

Homelessness & Traumatic Brain Injury

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Background

- ▶ UK statistics indicate a 16% rise in rough-sleeping from 2015 to 2016 with 4,134 people counted as sleeping outdoors - 132% rise since annual counts commenced in 2010.
- ▶ Higher levels of cognitive impairment than the general population (Spence et al., 2004).
- ▶ Cognitive difficulties can interfere with person's ability to gain employment, manage a household, maintain relationships - and escape homelessness?
- ▶ Why a higher rate in those experiencing homelessness?

Review TBI & Homelessness (Topolovec-vranic et al., 2012)

- ▶ 8 Studies exploring TBI and homelessness
- ▶ TBI prevalence - between 8% and 53%
- ▶ Lack of information on setting, demographics, small sample sizes, mainly adult males.
- ▶ Lack of validated brain injury screening tools.
- ▶ Absence of qualitative studies in the literature.

Aims of Review?

- ▶ Update the literature by exploring the following questions:
 - ▶ What is the rate of TBI amongst the homeless population?
 - ▶ What are the factors involved in this relationship?
- ▶ Continue to highlight this issue in light of growing problem of homelessness.

Method

- ▶ Three major Databases searched:
 - ▶ PsycINFO, Pubmed, and Academic Search Complete
- ▶ Eligibility Criteria
 - ▶ Peer-reviewed Studies published since the last review
 - ▶ English language
 - ▶ A sample of individuals experiencing both homelessness & traumatic brain injury.
- ▶ Search completed May 1st 2016
- ▶ 9 articles met criteria

Study Strength

Study	Selection	Comparability	Outcome	STROBE
Mackelprang et al., 2014 [39]	**		**	16
McMillan et al., 2014 [34]	**		***	15
Andersen et al., 2014 [35]	****	**	**	21
				17
Topolovec-Vranic et al., 2014 [36]	***		**	
To et al., 2015+ [38]	**		*	17
Svoboda & Ramsay 2013+ [40]	***		***	17
Russell et al., 2013 [32]	**		**	10
Barnes et al., 2015 [31]	***	**	**	16
				17
Stergiopoulos et al., 2015 [37]	**		**	

The Newcastle Ottawa Scale (for cross-sectional studies) (2003) evaluated methodological quality of studies. The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement was used to assess the quality of reporting

Study Details

Study	Type of Study & Setting	Sample size (% female), mean age in years (Standard Deviation), (% White)	Rate of TBI
Andersen et al. (2014) [35]	Cross-sectional study. Long-term care unit in urban homeless shelter in Canada.	n=34 (0%), 58.8 yrs. (9.7), 82.4% white	54%
To et al., (2015) [38]	Cohort study with 1 year follow up assessment. Shelters, meal programs and vulnerable housing in three Canadian cities	n=1181 (32.4%), 43 yrs. (14), 62.5% white	61%
Topolovec-Vranic et al., (2014) [36]	Cross-sectional study. Shelters and harm reduction/long-term unit in Toronto, Canada.	n=111 (0%), 54.2 (11.5), 76% white	45%
Svoboda & Ramsay (2013) [40]	Retrospective Cohort study. Homeless shelter, alcohol reduction programme and low income housing sites in Toronto, Canada.	n=169 (0%), 43.7 (12.1), NR	19%
Russell et al., (2013) [32]	Cross-sectional study. Two US Veteran Healthcare services.	n=800 (3.5%), 51.9 (9.8). NR	47%
Barnes et al., (2015) [31]	Cross-sectional study. Two US Veteran Healthcare services.	n=229 (4%), 51.8 (8.9), 35.37% white	90.4%
Stergiopoulos et al., (2015) [37]	Cross-sectional study. Multiple homeless services across five Canadian cities.	n=1500 (32%), 41.1 (10.9), 51% white 1% Transgender	46%
Mackelprang et al., 2014 [39]	Cross-sectional study. Shelters, streets, drop-in centres in Minnesota, USA.	n=2732 (63.3%), 21.8 (3.6), 37.9% white. 0.4% Transgender, 90.2% Straight	43%

TBI Characteristics

Study	Age at first Injury	1st TBI preceded homelessness	Lifetime history of TBI	Injury Severity (1 st or most severe)	Mechanisms of Injury
Andersen et al., (2014) [35]	NR	NR	50% = 3+ TBIs; 16.7% = 2+ TBIs.	58% moderate	NR
To et al., (2015) [38]	16 years old	NR	NR	NR	NR
Topolovec-Vranic et al., (2014) [36]	11.5 years old	87%	50% = 3+ TBIs	63% moderate; 31% severe	Assaults (66%), Sports/Recreation (44%), RTA (43%), Falls (42%).
Barnes et al., 2015) [31]	15 years old	83%	Median = 3 TBIs per participant	30.4 % moderate/severe	Assaults (33.8%), RTA (28%), Falls (14.5%), Sport (13%), Blasts (2.4%), Other (8.2%)
Mackelprang et al., (2014) [39]	15 years old	51%	NR	NR	
McMillan et al., (2014) [34]	NR	NR	44.9% = +1 TBI	NR	

Rate of TBI

- ▶ There was a wide range in TBI rates across studies, with a low of 13.5% and a high of 90.4%
- ▶ Highest rate was in a sample of US veterans seeking homeless services, which is a specific subsection of the homeless population.
- ▶ Lowest rate represents the percentage of homeless people who had an admission to hospital for a 'non-minimal head injury' in the previous year. Also using medical records, McMillan et al., 2014 reported a slightly higher rate of 13.5%. Again this includes only the TBIs resulting in a hospital admission.
- ▶ Excluding these three articles the remaining studies reported TBI rates between 43% and 61% using a variety of self-report measures.

Results

Assessing for TBI

- ▶ 4 studies - validated measures
 - ▶ The Brain Injury Screening Questionnaire (BISQ) [41] was employed twice, Ohio State University TBI Identification Method (OSU TBI-ID) [17] and Traumatic Brain Injury 4 (TBI-4) [32,42] were each used once.
- ▶ 2 studies - examined medical records
- ▶ 1 study - non-validated questionnaire
- ▶ 2 studies - single self-report questions
- ▶ A lack of information on the characteristics of participants' TBIs

Factors affecting TBI/Homelessness Link

- ▶ Risk factors for experiencing a TBI:
 - ▶ Male gender - risk-taking behaviour?
 - ▶ Being young - most reported in adolescence
 - ▶ White ethnicity - biases in sample demographics?
 - ▶ Seizure disorder - falls?
 - ▶ Substance misuse - link with assaults/falls?
 - ▶ Mental health difficulties - increase vulnerability
- ▶ TBI often occurred prior to experiencing homelessness
- ▶ History of TBI increased risk of further TBIs.
- ▶ Assaults reported as most common cause of TBI followed by sports/recreation and road traffic accidents.

Conclusions & Recommendations

- ▶ TBI seems to be a risk factor for homelessness - should be reflected in brain injury support.
- ▶ Consequences of a TBI such as cognitive difficulties can impact individual's ability to escape homelessness.
- ▶ Training those involved in supporting individuals at risk of homelessness should involve TBI.
- ▶ Brief but validated brain injury screening tools in homelessness and related services can identify affected individuals and inform support.
- ▶ Research includes validated screening tools, medical record review, cognitive assessment, and representative samples.
- ▶ Black and minority ethnic groups underrepresented in research as is the LGBT community despite over-represented in homelessness. Where reported they had increased risk (80%) of experiencing TBI compared to non-LGBT individuals. Greater efforts need to be made to ensure their experience reported.

Moving forward

- ▶ Increasing awareness of TBI in homelessness
 - ▶ 2012 review covered 125 years - 8 articles
 - ▶ 2012-2016 - 9 articles
 - ▶ 2016 - 2018 - 9 articles
- ▶ Currently updating review to include these studies.
- ▶ Recommendations of review reflected in studies
 - ▶ MRI, validated tools, medical record review, qualitative studies.

Questions?

I am happy to chat if you have any further thoughts or questions so feel free to drop me an email

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