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SOCIAL DETERMINANTS ASSOCIATED WITH PAEDIATRIC BURN INJURY: A POPULATION BASED, CASE-CONTROL STUDY

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Background:

Children are disproportionately represented as victims of burn injury. Life-long sequelae manifest as increased rates of mental and physical illness, substance abuse, and suicide. Social Determinants of Health (SDoH) are known to influence risk of injury, however the extent and influence of SDoH on burn injury is less clear.

Objective:

A retrospective case-control study was conducted to assess the influence of a broad range of social determinants on burn injury in children.

Methods:

Children (<17 years of age) admitted to a Canadian regional burn centre between January 1, 1999 and March 30, 2017 were matched based on age, sex and geographic location 1:5 with an uninjured cohort. Population level administrative data describing the SDoH, at the Manitoba Center for Health Policy, were compared between cohorts. Thirteen SDoH were chosen based on a published systematic review conducted by the research team.

Results:

No significant differences existed in descriptive statistics between the burn and control cohorts. Mean age at burn injury = 5.46 (\pm 5.23), average TBSA (%) = 10.5 (\pm 13.4). The most common mechanism of burn was scald (42.03%).

Upon multivariable logistic regression, children: from a low income household (O.R. 1.97 (1.46, 2.65)); in foster care (O.R. 1.57 (1.11, 2.21)); from a family that received income assistance (O.R. 1.71 (1.33, 2.19)); or born to a teen mother (O.R. 1.43 (1.13, 1.81)) were significantly associated with an increased risk of burn injury in Manitoba.

Conclusion:

This study identified SDoH that are associated with an increased risk of burn injury. Children: from a low-income household; in foster care; from a family that received income assistance; or born to a teen mother are at an elevated risk of burn injury. Identifying children at increased

potential risk has merit in preventing life-long burn injuries and maximizing the efficiency of a prevention budget through targeted burn safety programs.

Table 1: Knowledge test results

	Number of participants	Exam Score (x/36) Mean \pm SD	p-value
Pre-ASK (time0)	32	19.6 \pm 3.9	--
Immediately post ASK (time1)	32	29.9 \pm 3.2	<0.001
6 months post ASK (time2)	21	26.7 \pm 4.5	<0.001 (vs. time0) 0.02 (vs. time1)
Non-ASK residents	8	22.7 \pm 7.1	0.02 (vs. time1) 0.17 (vs. time2)