CI]: 0.26-0.88) for upper managers but 1.77 (95% CI: 1.44-2.18) for nonmanagers. (A statistically significant AOR below 1.00 indicates a negative association—lesser competence predicting greater desire; one above 1.00 indicates a positive association—lesser competence predicting lesser desire. Full regressions are in Supplemental Table 4, available at http://links.lww.com/JPHMP/A912). Among middle managers, the data indicated relatively little association between competency and desire for training topics.

In 19 of the 25 regression analyses in Table 2, job level significantly moderated the association between domain competence and desire for training topics (see rightmost column in Table 2). In most of the interactions, nonmanagers and upper managers differed regarding the direction of their competency-training desire associations (as described earlier). The majority of the interactions were in the domains of Financial Planning and Management, Analysis/Assessment, Leadership/Systems Thinking, and Policy Development/Program Planning.

The predicted probability of desiring course topics by competency status within individual domains is shown in Figure 2. (When multiple training topics were related to a domain, the average probabilities for the topics are presented.) The probabilities generally show negative associations for upper managers (lesser competency correlated with greater desire for related training) but positive associations for nonmanagers (lesser competency correlated with lesser desire for related training). The slopes for middle managers were often flatter than those for nonmanagers and upper managers, but nevertheless closer to those of nonmanagers than upper managers.

Discussion

This study examined competency in core domains and desire for domain-related training topics among professionals at public health departments in the US Southwest. Substantial gaps in competency, particularly in domains involving quantitative skills (Analysis/Assessment, Financial Planning and Management, and Public Health Sciences), were found. Competency was highest among upper managers and generally lowest among nonmanagers. Leadership Skills was the training topic desired most often by respondents overall (40.6%). Some topics were desired substantially more by upper managers than by nonmanagers (eg, Systems Thinking and Working With Policy Makers), but desire for many topics differed relatively little by job level alone.

As noted earlier, professionals lacking competency in core domains might be expected to have particular interest in related training. Responses from upper managers indicated that they were in sync with this expectation. Upper managers who lacked overall competency in the 8 core domains desired more training topics than their competent counterparts (median of 12 topics vs 5). And upper managers who lacked competency in an individual domain were often more likely to indicate desire for training topics specific to that domain. For example, 52.6% of upper managers lacking competency in Financial Planning and Management desired training in Budgeting, compared with just 20.0% of upper managers who had such competency.

Findings for nonmanagers, however, generally indicated the reverse of the expectation. Nonmanagers, the largest job level group, desired a median of 6 training topics when they were competent in core domains overall, but a median of 4 topics when they lacked such competence. Analyses of individual domains and individual related topics generally showed the same pattern. For example, desire for training in Budgeting was twice as high among nonmanagers who had competency in Financial Planning and Management (30.9%) than those who did not (15.2%). The association between competency in a domain and desire for a specific related training topic was found to be dependent on (interact with) job level in 19 of the 25 topics examined. Most of the interactions involved differences between nonmanagers and upper managers as described earlier. The majority of the interactions were found in analyses that involved the domains of Financial Planning and Management, Analysis/Assessment, Leadership/Systems Thinking, and Policy Development/Program Planning—domains that often require quantitative and/or complex management skills.

For middle managers, little association between competency in individual domains and desire for specific topics was indicated. One speculative explanation may be that middle managers might include many individuals similar to nonmanagers as well as many similar to upper managers. If so, chances of finding a simple negative or positive association between competency and interest in related training for this group would be limited.

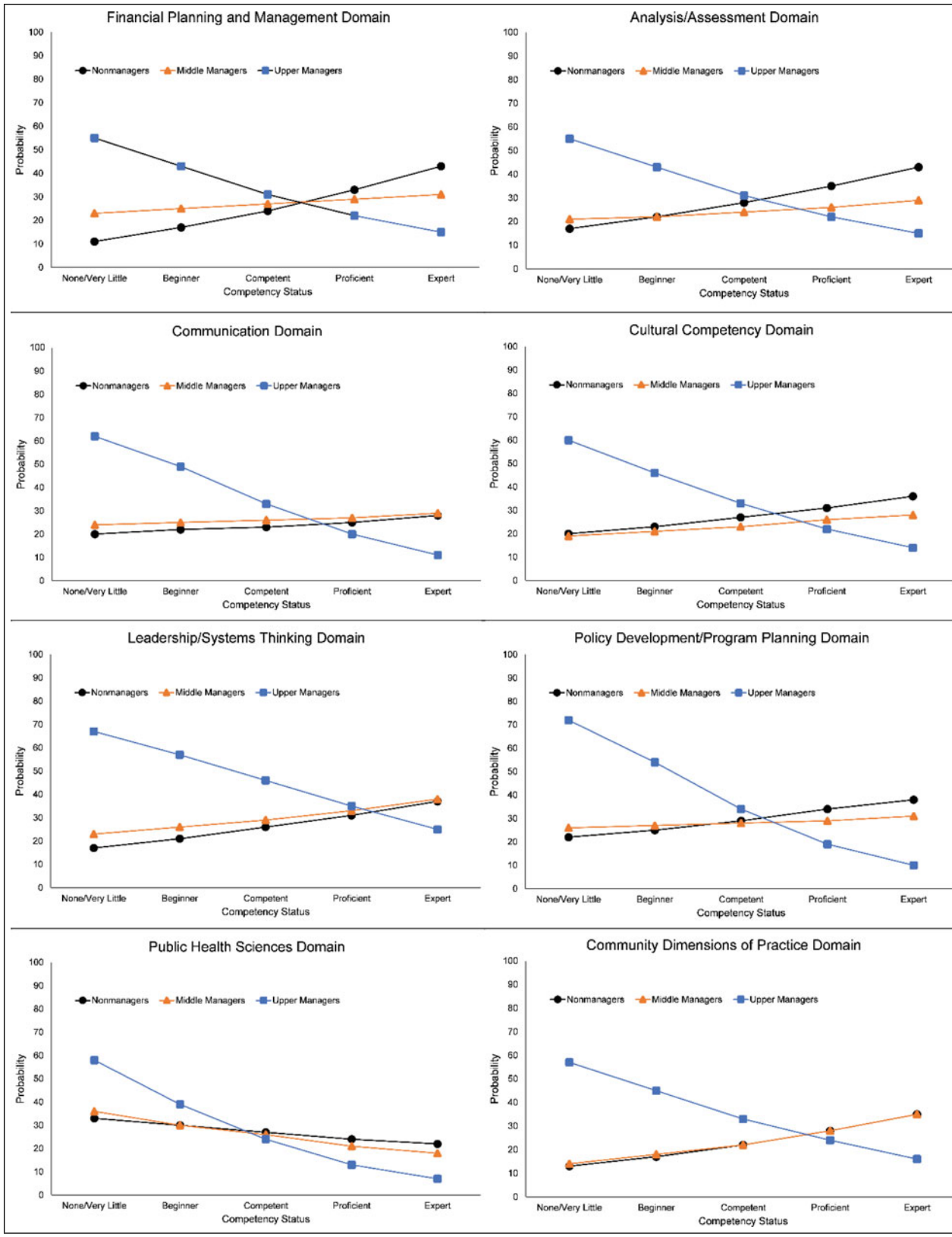

FIGURE 2 Predicted Probability of Desiring Training Topics Related to a Domain by Competency Status in the Domain: Nonmanagers, Middle Managers, and Upper Managers[a]

[a]For domains with multiple related training topics (all domains other than Cultural Competency and Public Health Sciences), the average of the probabilities of desiring those topics at each of the 5 points on the competency status rating scale is presented. This figure is available in color online (www.JPHMP.com).

Possible underlying factors

Upper managers commonly need a wide array of skills to perform their jobs.[14,15,17,19] This may help explain why their interest in training was often higher when competency in core public health domains was less. In contrast, nonmanagers, commonly being specialists, may tend to focus on and be competent in only the domains most pertinent to their jobs and to have interest primarily in training related to those domains. If so, less competence in domains outside of their specialty and less interest in training related to those domains would be expected. This could help explain the association found for nonmanagers (ie, why, for this group, lesser competence in a domain and lesser desire for related training were associated).

There are other possible factors. Upper managers probably have greater exposure to workforce development recommendations and thus the oft-repeated message that public health professionals need competence in multiple domains. This may have encouraged them to adopt the message, at least more so than nonmanagers. Also, to help promote competence organizationally, some upper managers may be trying to lead by example (thus greater interest in developing their competency across domains). Another possibility is that rewards for developing skills in new domains may be fairly immediate for upper managers. For example, greater financial skills could have immediate benefits for many upper managers, as managing budgets is often one of their many responsibilities. In contrast, a nonmanager epidemiologist, for example, may have to move up through the ranks before seeing rewards for enhanced financial skills, limiting immediate interest in such skills.

Implications

Although competency in multiple domains may be desirable for public health professionals, this idea does not seem to have been fully adopted, at least operationally, by many of the nonmanagers and middle managers examined here. If it had been fully adopted, it could be expected that competency deficits among nonmanagers and middle managers would have correlated with heightened interest in related training, as was found for upper managers. There appears to be a need for efforts to bring nonmanagers and middle managers into sync with the idea, or to reconsider it.

Efforts to better support interest in competency-related training could include introducing or enhancing information campaigns to better educate the public health workforce about the importance of competency/training. Extrinsic motivations such as competency requirements at the workplace, credentialing/certification programs, and fiscal rewards could also be considered, particularly for nonmanagers and middle managers. Accreditation programs for public health departments may also help motivate interest in employee competency.[26,27] This said, historically, resources for public health workforce development have been limited.[10,28]

An example of reconsidering the idea might be to move from asserting that there is a general need for competency in a fixed set of domains (eg, COL's 8 domains) to focusing on the relative importance of various domains to a professional's job. For instance, finance professionals might be encouraged to first have competency in, say, the domains of Financial Planning and Management and of Communication. Then realizing competency in selected other domains (eg, Leadership/Systems Thinking and Policy Development/Program Planning) could be planned in order of importance. And some domains (eg, Public Health Sciences) could be viewed as having limited relevance. Such tailoring might seem more intuitive and achievable to many public health professionals and their supervisors.

Recommendations on competency and course training development have typically come from experts—a top-down approach. This study looked at the competencies and training interests of employees to help inform such recommendations—essentially a bottom-up approach. By doing so, it provides new information about how competency and training interests relate in public health departments, information that raises questions about how well decades-old recommendations regarding competency and training have been adopted by the public health workforce. More such analyses are needed.

Limitations/considerations

Whether this study's findings generalize to public health employees beyond those surveyed needs to be examined. Thirteen public health departments and a public health officers association invited employees to participate in this study's survey. The statistical analyses conducted did not adjust for age and gender. Statistical adjustments were made for education, but doing so had no practical impact on the associations found between competency in domains and desire for related training (see Supplemental Table 4, available at http://links.lww.com/JPHMP/A912). Psychometric research on COL's competency assessment instruments has been limited.[29] This study's results should be viewed in light of the fact that bias in self-assessments often takes place.[30] Research is needed to examine training topics beyond the 25 considered here. The estimated response rate (69%) was

Implications for Policy and Practice

- It might be expected that lesser competence among public health professionals in core public health domains would be accompanied by greater interest in related training, but only upper managers exhibited this pattern. By contrast, interest among nonmanagers in training related to core domains was commonly less when competence in the domains was less. Little association between competency in core domains and interest in related training was indicated for middle managers.
- Efforts are needed to better connect core domain competency status and training interest among nonmanagers and middle managers.
- It may also be useful to consider alternatives to the widely accepted idea that public health professionals need competency in a fixed set of core domains. For example, ranking domains by their importance to one's job and pursuing training accordingly might seem more intuitive and doable, particularly to the many rank and file public health professionals who specialize.
- Recommendations on competency and training have typically come from experts—a top-down approach. This study looked at the competencies and training interests of employees to help inform such recommendations—essentially a bottom-up approach. More such analyses are needed.

constructed using all those who responded to the survey (support staff and professionals). The average response rate for surveys in organizational research may be about 53%.[31]

Conclusions

While it might seem reasonable to expect that lesser competence in core domains would be accompanied by greater desire for ameliorative training, only upper managers exhibited this pattern. Either the expectation of broad competency among all public health professionals should be reexamined, or efforts are needed to better connect domain competency status and training interest among nonmanagers and middle managers.

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