Neuropsychological Screening and Intervention: A Pilot Project Aimed at Identifying and Treating Traumatic Brain Injuries in the Offender Population

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Introduction

Traumatic brain injuries can lead to cognitive, behavioral, and emotional difficulties.

Previous research suggests that traumatic brain injuries are relatively elevated in offender populations.

- The rate of traumatic brain injuries within the general population is 12% (Frost, Farrer, Primosch, & Hedges, 2012).
- The rate increases to 60% (previous year) within the prison/county jail population (Williams, Mewse, Tonks, Mills, Burgess & Cordan, 2010) to 87% (lifetime; Slaughter, Fann, & Ehde, 2003).
- In the general population, 74% of injuries are categorized as mild and 26% are moderate to severe (CDC, 2003).
- In County Jail settings, 58% of injuries are mild and 29% are moderate to severe (Slaugher, Fann, & Ehde, 2003).

Neurocognitive impairment may be reflective of/exasperated by co-morbid conditions, such as substance abuse and mental illness.

- The prevalence of mental illness in a local jail setting is 64% vs. 74% in state corrections (Bureau of Justice Statistics, 2006).
- Research suggests that co-morbidity for TBI and substance abuse is greater than 60% (Corrigan, Lamb-Hart & Rust, 1995).
- This co-morbidity may be associated with greater rates of unemployment, criminal activity, depression, and overall lower subjective well-being (Sherer et al., 1999).

The purpose of this program was to identify the risk and develop programs to promote harm reduction (reduce violence, recidivism, substance abuse, stigma, mental illness, unemployment, etc.) within the most vulnerable and underserved population, a mentally ill offender population. This project implemented free neuropsychological and TBI screening in a population otherwise not served by those services.

Method

Participants:

Participants were recruited on a voluntary basis from the Denver County Jail. Neuropsychological screening evaluations were conducted on a group of inmates (N=36, 15 females, 21 males, ages 22-61 y.o.) housed in the mental health transitional unit of the Denver County Jail.

Procedure:

- Inmates were identified and consented to participate.
- Assessment meetings (2 hours): 07/08/2013 to 07/19/2013
  - Semi-Structured Clinical Interview
  - Neuropsychological Screening Test [NAB Screening Module (White & Stern, 2003) or ANAM Core Battery (Vista LifeSciences)]
  - OSU-TBI-ID (Corrigan & Bogner, 2007)
  - 3 Effort Tests (e.g. TOMM, VIP, TMT A:B, Rey 15 Item Test)
- Feedback meetings (1 hour): 08/05/2013 to 08/14/2013
  - Inmates received a single page summary of results.
  - Jail staff received a 2-page report and a copy of inmate summary.

Measures:

- The OSU-TBI-ID and neuropsychological screening tests were used to screen for gross cognitive deficits and history of traumatic brain injury.
- Effort tests were administered to establish consistency of performance.
  - Failure of 3 of 3 tests yielded 100% positive identification of simulated malingering (Meyers & Volbrecht, 2003).
  - Population base rates of effort test failure are 8-35% (Mittenberg et al., 2002).

Screening Study Findings

Results:

Results were consistent with previous studies of injury severity but reflect an all-time high for prevalence.

- 35 of 36 (97%) of the inmates had a history of TBI.
  - More than half of those injuries were moderate/severe.
- 34 of 36 (94%) of the inmates showed gross cognitive impairments on screening tests.

There was a substantial overlap between TBI history, substance abuse, and mental illness.

- 34 of 36 inmates (94%) had substance abuse histories.
- 33 of 36 inmates (92%) had psychiatric histories (e.g. diagnosis with major mental illness).
- 35 of 35 (100%) of TBI survivors had at least one co-morbid condition.
- 29 of those 35 TBI survivors (83%) displayed 'tri-morbidities' or history of TBI, mental illness, and substance abuse/dependence.
- 83% of this sample screens positive for a combination of mental illness, substance abuse, criminal history, and traumatic brain injury.

Efforts testing results were consistent with population base rates.

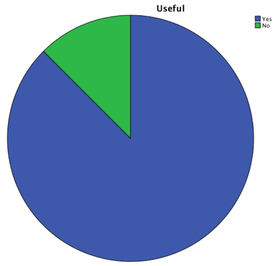
- 3 of 36 or 8% failed 3 of 3 tests of effort.

Conclusion:

Traumatic brain injury is a major, chronic, health condition within this offender population. The deficits noted here on screening evaluation include memory and attention deficits as well as impulsivity and poor verbal fluency. All of these deficits can be considered risks for recidivism and re-offense. The rate of TBI in this county jail population is very high, 97%, and is higher than other studies with offenders. In 94% of these injuries, there appear to be neuropsychological consequences on screening evaluation. Pre-morbid and co-existing issues (e.g. substance abuse, mental illness) may also contribute to deficits in functioning. Programming tailored to the needs of this population will be developed and recidivism rates tracked for one year to establish program efficacy.

Inmate Feedback:

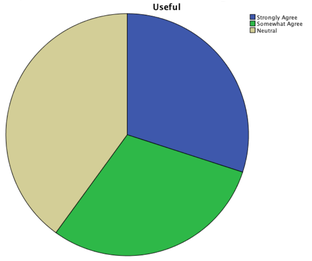
"Will the information you learned through the assessment be useful in your life upon community re-entry?"



"I would like more testing if possible! Thank you!"
"I do believe that it was very helpful for me because I could see things a lot differently."

Staff Feedback:

"Overall, I found the assessment report to be useful."



"Very useful tool."
"Even though this patient has been released, the feedback was interesting/helpful in rounding out my understanding of him."
"Nice to have an additional component in understanding this patient. Thanks!"

Intervention

Peer Support and Self-Advocacy Curriculum:

Inmates found to have a lifetime history of TBI with on-going impairments as indicated by screening tests with intact effort will be enrolled in a peer support and self-advocacy curriculum. This program is being developed and includes:

- educational overview of TBI
- understanding of how cognitive and affective function is impacted by TBI
- overview of strategies the inmate can use to be successful both within the jail and probation settings.

This curriculum will be developed in the coming year with state grant funding. Dr. McMillan and DU graduate students will take the lead on the development of this curriculum. Ms. Dettmer, Dr. Daugherty, and Dr. Gorgens will consult and the program will be piloted from Summer 2014 to Summer 2015.

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