

Supplementary Table 2. Study Characteristics and Risk of Bias Assessment

Study (Author, Year, Country)	Study Design & Objective	Sample Characteristics	TBI and MHSU Information		Integration Information				WHO Strategic Approach	Facilitator	Barrier	Risk of Bias Assessment
			TBI Severity/Time Since Injury (Mean ± SD, Years, Unless Specified)	Type of MHSU/Time Since Dx (Mean ± SD, Years, Unless Specified)	Activity	Description	Level	Type				
Ahmed et al., 2016 United States	Case Study  Integrated model of care to address physical, cognitive, and psychiatric needs among individuals w/TBI	N=1 - Gender: Man - Age [Year]: 31 at time of tx; 24 at time of TBI - Marital Status: Divorced - Education: GED	Severe/7 years	ADHD/ Elementary school; MDD/NR	Program	Program of Enhanced Psychiatric Services (PEP) (Outpatient psychiatric brain injury clinic) - Individual and gp psychotherapy + pharmacotherapy - Weekly multidisciplinary team meetings - Individualized tx plans - Family meetings	Meso	Service	1.1 1.4	- Integrating family members - Staff experienced in managing behavioural sx's from TBI	- Geographic distance b/t PEP and neurorehabilitation outpatient program	- Selection - Reporting - Information
Albrecht et al., 2017 United States	Qualitative  Explore perception of barriers and facilitators to dx and tx of MHSU after TBI	N=33 (10 HCP; 18 patients; 5 caregivers) - Gender [Men]: 83% Patients; 40% Caregivers; HCP NR	Mild-Severe/ 18 mos-5 years	Depression; Anxiety; PTSD/NR	Screening, Treatment	Dx and tx of MHSU after TBI	Meso	Clinical	4	- Positive and engaged caregiver support	- Lack of education about TBI and MHSU among patients, HCP, and caregivers - Lack of experience with TBI and MHSU among HCP --> reluctance to dx, which delays tx - polypharmacy --> complicates tx of TBI and MHSU - Limited access to care due to insurance, transportation, income, and availability of providers	N/A
Andrew et al., 2017 South Africa	Cohort  Incorporate questions re: cognition and MHSU sx's to TBI screening tool to identify patients for referral	N=47 - Sex [Males]: 94% - Age [Years]: 16 to 75; mean 35 - Employment [Unemployed]: 36% Pre-injury; 11% at time of study	Mild/moderate (N=11); Severe (N=32); Unknown (N=4)/NR	Depression; Anxiety; Hallucinations/NR	Screening	Screening for MHSU among individuals with TBI to improve referral and patient outcome	Meso	Clinical	4	- Interpreter and family/caregiver support	- Communication (due to language and education) --> lack of understanding of some questions - Cultural differences --> difficulty defining depression and personality change	N/A





Bay et al., 2017	Case Study	N=1 - Gender: Man - Age [Years]: 90 - Employment: Retired - Education: "Well-educated" - Marital Status: Widowed (following 73 year relationship/marriage)	NR/NR	Depression/Prior to TBI	Treatment	Case management with caregiver: - Case manager plans for natural support system, family education, crisis intervention for maintaining QOL; recommends sx management, reducing loneliness and depression, limiting health service use - Case manager with family to make changes at home and activities for within and outside of home	Micro	Clinical	1.1 4.1	- Knowledge of evidence-based practice, protocols, and pathways --> case manager communicate effectively w/interdisciplinary professional and others to engage in proactive patient advocacy	N/A	- Selection - Reporting - Information
Bédard et al., 2014	RCT	N=76 (38 Tx; 38 Control)	Tx: NR/4.5 ± 4.1	Depression/NR	Treatment	MBCT: - customized to address issues associated with TBI	Micro	Clinical	1.1	N/A	N/A	- Nondifferential misclassification - Selection - Attrition - Performance
Canada	Examine efficacy of MBCT for depression among individuals w/TBI	Tx: - Sex [Males]: 50% - Age [Mean ± SD, Years]: 47.1 ± 12.0 - Marital Status: Married/Common law (58%); Single (26%); Separated/Divorced/Widowed (13%); Unknown (3%) - Employment: Employed (37%); Unemployed (21%); Homemaker/Volunteer (11%); Retired (11%); Other (21%) - Education: Elementary (3%); Some Secondary (11%); Completed Secondary (32%); Some Post-Secondary (11%); Completed Post-Secondary (45%)  Control: - Sex [Males]: 60% - Age [Mean ± SD, Years]: 45.8 ± 14.8 - Marital Status: Married/Common law (45%); Single (31%); Separated/Divorced/Widowed (24%); Unknown (0%) - Employment: Employed (24%); Unemployed (26%); Homemaker/Volunteer (0%); Retired (16%); Other (34%) - Education: Elementary (5%); Some Secondary (11%); Completed Secondary (18%); Some Post-Secondary (16%); Completed Post-Secondary (50%)	Control: NR/4.0 ± 3.5									
Bombardier et al., 2017	RCT	N=100 (40 CBT-T; 18 CBT-IP; 42 UC)	CBT: "complicated, mild/moderate" (69%); Severe (31%)/3.41 ± 2.84	Depression/NR	Treatment	CBT-T and CBT-IP - adaptations to make protocol more accessible for people with cognitive impairment  UC: - Notified by phone of depression status and encouraged to continue using rehabilitation and primary care services - Free to self-refer to MHSU services outside of study - Local MH resources provided to patient	Micro	Clinical	1.1	N/A	N/A	- Selection - Nondifferential misclassification - Ascertainment - Recall
United States	Explore relationship between depression severity and cognition, behaviour, and physical activity among individuals w/TBI receiving tx for depression	CBT: - Sex [Males]: 59% - Age [Mean ± SD, Years]: 45.4 ± 14.1 - Race/ Ethnicity: Non-Hispanic White (90%) - Marital Status: Single/Never Married (31%); Married/Partnered (19%); Divorced (41%); Separated (5%); Widowed (2%); Other (2%) - Education: Some College (45%); Undergrad Degree (16%); Grad Degree (5%); Tech/Vocational (9%); High School Diploma (14%); ≤High School/GED (12%)  UC: - Sex [Males]: 69% - Age [ Mean ± SD, Years]: 46.3 ± 12.4 - Race/ Ethnicity: Non-Hispanic White (90%) - Marital Status: Single (29%); Married/Partnered (31%); Divorced (36%); Separated (5%) - Education: Some College (45%); Undergrad Degree (17%); Grad Degree (17%); Tech/Vocational (5%); High School Diploma (5%); ≤High School/GED (12%)	UC: "complicated, mild/moderate" (69%); Severe (31%)/3.21 ± 2.58	Other MHSU: Current Dysthymic (12%); Alcohol Abuse (10%); Substance Abuse (4%); hx of PTSD (18%)/NR								















Juengst et al., 2015	Before-After, No Control	N=20 - Sex [Males]: 60% - Age [Mean ± SD, Years]: 36.7 ± 12.4 - Race: 95% - Marital Status: Married (30%) - Education [Mean ± SD, Years]: 15.0 ± 2.3	*Complicated mild to severe TBI <sup>a</sup> / 5.2 ± 3.6	Depression; Anxiety/NR	Screening	iPerform (user-centred cross-platform smartphone application) for self-monitoring of depression and anxiety sx	Meso	Clinical	3.5	- Simplicity w/application interface and question content and style - Effective and efficient communication pathways b/t individuals and clinicians/researchers - Proper training	- Redundant and complex language - Alternating assessments (e.g., multiple scales for different questions, differing time frames of references for different questions) --> confusion	N/A
Jurick et al., 2020	RCT	N=100 - Age (Mean ± SD, Years): 34.4 ± 7.9 - Sex [Males]: 89% - Race: Caucasian (70%) - Education (Mean ± SD, Years): 13.7 ± 1.8	Mild, moderate/5.4 ± 3.5	PTSD/NR	Treatment	SMART-CPT: - All standard components and structures of CPT - Adaptations made to mTBI and cognitive complaints	Micro	Clinical	1.1	N/A	N/A	- Information - Performance - Attrition - Selection
Kaimal et al., 2019	Cross-sectional	N=204 Sex: N=204 Males N=12 Females (as reported in study)	N=57 Unknown; N=47 Mild; N=20 Moderate; N=1 Severe (as reported in study)/NR	PTSD/NR	Treatment	Long-term art therapy program in outpatient integrative medical care facility - Group and individual therapy	Meso	Clinical	1.1	N/A	N/A	- Information - Reporting - Selection - Low survey completion rate
Kip et al., 2019	Before-After, No Control	N=202 - Age [Mean ± SD, Years]: 43.0 ± 12.8 - Sex [Males]: 90.1% - Race: White (83.6%); Black (12.9%); Other (3.5%) - Education [Mean ± SD, Years]: 14.5 ± 2.7	Mild (N=48); Moderate/Severe (N=49)/NR	PTSD/NR	Treatment	Accelerated Resolution Therapy: - Relaxation and orientation - Imaginal exposure - Imagery rescripting - Assessment and closeout	Micro	Clinical	1.1	N/A	N/A	- Selection - Performance













Wolf et al., 2018	Before-After, No Control	N=44 - Sex [Males]: 93.2% - Age [Mean ± SD, Years]: 33.2 ± 7.34 - Ethnicity: Caucasian (70.5%); Hispanic (18.2%); African American (9.1%); Other (2.3%) - Marital Status: Married (50%); Single (38.6%); Separated/Divorced (11.4%)	Mild (65.9%); Moderate/Severe (34.1%)/ 4.42 ± 2.99	PTSD; Depression (88.6%); Other Anxiety (27.3%); Substance Abuse (29.5%); hx of Suicide (29.5%)/ NR	Treatment	Prolonged exposure - Modifications to accommodate TBI-related deficits	Micro	Clinical	1.1	- Modifications to accommodate TBI-related deficits - Compensatory devices to provide support and corrective instruction - "teach-back" method to ensure understanding of content and instructions - recorded sessions and patient handouts	N/A	- Selection - Performance - Reporting
United States	Examine generalization of the effectiveness of prolonged exposure therapy for PTSD in improving post-concussive sx's and other outcomes in military service members and veterans w/hx of mild to severe TBI											
Yount et al., 2013	Case Study	N=2 - Gender [Men]: 100%	NR/NR	PTSD/NR	Treatment	Training of service dogs for fellow veterans	Micro	Clinical	1.1	N/A	N/A	- Selection - Information - Reporting - Performance
United States	Demonstrate effects of service dog training as purpose-driven intervention on PTSD sx's and mTBI											
Zhang et al., 2017	RCT	N=36 (18 Intervention; 18 Control)	Mild-moderate/NR	Major depressive episode/NR	Treatment	Methylphenidate	Micro	Clinical	1.1	N/A	N/A	- Selection - Information
China	Compare effect of methylphenidate w/placebo in patients with TBI in China	Intervention: - Age [Mean ± SD, Years]: 36.3 ± 10.9 - Sex [Males]: 72.2% - Ethnicity: Han (66.7%); Hui (33.3%) - Education: Elementary School (22.2%); High School (44.4%); College/University (33.3%)  Control: - Age [Mean ± SD, Years]: 34.9 ± 12.1 - Sex [Males]: 77.8% - Ethnicity: Han (55.6%); Hui (44.4%) - Education: Elementary School (33.3%); High School (33.3%); College/University (33.3%)										

**ACT:** Acceptance and Commitment Therapy; **ADHD:** Attention deficit hyperactivity disorder; **B/t:** between; **CBT:** Cognitive behavioural therapy; **CBT-T:** Cognitive behavioural therapy - telephone; **CBT-IP:** Cognitive behavioural therapy - in person; **CPT:** Cognitive processing therapy; **Dx:** Diagnosis; **ED:** Emergency department; **GCS:** Glasgow Coma Scale; **Gp:** Group; **HCP:** Healthcare professional; **Hx:** History; **IC:** Integrated care; **LOC:** Loss of consciousness; **LT:** Long-term; **MCBT:** Mindfulness based cognitive behavioural therapy; **MDD:** Major depressive disorder; **MH:** Mental health; **MHSU:** Mental health and/or substance use; **Mos:** Months; **mTBI:** Mild traumatic brain injury; **N/A:** Not applicable; **NR:** Not reported; **OCD:** Obsessive compulsive disorder; **OSU-OT:** Occupational therapy; **TBI-ID:** Ohio State University Traumatic Brain Injury Identification Method; **PT:** Physiotherapy; **PTSD:** Post-traumatic stress disorder; **QoL:** Quality of life; **rTMS:** Repetitive transcranial magnetic stimulation; **RCT:** Randomized controlled trials; **SD:** Standard deviation; **SLP:** Speech language pathology; **SPT:** Supportive psychotherapy; **SUD:** Substance use disorder; **Sxs:** Symptoms; **TBI:** Traumatic brain injury; **UC:** Usual care; **Tx:** Treatment; **W/:** With