

Does Regional Disease Prevalence Influence Physician Assistant Curricula?

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Background

- Many PA programs have a mission to serve their communities; all programs must prepare students for NCCPA certification.
- Study investigated whether number of hours spent in PA curricula on a variety of medical topics was correlated with the state or regional prevalence of these conditions.

Table 1. Prevalence of select conditions by state or region

	Nativity (per 1000 citizens)	Teen births (per 1000 women)	Heart failure (deaths per 100,000)	Depression (% of pop.)	Diabetes (% of pop.)	Obesity (% of pop.)	Overweight (% of pop.)	Dental exam in past year (% of pop.)
Alabama/Arkansas/Louisiana/Mississippi	13.1	33.7	217.9	21.1	13.4	35.9	33.6	58.7
Arizona/New Mexico/Nevada/Utah	13.4	26.0	141.8	18.0	10.2	27.5	35.1	63.6
California	12.6	19	150.5	13.5	10.2	25	36	67.1
Colorado/Kansas/Missouri/Oklahoma	12.7	25.5	192.3	20.0	9.8	29	35.7	63.2
Connecticut/Rhode Island	10.1	11.1	158.9	17.4	9.8	26.1	36.2	77.3
Florida	11.1	20.8	112.5	14.2	11.8	27.4	35.8	63
Georgia/South Carolina	12.5	25.8	187.6	17.9	12.4	31.7	34.6	62.1
Illinois/Indiana	12.4	22.1	181.8	16.3	10.8	31.9	33.8	64.3
Iowa/Minnesota	12.7	15.5	185.1	16.3	8.7	29.3	36.9	73
Kentucky/West Virginia	12.1	32.3	227.4	23.4	13.7	35.2	34.4	60.6
District of Columbia/Maryland/New Jersey	11.9	14.6	129.7	13.6	9.8	28.2	35.6	71.7
Maine/Massachusetts/New Hampshire	10.2	10.5	166.8	19.5	9.4	24.9	36.5	72.0
Michigan	11.4	19.4	189.5	22	11.2	32.5	35	70.1
North Dakota/Nebraska/South Dakota/Montana	13.8	23.6	191	17.3	8.4	30.0	36.8	67.8
New York	12	14.6	130.2	11.7	10.5	25.5	35.3	68.5
North Carolina	12	23.6	181.7	18.3	11.3	31.8	35	63.6
Ohio	12	23.2	189.2	17.4	11.1	31.5	34.8	67.9
Idaho/Oregon/Washington	12.3	18.7	200	21.5	9.4	28.5	34.87	67.5
Pennsylvania	11	17.7	175.4	18.7	11.3	30.3	35.2	66.4
Tennessee	12.4	30.5	192	21.1	12.7	34.8	33.8	59.1
Texas	14.7	34.6	191	12.5	11.2	33.7	34.8	59.4
Virginia	12.3	17.1	157.7	15.9	10.4	29	36.5	70.5
Wisconsin	11.6	16.2	179.1	16.7	9.8	30.7	35.5	72.6
Total	12.19 (1.05)	21.78 (6.73)	167.97 (43.87)	17.58 (3.14)	10.75 (1.39)	30.02 (3.20)	35.29 (0.93)	66.52 (5.03)

Methods

- Compared public prevalence data from Centers for Disease Control & Prevention for various health outcomes by state with data of de-identified curriculum content hours from Physician Assistant Education Association Curriculum Survey.
- Medical topics included contraception, depression, diabetes, heart failure, obesity, and oral health.
- States with fewer than five PA programs were grouped into regions.
- Pearson’s correlation analysis was performed to explore the potential association between the two.

Results

- No significant correlations for any of the variables when raw PAEA Curriculum data were used.
- When PAEA outliers were dropped, and group means substituted in their place, two significant correlations (diabetes and teen birth rates) were identified. (p value > 0.05)

Conclusion

- Considering the number of variables tested, more consistent correlations would be expected if there was a pervasive mindset to prioritize local epidemiology of disease when designing curricula..
- Further research and discussion are needed to address the potential value of and the best practices for designing curricula to meet programmatic goals that are specific to community or state disease prevalence while still preparing students for PANCE.

Regional disease prevalence appears to be secondary to the NCCPA blueprint in driving curricular design.

State/region	Curriculum Topics											
	Contraception M (SD)		Depression M (SD)		Diabetes M (SD)		Heart failure M (SD)		Obesity M (SD)		Oral Health M (SD)	
	All	Outliers removed	All	Outliers removed	All	Outliers removed	All	Outliers removed	All	Outliers removed	All	Outliers removed
Alabama/Arkansas/Louisiana/Mississippi	5.19 (2.75)	5.19 (2.75)	9.94 (6.92)	9.94 (6.92)	12.25 (4.62)	12.25 (4.62)	8.88 (4.27)	12.25 (4.62)	6.25 (5.85)	6.25 (5.85)	3.50 (2.07)	3.50 (2.07)
Arizona/New Mexico/Nevada/Utah	6.86 (5.58)	6.86 (5.58)	9.43 (5.71)	9.43 (5.71)	22.93 (27.15)	22.93 (27.15)	14.00 (16.57)	22.93 (27.15)	8.21 (9.69)	8.21 (9.69)	4.29 (1.80)	4.29 (1.80)
California	6.39 (2.96)	6.39 (2.96)	8.72 (4.88)	8.72 (4.88)	12.28 (7.17)	12.28 (7.17)	8.17 (4.21)	12.28 (7.17)	6.56 (5.53)	6.56 (5.53)	5.83 (3.52)	5.83 (3.52)
Colorado/Kansas/Missouri/Oklahoma	5.00 (2.19)	5.00 (2.19)	9.19 (5.44)	9.19 (5.44)	13.56 (6.96)	13.56 (6.96)	6.31 (2.96)	13.56 (6.96)	3.63 (2.57)	3.63 (2.57)	5.13 (3.95)	5.13 (3.95)
Connecticut/Rhode Island	6.33 (2.58)	6.33 (2.58)	10.67 (6.65)	10.67 (6.65)	15.33 (8.14)	15.33 (8.14)	7.58 (1.49)	15.33 (8.14)	9.83 (11.16)	9.83 (11.16)	13.75 (5.00)	13.75 (5.00)
District of Columbia/Maryland/New Jersey	6.08 (2.94)	6.08 (2.94)	8.33 (4.18)	8.33 (4.18)	9.67 (3.14)	9.67 (3.14)	12.42 (10.85)	12.42 (10.85)	4.58 (1.69)	4.58 (1.69)	3.42 (1.74)	3.42 (1.74)
Florida	7.77 (5.10)	6.55 (3.09)	14.09 (13.62)	10.30 (5.24)	22.45 (15.21)	18.30 (6.44)	13.69 (8.20)	13.69 (8.20)	10.11 (10.61)	7.33 (5.20)	7.16 (6.70)	7.16 (6.70)
Georgia/South Carolina	3.83 (1.72)	3.83 (1.72)	6.83 (3.76)	6.83 (3.76)	15.5 (11.40)	15.5 (11.40)	7.83 (3.66)	15.5 (11.40)	4.00 (3.58)	4.00 (3.58)	7.33 (12.16)	2.40 (1.36)
Iowa/Minnesota	5.17 (2.40)	5.17 (2.40)	14.67 (17.50)	7.60 (2.58)	17.67 (16.22)	11.20 (3.49)	15.33 (17.18)	8.40 (2.58)	5.75 (1.60)	5.75 (1.60)	4.50 (1.76)	4.50 (1.76)
Idaho/Oregon/Washington	6.40 (4.10)	6.40 (4.10)	7.70 (6.20)	7.70 (6.20)	10.30 (5.22)	10.30 (5.22)	8.20 (3.56)	10.30 (5.22)	4.50 (3.57)	4.50 (3.57)	7.90 (3.25)	7.90 (3.25)
Illinois/Indiana	4.11 (1.12)	4.11 (1.12)	5.82 (2.46)	5.82 (2.46)	10.86 (4.10)	10.86 (4.10)	9.29 (6.65)	10.86 (4.10)	4.25 (3.86)	4.25 (3.86)	1.86 (1.35)	1.86 (1.35)
Kentucky/West Virginia	4.83 (2.04)	4.83 (2.04)	8.33 (3.83)	8.33 (3.83)	17.67 (14.73)	12.00 (4.94)	10.50 (6.06)	10.50 (6.06)	5.00 (4.24)	5.00 (4.24)	5.67 (5.75)	5.67 (5.75)
Maine/Massachusetts/New Hampshire	7.45 (6.49)	5.83 (3.99)	13.65 (11.04)	8.69 (3.46)	18.55 (15.65)	14.50 (7.96)	13.70 (7.96)	13.70 (7.96)	10.3 (17.75)	4.78 (3.19)	5.70 (4.35)	5.70 (4.35)
Michigan	5.63 (3.56)	5.63 (3.56)	8.00 (5.40)	8.00 (5.40)	15.42 (10.06)	15.42 (10.06)	11.38 (3.66)	15.42 (10.06)	5.25 (3.22)	5.25 (3.22)	7.21 (9.58)	7.21 (9.58)
North Carolina	7.59 (3.73)	7.59 (3.73)	11.56 (6.02)	11.56 (6.02)	22.14 (13.88)	16.72 (6.71)	17.68 (11.93)	15.35 (9.08)	8.22 (6.07)	6.55 (2.43)	6.36 (3.48)	6.36 (3.48)
North Dakota/Nebraska/South Dakota/Montana	6.9 (7.45)	3.63 (1.39)	15.8 (19.37)	7.25 (3.11)	19.80 (13.72)	19.80 (13.72)	12.80 (8.04)	12.80 (8.04)	8.90 (9.38)	8.90 (9.38)	9.00 (10.02)	9.00 (10.02)
New York	5.75 (2.89)	5.75 (2.89)	9.60 (6.50)	9.60 (6.50)	15.41 (10.69)	14.05 (8.57)	10.63 (9.48)	14.05 (8.57)	8.25 (8.63)	7.31 (7.42)	6.39 (4.23)	6.39 (4.23)
Ohio	17.58 (37.76)	6.73 (3.43)	26.13 (49.15)	10.15 (5.28)	27.42 (32.58)	15.10 (7.71)	30.25 (51.51)	12.60 (4.94)	10.04 (11.49)	7.14 (5.55)	14.33 (31.36)	5.36 (4.21)
Pennsylvania	5.38 (3.73)	5.38 (3.73)	8.64 (5.38)	8.64 (5.38)	14.39 (7.40)	14.39 (7.40)	9.78 (6.04)	14.39 (7.40)	5.17 (4.71)	5.17 (4.71)	4.99 (4.16)	4.99 (4.16)
Tennessee	13.54 (18.97)	5.85 (2.23)	17.67 (23.24)	8.40 (4.96)	32.35 (42.12)	16.70 (11.43)	23.08 (32.49)	10.10 (6.64)	17.75 (30.67)	5.30 (3.22)	11.42 (18.05)	4.10 (2.13)
Texas	11.75 (8.81)	7.50 (3.96)	19.63 (14.66)	12.83 (7.53)	25.00 (19.83)	15.33 (8.51)	16.75 (10.21)	16.75 (10.21)	13.5 (14.92)	6.33 (4.23)	10.50 (11.14)	7.71 (7.87)
Virginia	5.67 (3.39)	5.67 (3.39)	8.67 (3.44)	8.67 (3.44)	11.17 (3.76)	11.17 (3.76)	8.17 (5.95)	11.17 (3.76)	6.33 (4.23)	6.33 (4.23)	7.17 (6.01)	7.17 (6.01)
Wisconsin	5.30 (3.62)	5.30 (3.62)	7.50 (2.55)	7.50 (2.55)	13.20 (6.54)	13.20 (6.54)	9.2 (4.48)	13.20 (6.54)	7.60 (4.93)	7.60 (4.93)	4.15 (3.68)	4.15 (3.68)
Total	6.98 (3.20)	5.83 (3.20)	11.33 (4.83)	9.12 (5.21)	17.22 (6.02)	14.14 (7.47)	12.42 (5.54)	10.38 (6.34)	7.57 (3.37)	5.90 (4.70)	14.33 (3.18)	5.58 (4.71)

Columns entitled "outliers removed" had numerical values > 4 SD from the group mean removed from the group's data set. The mean for that group was substituted for the deleted data

Table 2. Mean number of instructional hours on select topics by state or region

