

Table 2: Enabling SDOH Findings by Study

Study	Study Characteristics	Socioeconomic Status	Insurance	Transportation
Bath 2018	Design: Cross Sectional Survey Sample size: 113,647 Population: Chronic Pain	All income quintiles above the first had increasingly higher odds. <i>Unadjusted: Income Quartile 1 (reference) 2 (OR=1.44 CI=1.12-1.84) 3 (OR=1.43; CI=1.14-1.80) 4 (OR=1.82 CI=1.45-2.28) 5 (OR=2.33 CI=1.85-2.93); P&lt;0.05 for all</i> <i>Adjusted: Income Quartile 1 (reference) 2 (OR=1.50 CI=1.16-1.94) 3 (OR=1.57; CI=1.24-1.99) 4 (OR=1.91; CI=1.51-2.40) 5 (OR=2.40 CI=1.86-3.10); P&lt;0.05 for all</i>	Not reported	Not reported
Bell 2017	Design: Retrospective Cohort Study Sample size: 243 Population: Neuro	Not reported	Not reported	Increase travel distance had lesser odds of physical therapy services; Unadjusted: <i>Travel Distance (OR=0.68; 95% CI=0.57-0.81),</i> <i>Adjusted (OR= 0.57; 95%CI= 0.46-0.71)</i> <i>P&lt;0.001</i>
Carter 2007	Design: Retrospective Cohort Study Sample size: 18,546 Population: MSK	Not reported	Public or no insurance had lesser odds than private insurance. <i>Private Insurance (reference)</i> <i>Public- OR=0.66; CI=0.55-0.80</i> <i>No Insurance- OR=0.57; CI=0.43-0.74</i> <i>P&lt;0.05</i>	Not reported
Chan 2009	Design: Retrospective Cohort Study Sample size: 11,119 Population: Neuro	Those making < \$80,000 annually were less likely; <i>Poisson regression model:</i> <i>Outpatient PT-- \$80,000 (reference) \$0-\$40,000 (p-value &lt;0.001; RR=0.81; 95% CI=0.80-0.82) \$40,000-\$80,000 (p-value &lt;0.001; RR=0.87; 95% CI=0.86-0.88)</i>	Not reported	Not reported

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Chevan 2011	Design: Secondary Analysis of Longitudinal Survey Data Sample size: 2,352 Population: Neuro	Those with high income had higher odds than those with low income to seek MD and PT care than solely MD care; <i>MD/PT vs. MD Care: Low=reference; T high <math>\beta=.74</math> SE=.25 P=.003 OR(95%CI)=2.09(1.29,3.40)</i>	Not significant	Not reported
Christiansen 2016	Design: Register-based Cohort Study Sample size: 57,311 Population: MSK	Not reported	Public hospital system more likely than private hospital;  <i>Adjusted RR analysis: Hospital of 1st contact: private (reference) public (RR=1.39; 95%CI=1.36-1.43)  Hospital of surgery: private (reference) public (RR=1.31; 95%CI=1.29-1.34)</i>	Not reported
Cisternas 2009	Design: Secondary Analysis of Longitudinal Survey Data Sample size: 9,933 Population: MSK	Not reported	Public insurance had lesser odds than private; <i>Private insurance coverage (reference) Unadjusted: Public Only (OR=0.67; CI=0.56-0.81) None (OR=0.35; CI=0.21-0.61) Adjusted: Public Only (OR=0.81; CI=0.66-1.00) None (OR=0.47; CI=0.27-0.81)</i>	Not reported

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Denktas 2009	Design: cross-sectional study Sample size: 3,284 Population: unspecified	Income not significant; <i>Standardized income (continuous in Euros) OR=1.00 (1.00-1.01) p&gt;0.05</i>	Not reported	Not reported
Dolot 2020	Design: Retrospective Observational Cohort Study Sample Size: 7,244 Population: MSK	Not reported	Those with Medicare and Medicaid less likely than private insurance. <i>Adjusted Analysis: Managed care (private insurance):reference; Medicaid: <math>\beta=-2.263</math> (95% CI= -2.785to -1.742), <math>p&lt;.001</math>; Medicare: <math>\beta=-0.742</math> (95% CI= -1.146 to -0.340), <math>p&lt;.001</math>;</i>	Not reported
Freburger, Holmes 2005	Design: cross-sectional survey Sample size: 20,227 Population: unspecified	Higher incomes over \$30,000 had higher odds; <i>Adjusted Analysis- Income \$10,000 or less= ref; \$10,000-\$20,000 OR=1.11 (0.93-1.33) P=0.27 \$20,000-\$30,000 OR=1.09 (0.92-1.29) P=0.35 \$30,000-\$40,000 OR=1.39 (1.12, 1.72) P&lt;0.01 \$40,000-\$50,000 OR=1.43 (1.10, 1.84) P=0.01 \$50,000+ OR= 2.05 (1.63, 2.59) P&lt;0.01</i>	Those with supplemental private insurance had higher odds than those with public. <i>Adjusted Analysis- Supplemental private insurance OR= 1.31 (1.12, 1.54) P&lt;0.01</i>	Not reported
Freburger 2011	Design: Retrospective Cohort Study Sample size: 588 Population: MSK	Not reported	No insurance lesser odds than insured; Private insurance not significant <i>Adjusted Analysis: No insurance OR= 0.18, 95%CI= 0.04-0.85, <math>p=.03</math>, Private insurance OR=1.42, 95%CI= 0.57-3.56, <math>P=0.45</math></i>	Not reported

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Freburger 2018	Design: Retrospective Cohort Study Sample size: 23,413 Population: Neuro	3 <sup>rd</sup> income quartile lesser odds than 1 <sup>st</sup> income quartile to use Home Health PT; <i>Adjusted Analysis:</i> 1 <sup>st</sup> quartile= reference; 3 <sup>rd</sup> quartile: Home- OR=0.83; 95%CI=0.73-0.95, p=.007 Outpatient- OR=1.07; 95% CI=0.87-1.33, p=0.50;  2 <sup>nd</sup> and 4 <sup>th</sup> quartiles not significant: 2 <sup>nd</sup> quartile: Home- OR=0.89; 95%CI=0.79-1.02, p=.09 Outpatient- OR=1.03; 95% CI=0.84-1.26, p=0.80; 4 <sup>th</sup> quartile: Home- OR=0.93; 95%CI=0.82-1.06, p=.30 Outpatient- OR=1.13; 95% CI=0.91-1.40, p=0.26;	Not reported	Not reported
Keeney 2017	Design: Secondary Analysis of Longitudinal Survey Data Sample size: 1,276 Population: unspecified	Higher incomes in the 50 <sup>th</sup> and 75 <sup>th</sup> percentile had higher odds; <i>Adjusted Analysis:</i> <i>Use of any Rehab by Income percentile (reference &lt;25th percentile)</i> 25 <sup>th</sup> : OR=1.34 (0.95 - 1.80), p>0.05 50 <sup>th</sup> : OR= 1.52 (1.07 - 2.15), p<0.05 75 <sup>th</sup> : OR=1.68 (1.22 - 2.33), p<0.05	Those with supplemental insurance had higher odds; <i>Adjusted Analysis:</i> <i>Use of any Rehab by those with Medigap supplement: OR=1.37 (1.14-1.64), p&lt;0.05</i>	Those with transportation had lesser odds; <i>Adjusted Analysis:</i> <i>Use of any Rehab by those with transportation: OR=0.69 (.56-.85), p&lt;0.05</i>
Lin 2008	Design: Longitudinal Observational study Sample size: 92 Population: MSK	Not significant; <i>Income level (AUD 1 to 7)</i> <i>Utilisation of private non-medical services (PT): 0.83 (0.63-1.10), p=.20</i>	Not significant <i>Health Insurance, 0=no, 1=yes</i> <i>Utilisation of private non-medical services (PT): 0.96 (0.34-2.77), p=.94</i>	Not reported
Machlin 2011	Design: Secondary Analysis of Longitudinal Survey Data	Not significant; <i>Mean and Multiple Regression Model results: Income Low: mean # of visits per episode (9.9 ( CI=8.8-11.1, <math>\beta</math>=-0.04 (-2.01-1.94); p=0.9711)</i>	Not significant; <i>Mean and Multiple Regression Model results: Age in years/insurance:</i>	Not reported

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	Sample size: 1377 Population: unspecified	<i>Middle: mean # of visits per episode (9.2 (CI=8.1-10.2) <math>\beta</math>=-0.65 (-2.09-0.78); p=0.3722), High: mean # of visits per episode (9.6 (CI=8.8-10.4), <math>\beta</math>=reference</i>	<i>18-64/Private: mean # of visits per episode (9.5 (CI=8.7-10.3, <math>\beta</math>=0.74 (-1.23-2.72); p=0.4585) 18-64/Public/Uninsured: mean # of visits per episode (9.7 CI=8.2-11.2), <math>\beta</math>=reference &gt;65/Medicare: mean # of visits per episode (9.6 CI=8.8-10.4), <math>\beta</math>=-0.23 (-2.22-1.76); p=0.8204),</i>	
Mbada 2019	Design: Cross-sectional study Sample size: 336 Population: unspecified	Not reported	Not reported	Those with difficulty getting to PT had higher odds; "Difficulty getting to where PT is available" Agree (OR=6.748) & Not sure (OR=0.869)
Rogers 2018	Design: cross-sectional study Sample size: 139 Population: unspecified	Not reported	Those with public insurance (Medicaid) waited longer to be seen than those with private insurance. Private insurance was accepted by almost all clinics, while public insurance was accepted by about half; <i>Unadjusted: Practices accepting insurance type (n%): Public: 72(51.8%), Private: 134(96.4%), p=0.018 Days to be seen, mean (range) Private 5.8 (0-21) Public 8.4 (0-39) P Value .0001</i>	Not reported

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Rogers 2019	Design: Cross-sectional survey Sample size: 138 Population: MSK	Not reported	Increase in utilization of physical therapy services for clinics that accepted private insurance and decrease in wait time to be seen for those with private insurance; <i>Clinic insurance acceptance</i> Private: 96.4%, Medicaid: 51.4%, $p=0.019$ Mean wait to be seen by insurance type: Private: 6.3 days, Medicaid: 8.3 days, $p=0.001$	Not reported
Sandstrom 2017	Design: Secondary Analysis of Longitudinal Survey Data Sample size: 13.2 million Population: unspecified	Lower incomes saw greater increase in utilization of physical therapy services <i>Poor (+4.2%)</i> <i>Near poor (+16.8%)</i> <i>Low income (+14.6%)</i> <i>Middle income (+3.4%)</i> <i>High income (+6.6%)</i>	Not reported	Not reported
Sandstrom, Brun 2017	Design: Secondary Analysis of Longitudinal Survey Data Sample size: ~55.8 million Population: MSK	Higher income had higher odds; <i>Adjusted analysis:</i> <i>Poverty category: OR=1.07021, std error=0.0363211, T=2.00, p=0.046, 95%CI= 1.001158-1.44026</i>	Those with insurance coverage has higher odds; <i>Adjusted analysis:</i> <i>Insurance coverage:</i> <i>OR=0.6259903, std error=0.0540293, T=-2.92, p=0.004, 95%CI=0.726249-0.9393005;</i> <i>OR&lt;1 means greater likelihood because coding of insurance variables set the lower values of</i>	Not reported

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			<i>the variable with having insurance.</i>	
Sandstrom 2019	Design: Secondary Analysis of Longitudinal Survey Data Sample size: ~58.5 million Population: unspecified	Low income people saw the greatest increase in utilization of physical therapy services <i>Poor</i> =+55% <i>Near poor</i> = +21% <i>Low income</i> =+104% <i>Middle income</i> =+60% <i>high income</i> = NA	Although Medicaid beneficiaries saw an increase in utilization of physical therapy services, non-beneficiaries still saw a greater increase; <i>Year</i> (OR=1.12; SE=0.056; t=2.33; 95% CI=1.02-1.24) <i>Medicaid</i> (OR=0.56; SE=0.046; t=-6.94; 95% CI=0.475-0.661) <i>Year X Medicaid</i> (OR=1.27; SE=0.136; t=2.09) 95% CI=1.01-1.59) <i>Constant</i> (OR=0.0462; SE=0.002; t=-81.18; 95% CI (0.43-0.050)  <i>Medicaid Beneficiaries</i> = +15% <i>Ambulatory therapy patients</i> = +61% <i>% of Medicaid population with an ambulatory therapy visit</i> = +41%"	Not reported

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<u>Tsuchiya-Ito</u> (2020)	Design: Secondary Analysis of Longitudinal Survey Data Sample size: 3,770 Population: unspecified	Low income less likely; <i>Adjusted Analysis:</i> <i>Middle/High income: reference;</i> <i>Low income: OR=0.813, 95%CI= 0.670-0.987, p=0.036</i>	Not reported	Not reported
Washington 2011	Design: cross- sectional study Sample size: 104 Population: MSK	Not reported	Medicare had lesser odds than Private insurance; <i>Unadjusted analysis:</i> <i>Private Insurance (OR=1)</i> <i>Medicare (OR=0.08, 95CI=0.01-0.65, p=.02);</i> <i>Non/Medicaid: (OR=1.35, 95CI=0.36-5.09, p=.7)</i> <i>Adjusted analysis:</i> <i>Private Insurance (OR=1)</i> <i>Medicare (OR=0.12, 95CI=0.01-0.72, p=.04);</i> <i>Non/Medicaid: (OR=0.70, 95CI=0.13-3.54, p=.7)</i>	Not reported

PT= Physical Therapy, MD= Medical Doctor, DC= Chiropractor



