

Traumatic Brain Injury Amongst Juvenile Offenders: An Investigation into Violent Offending, Intellectual Functioning, Substance Abuse and Psychological Distress

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Declarations**Statement of Originality**

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text. I give consent to the final version of my thesis being made available worldwide when deposited in the University's Digital Repository**, subject to the provisions of the Copyright Act 1968.

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Acknowledgement of Authorship and Collaboration

I hereby certify that the work embodied in this thesis contains a scholarly work of which I am a joint author. I have included as part of the thesis a written statement, endorsed by my supervisor, attesting to my contribution to the joint scholarly work.

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I am dedicating this work to my dad who very unexpectedly passed away in 2014. At the time I wanted to quit, but have kept on going in his honour.

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Structured Abstract

Scope. Traumatic brain injury (TBI) prevalence rates vary depending on the study. The definition of TBI for study inclusion and the criteria for characterising the severity of TBI also vary across studies, influencing prevalence and incidence rates.

There are many indicators of wide-spread disadvantage in offending populations, both in adults and juveniles. The subject of TBI has been researched comprehensively in the adult offending population with a high prevalence reported. TBI has been associated with increased rates of major mental illness, substance abuse, aggression and violence.

By contrast with TBI in adult offenders, the research on juvenile offenders regarding the prevalence and/or correlates of TBI is limited. Among juvenile offenders, a history of TBI predicted high-level psychosocial disadvantage and neuropsychiatric morbidity.

Purpose. The proposed study examines TBI in juvenile offenders in New South Wales, Australia. It expands on previous Australian studies by including subjects who have never been in custody, and this is likely to include individuals with less serious offending. We investigate the associations between a history of past TBI and violent offending as well as a range of important psychiatric, and other psychosocial characteristics in a population of young offenders. The proposed study will attempt to overcome the limitations of some of the previous work by having available official criminal records, the use of cognitive assessments, recording of cultural background and indigenous status, and the relatively large sample size of 800 Australian juvenile offenders.

Methodology. In the proposed study we used existing data derived from the NSW Young People on Community Orders Health Survey (YPoCOHS). Cross-sectional analyses were carried out on the data. The participants were gathered from all young people aged between 12 to 21 years on a supervised community order in New South Wales from October 2003 to December 2005. Study participants were administered a health questionnaire, a physical assessment and standardised psychological tests. They were questioned in relation to a history of TBI, and information on offending history was accessed through Juvenile Justice administrative records. The data which was available in SPSS were examined in particular comparing those with and without TBI, with respect to other exposures and outcomes (as below). Non-parametric correlations, cross tabulations, frequencies, Pearson Chi Square and ANOVA were used to analyse the data.

Results. Data were obtained from 802 young offenders, and it was found that of this sample, 307 had a history of TBI, (191 had 1 TBI, 116 had 2 or more TBIs). A history of TBI was associated with increased rates of mental illness, current psychological distress as indicated by scores on the K-10 and substance abuse. In addition, past TBI was associated with higher scores on the Child Trauma Questionnaire. However, there was no association of past TBI with violence of offending, despite TBI being associated with higher scores on an anger/violence proneness scale. TBI was also associated with physical abuse/neglect, and cultural status. Surprisingly, TBI was associated with better intellectual functioning.

General Conclusions and Implications. Within the public health sector, occurrence of a TBI, however mild, should lead to focused inquiries concerning the context for the injury, a history of previous injuries and of substance use. TBI in the adolescent population is an important public health issue. Knowledge that an offender

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has a history of TBI could be an easily obtained important predictor and can serve to flag the possibility that the individual may have experienced past psychosocial deprivation, and may be at increased risk of mental illness, substance abuse, and future TBI. Early recognition and intervention for adolescents with TBI may assist in reducing re-offending.

In offending populations specifically, screening instruments for TBI, crime type and difficulty with impulse control is important to characterise needs and to facilitate entry into enhanced rehabilitation programs. The design of interventions focussed on risk factor reduction and engagement with pro-social activities, increased assistance with impulse control and anger management has the potential for diverting individuals away from future self-destructive or criminal behaviours. This has potential benefits for the individual, their families and ultimately the general public.

Keywords: Traumatic Brain Injury, Juvenile Offenders, Violence, Substance Use, Mental Illness.