

Examining the Association between Community-Level Marginalization and Emergency Room Wait Time in Ontario, Canada

Examen du lien entre la marginalisation communautaire et le temps d'attente au service des urgences en Ontario, Canada

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Appendix 1

TABLE 1. Arithmetic mean marginalization scores for ER service areas with and without missing wait time data

	Wait time		p-value*
	Missing (n = 15)	Not missing (n = 118)	
Total marginalization			
Mean (SD)	-0.16 (0.16)	-0.14 (0.24)	0.81
Median (IQR)	-0.14 (0.22)	-0.19 (0.24)	
Instability			
Mean (SD)	-0.27 (0.18)	-0.22 (0.34)	0.85
Median (IQR)	-0.24 (0.26)	-0.28 (0.20)	
Dependency			
Mean (SD)	0.39 (0.53)	0.15 (0.50)	0.11
Median (IQR)	0.39 (0.66)	0.07 (0.72)	
Deprivation			
Mean (SD)	0.23 (0.35)	-0.12 (0.30)	<0.01
Median (IQR)	0.26 (0.67)	-0.19 (0.39)	
Ethnic concentration			
Mean (SD)	-0.98 (0.13)	-0.38 (0.69)	<0.01
Median (IQR)	-1.00 (0.19)	-0.64 (0.79)	

*Calculated using the Wilcoxon rank-sum test
IQR: Interquartile Range; SD: Standard Deviation

TABLE 2. Geographically weighted marginalization scores for ER service areas with and without missing wait time data

	Wait time		p-value*
	Missing (n = 15)	Not missing (n = 118)	
Total marginalization			
Mean (SD)	-0.20 (0.14)	-0.14 (0.27)	0.70
Median (IQR)	-0.23 (0.15)	-0.18 (0.29)	
Instability			
Mean (SD)	-0.35 (0.14)	-0.21 (0.38)	0.31
Median (IQR)	-0.37 (0.14)	-0.32 (0.33)	
Dependency			
Mean (SD)	0.51 (0.49)	0.18 (0.54)	0.02
Median (IQR)	0.59 (0.50)	0.04 (0.72)	
Deprivation			
Mean (SD)	0.10 (0.38)	-0.12 (0.33)	0.06
Median (IQR)	-0.03 (0.47)	-0.20 (0.51)	
Ethnic concentration			
Mean (SD)	-1.05 (0.16)	-0.38 (0.72)	<0.01
Median (IQR)	-1.09 (0.18)	-0.67 (0.82)	

*Calculated using the Wilcoxon rank-sum test

TABLE 3. Population-weighted marginalization scores for ER service areas with and without missing wait time data

	Wait time		p-value*
	Missing (n = 15)	Not missing (n = 118)	
Total marginalization			
Mean (SD)	-0.15 (0.16)	-0.05 (0.24)	0.19
Median (IQR)	-0.13 (0.16)	-0.07 (0.23)	
Instability			
Mean (SD)	-0.22 (0.20)	-0.04 (0.37)	0.12
Median (IQR)	-0.35 (0.20)	-0.07 (0.48)	
Dependency			
Mean (SD)	0.38 (0.48)	0.13 (0.46)	0.08
Median (IQR)	0.43 (0.45)	0.04 (0.68)	

	Wait time		p-value*
	Missing (n = 15)	Not missing (n = 118)	
Deprivation			
Mean (SD)	0.21 (0.36)	-0.04 (0.26)	0.02
Median (IQR)	0.29 (0.52)	-0.01 (0.44)	
Ethnic concentration			
Mean (SD)	-0.98 (0.13)	-0.24 (0.72)	<0.01
Median (IQR)	-1.00 (0.14)	-0.56 (0.97)	

*Calculated using the Wilcoxon rank-sum test

TABLE 4. Regression between average marginalization and median ER wait time*

	Total marginalization	Instability	Dependency	Deprivation	Ethnic concentration
Overall wait time	5.55 (1.62, 9.49)	3.27 (-1.01, 7.55)	-0.96 (-4.28, 2.35)	-0.35 (-4.51, 3.82)	1.29 (-1.37, 3.96)
High-acuity wait time	0.33 (-0.10, 0.75)	0.60 (0.14, 1.05)	-0.50 (-0.28, -0.14)	0.16 (-0.28, 0.60)	-0.26 (-0.55, 0.02)
Low-acuity wait time	0.59 (0.04, 1.15)	0.64 (0.05, 1.23)	-0.45 (-0.91, 0.01)	-0.03 (-0.60, 0.54)	-0.03 (-0.40, 0.34)

*Regression coefficient (95% confidence interval)

TABLE 5. Regression between area-weighted marginalization and median ER wait time*

	Total marginalization	Instability	Dependency	Deprivation	Ethnic concentration
Overall wait time	5.35 (1.85, 8.84)	2.34 (-1.54, 6.23)	-0.24 (-3.15, 2.66)	-0.57 (-4.11, 2.96)	1.85 (-0.70, 4.41)
High-acuity wait time	0.33 (-0.04, 0.71)	0.46 (0.04, 0.88)	-0.34 (-0.65, -0.02)	0.09 (-0.29, 0.48)	-0.16 (-0.44, 0.11)
Low-acuity wait time	0.67 (0.18, 1.16)	0.41 (-0.12, 0.95)	-0.27 (-0.67, 0.13)	0.01 (-0.48, 0.50)	0.13 (-0.23, 0.48)

*Regression coefficient (95% confidence interval)

TABLE 6. Regression between population-weighted marginalization and median ER wait time*

	Total marginalization	Instability	Dependency	Deprivation	Ethnic concentration
Overall wait time	8.04 (1.85, 11.84)	2.23 (-1.51, 5.96)	-0.87 (-4.32, 2.58)	2.76 (-1.78, 7.30)	1.35 (-1.11, 3.81)
High-acuity wait time	0.46 (0.04, 0.88)	0.32 (-0.09, 0.72)	-0.43 (-0.80, -0.05)	0.33 (-0.17, 0.82)	-0.15 (-0.42, 0.11)
Low-acuity wait time	0.98 (0.45, 1.52)	0.46 (-0.06, 0.98)	-0.35 (-0.83, 0.13)	0.23 (-0.40, 0.85)	0.06 (-0.28, 0.40)

*Regression coefficient (95% confidence interval)

TABLE 7. Regression between average marginalization and average ER wait time*

	Total marginalization	Instability	Dependency	Deprivation	Ethnic concentration
Overall wait time	1.04 (0.31, 1.77)	0.91 (0.17, 1.65)	-0.74 (-1.31, -0.17)	0.12 (-0.60, 0.84)	0.02 (-0.44, 0.48)
High-acuity wait time	0.56 (0.01, 1.11)	0.64 (0.04, 1.24)	-0.57 (-1.03, -0.10)	0.41 (-0.17, 1.00)	-0.27 (-0.64, 0.11)
Low-acuity wait time	1.13 (0.30, 1.95)	0.66 (-0.22, 1.54)	-0.40 (-1.08, 0.28)	0.07 (-0.79, 0.92)	0.23 (-0.31, 0.78)

*Regression coefficient (95% confidence interval)

TABLE 8. Regression between area-weighted marginalization and average ER wait time*

	Total marginalization	Instability	Dependency	Deprivation	Ethnic concentration
Overall wait time	1.72 (1.02, 2.40)	0.64 (0.00, 1.27)	-0.61 (-1.19, -0.02)	0.55 (-0.23, 0.84)	0.03 (-0.26, 0.48)
High-acuity wait time	0.69 (0.15, 1.24)	0.31 (-0.22, 0.84)	-0.50 (-0.98, -0.01)	0.66 (0.02, 1.31)	-0.17 (-0.52, 0.18)
Low-acuity wait time	1.74 (0.96, 2.53)	0.45 (-0.31, 1.21)	-0.34 (-1.04, 0.37)	0.66 (-0.27, 1.59)	0.28 (-0.10, 0.78)

*Regression coefficient (95% confidence interval)

TABLE 9. Regression between population-weighted marginalization and average ER wait time*

	Total marginalization	Instability	Dependency	Deprivation	Ethnic concentration
Overall wait time	1.12 (0.47, 1.76)	0.59 (-0.08, 1.27)	-0.44 (-0.94, 0.06)	0.10 (-0.51, 0.71)	0.24 (-0.20, 0.68)
High-acuity wait time	0.55 (0.06, 1.04)	0.49 (-0.06, 1.05)	-0.36 (-0.78, 0.05)	0.28 (-0.22, 0.79)	-0.16 (-0.52, 0.21)
Low-acuity wait time	1.18 (0.45, 1.90)	0.41 (-0.39, 1.21)	-0.15 (-0.74, 0.45)	0.03 (-0.70, 0.75)	0.42 (-0.10, 0.95)

*Regression coefficient (95% confidence interval)

TABLE 10. Regression between average marginalization and 90th percentile ER wait time*

	Total marginalization	Instability	Dependency	Deprivation	Ethnic concentration
Overall wait time	2.29 (0.94, 3.65)	0.98 (-0.44, 2.39)	-0.63 (-1.73, 0.46)	0.32 (-1.06, 1.69)	0.65 (-0.24, 1.53)
High-acuity wait time	0.85 (-0.22, 1.91)	1.11 (-0.04, 2.27)	-1.21 (-2.10, -0.31)	0.94 (-0.18, 2.07)	-0.62 (-1.34, 0.10)
Low-acuity wait time	2.71 (0.82, 4.41)	1.90 (-0.14, 3.95)	-0.96 (-2.54, 0.62)	0.21 (-1.77, 2.20)	0.28 (-1.00, 1.55)

*Regression coefficient (95% confidence interval)

TABLE 11. Regression between area-weighted marginalization and 90th percentile ER wait time*

	Total marginalization	Instability	Dependency	Deprivation	Ethnic concentration
Overall wait time	3.48 (2.20, 4.75)	0.73 (-0.48, 2.94)	-0.58 (-1.69, 0.54)	1.33 (-0.14, 2.79)	0.68 (-0.11, 1.48)
High-acuity wait time	1.08 (0.02, 2.14)	0.51 (-0.51, 1.53)	-1.11 (-2.05, -0.17)	1.40 (0.16, 2.64)	-0.46 (-1.13, 0.21)
Low-acuity wait time	3.95 (2.14, 5.77)	1.15 (-0.62, 2.93)	-0.74 (-2.38, 0.90)	1.68 (-0.47, 3.84)	0.47 (-0.70, 1.63)

*Regression coefficient (95% confidence interval)

TABLE 12. Regression between population-weighted marginalization and 90th percentile ER wait time*

	Total marginalization	Instability	Dependency	Deprivation	Ethnic concentration
Overall wait time	2.31 (1.12, 3.51)	0.62 (-0.66, 1.90)	-0.19 (-1.15, 0.77)	0.13 (-1.03, 1.29)	0.93 (0.09, 1.77)
High-acuity wait time	0.84 (-0.11, 1.79)	0.90 (-0.17, 1.97)	-0.83 (-1.63, -0.04)	0.66 (-0.31, 1.63)	-0.45 (-1.15, 0.26)
Low-acuity wait time	2.74 (1.07, 4.41)	1.36 (-0.50, 3.22)	-0.37 (-1.75, 1.01)	0.04 (-1.65, 1.73)	0.67 (-0.55, 1.89)

*Regression coefficient (95% confidence interval)