

Purpose

To identify patterns of organizational supports and to explore associations with research evidence use for job tasks among public health practitioners

Background

- Public health practitioners are expected to use effectiveness evidence in grant applications, selection and justification of strategies, priority-setting, implementation, and evaluation
- Balancing what the research shows on effectiveness with the needs of communities is part of evidence-based decision making (EBDM)
- Organizational supports are one of several factors affecting use of research evidence in public health decision-making

Methods: Measures

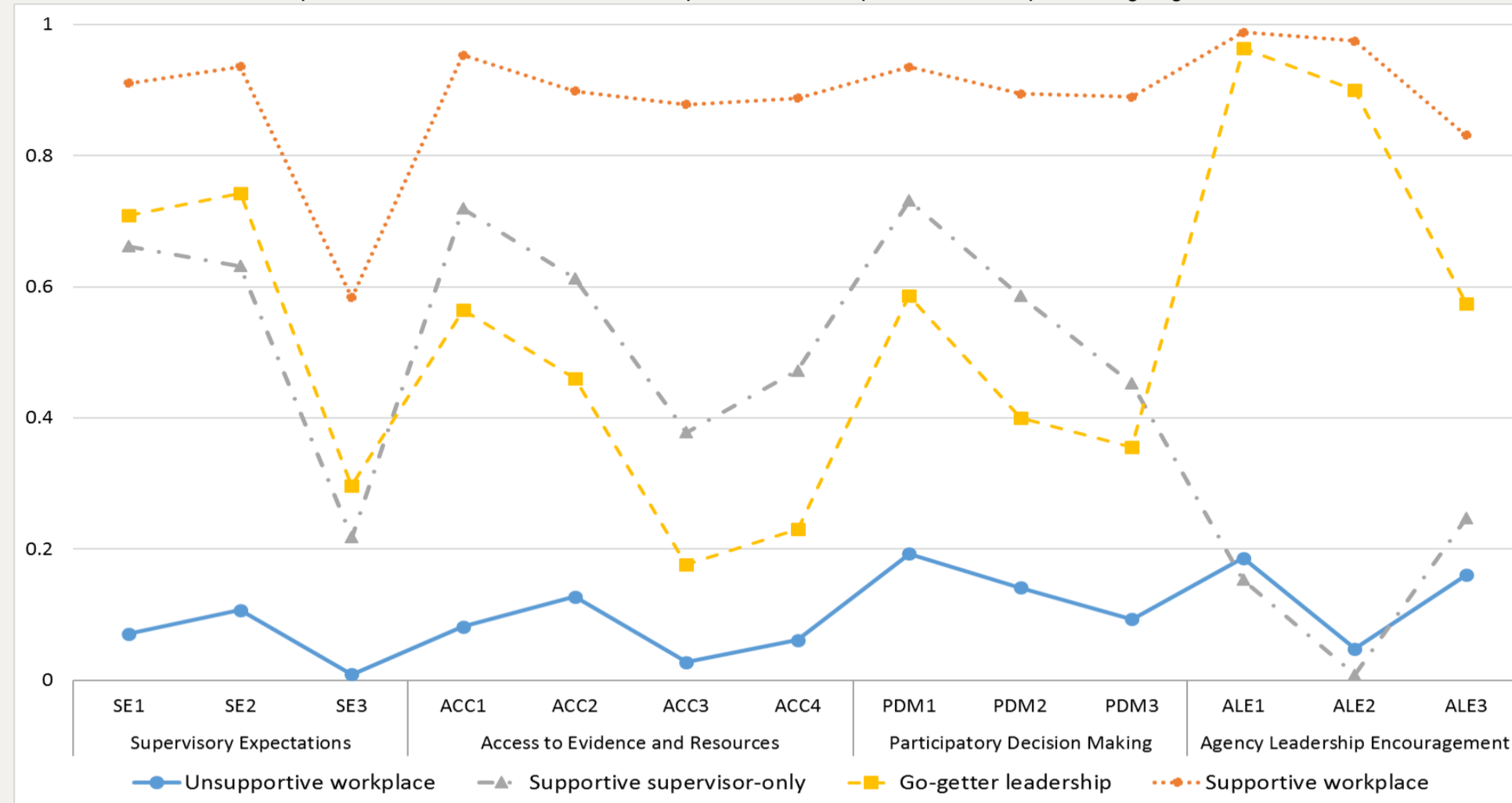
- Staff in the 12 state health department chronic disease units and a purposive sample of staff in partnering organizations participated in a baseline survey in 2014 and again in 2016
- Perceived organizational supports in 13 7-point Likert items covering supervisory EBDM expectations, access to evidence and resources, participatory decision-making, and agency leadership encouragement
- Frequencies of research evidence use to: write grant applications, assess needs, select interventions, justify intervention selection, evaluate interventions, and develop materials for partners → Mean of 6 variables → Dichotomize: Highest tertile vs others (Outcome variable in GLMM model)

Methods: Latent Class Analysis

- Inclusive latent class analysis (LCA): Identify distinct, mutually exclusive subgroups of organizational supports
- Indicators: 13 observed dichotomous variables of organizational supports
- Covariates: the outcome research evidence use at time 2, state, and job position
- Two classify-analyze approaches: Investigate the relationship between research evidence use at time 2 and class membership
- Maximum probability assignment
- Multiple pseudo-class draws
- Generalized linear mixed model (PROC GLIMMIX): Outcome: Research evidence use at time 2
- Random effect: State Predictor: Class membership
- Covariates: Baseline research evidence use; Education

Results: Latent Class Analyses

Figure 1. Item response probability of organizational supports among the 4 latent classes in a 2014 sample of chronic disease prevention staff from 12 U.S. state public health departments and partnering organizations, N=872.



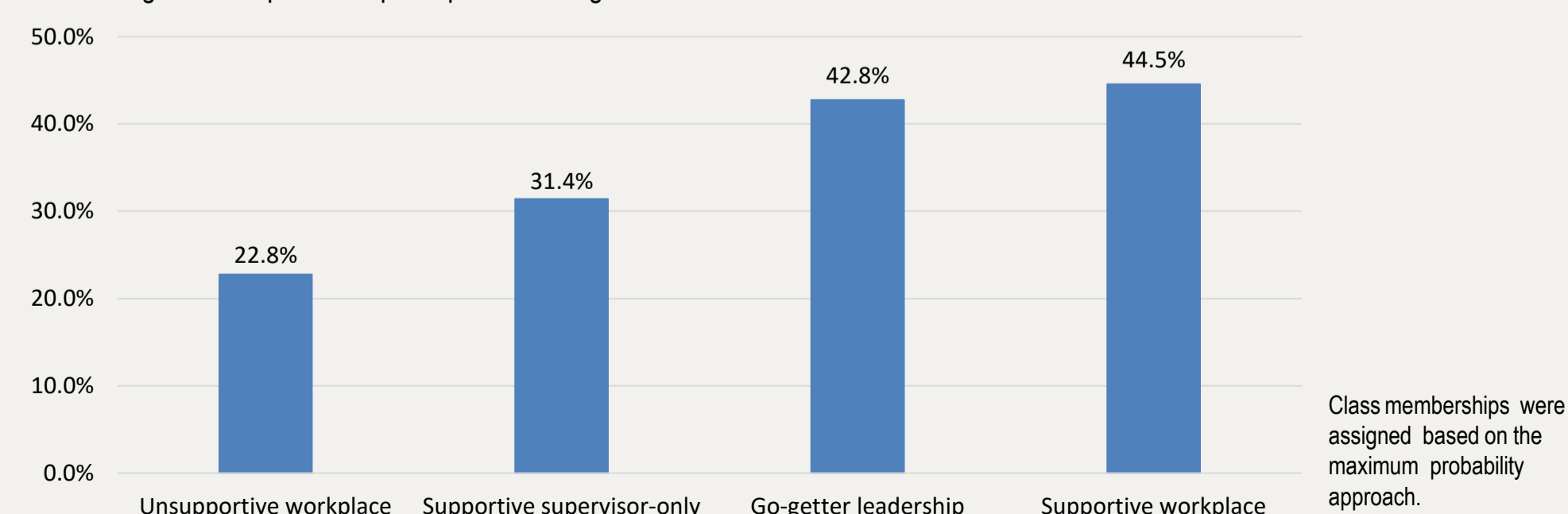
Adjusted for evidence use at time 2, state and job position.

Table 1. Fit statistics for latent class models of organizational supports reported by public health practitioners (N=872).

Number of latent classes	LL	G ²	AIC	BIC	aBIC	Entropy	DF	Identification
2	-6453.95	3316.68	3370.68	3499.79	3414.05	0.84	8164	100%
3	-6158.42	2725.61	2807.61	3003.68	2873.48	0.84	8150	75%
4	-5994.24	2397.24	2507.24	2770.26	2595.59	0.86	8136	94%
5	-5919.26	2247.28	2385.28	2715.25	2496.12	0.87	8122	13%
6	-5850.18	2109.13	2275.13	2672.05	2408.46	0.86	8108	24%

LL = log likelihood; G² = Likelihood-ratio statistic G²; AIC = Akaike information criterion; BIC = Bayesian information criterion; aBIC = adjusted Bayesian information criterion. DF=Degrees of freedom. The model selected in this study is highlighted in bold.

Figure 2. Proportion of participants with highest research evidence use at time 2 for each latent class.



Class memberships were assigned based on the maximum probability approach.

Results: Participants

- 872 participants (70.5% of baseline)
- 79.4% female
- 65.6% master degree or higher
- 47.6% program managers
- 19.6% leadership position

Results: GLMM

Table 2. Odds ratios of highest research evidence use at time 2 in 2016, N=872.

Latent Classes	Odds ratios of highest research evidence use at time 2 (95% CI)	
	Maximum-probability	Multiple pseudo-class draws
Unsupportive workplace	1.00	1.00
Supportive supervisor-only	1.15 (0.69-1.92)	1.25 (0.73-2.15)
Go-getter leadership	2.08 (1.35-3.23)	2.09 (1.31-3.30)
Supportive workplace	1.74 (1.10-2.74)	1.74 (1.07-2.82)

Conclusions

- Four distinct latent classes of organizational supports have been identified with LCA in a sample of staff from 12 state public health departments and partnering organizations
- LCA is a useful tool to identify patterns of individual or organizational behaviors pertinent in public health
- Two classify-analyze approaches have comparable performance with inclusive LCA
- Agency leadership support and supervisory expectations are the crucial element of organizational supports to encourage research evidence use

Implications for Public Health

- Public health agencies can increase use of research evidence in grant applications, selection and justification of EBPPs, and evaluation through agency leaders valuing and encouraging EBDM in conjunction with supervisory expectations
- Latent class analysis is a useful tool to identify patterns of modifiable organizational characteristics that facilitate evidence-based public health practice

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