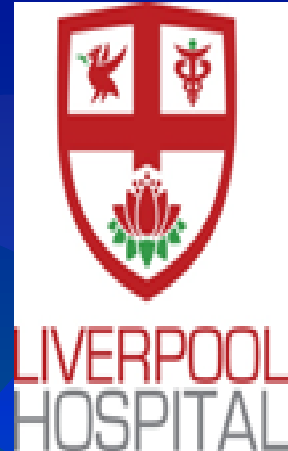


DOES THE WINDOW TO HOPE PROGRAM REDUCE SUICIDE RISK AFTER MODERATE-SEVERE TBI? A POOLED DATA ANALYSIS



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A 20 YEAR VOYAGE

Treat SI and hopelessness

Masters: Documented features of 8 LBIRU clients who died by suicide

PhD Prospective study of SI, hopelessness, and suicide attempts

ECR F'ship Intervention study

Literature reviews (x2)
Training in suicide prevention
Guideline development for GPs

Practice Protocol

Completed Suicide after Traumatic Brain Injury

Suicide ideation and behaviors after traumatic brain injury (TBI) pose a dire, albeit infrequent, clinical emergency. The literature on suicide after TBI is sparse, but that on suicide in the general population may have limited applicability. Persons with TBI frequently experience impairments and disabilities that introduce additional complexities to the management of suicidality in this population. The current study examines in detail the premorbid psychosocial variables, injury details, and posttraumatic sequelae of eight completed suicides after TBI. The eight suicides were among 50 deaths occurring in 896 admissions to a regional brain injury rehabilitation service over a period of 18 years. The most notable feature of the group was the presence of psychiatric and emotional symptomatology in most cases, superimposed on a range of neuropsychological impairments. This combination imposed major limitations on the subjects' psychosocial reintegration, and we propose that it was in this context that they were vulnerable to suicide. The article concludes with recommendations for clinical management of people who exhibit suicide ideation or make suicide attempts after TBI. Key words: *disability, neuropsychological impairment, suicide, traumatic brain injury*

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SUICIDE after traumatic brain injury (TBI) has been described as "the end point of an unsuccessful adaptation process."^{1,2,3,4} In the general population completed suicide has a low incidence: Australian figures for both occurrence and gender bias are comparable to those of other developed countries—that is, in the order of 25 per 100,000 population

ORIGINAL ARTICLES

Clinical Features of Suicide Attempts After Traumatic Brain Injury

Grahame Simpson, PhD,* and Robyn Tate, PhD†

Psychological Medicine, 2002, 32, 687–697. © 2002 Cambridge University Press
DOI: 10.1017/S0033291702005561 Printed in the United Kingdom

Suicidality after traumatic brain injury: demographic, injury and clinical correlates

GRAHAME SIMPSON¹ AND ROBYN TATE

From the Brain Injury Rehabilitation Unit, Liverpool Hospital and Rehabilitation Studies Unit, Department of Medicine, University of Sydney and Royal Rehabilitation Centre, Sydney, NSW, Australia

CLINICAL UPDATE

Preventing suicide after traumatic brain injury: implications for general practice

Grahame K Simpson and Robyn I Tate

Brain Injury, December 2007; 21(13–14): 1335–1351

informa
healthcare

REVIEW

Suicidality in people surviving a traumatic brain injury: Prevalence, risk factors and implications for clinical management

GRAHAME SIMPSON^{1,2} & ROBYN TATE^{2,3}

Research Trends

Suicide Prevention Training Outside the Mental Health Service System

Evaluation of a State-Wide Program in Australia for Rehabilitation and Disability Staff in the Field of Traumatic Brain Injury

Grahame Simpson¹, Bernie Franke², and Lauren Gillett³

TBI AND ELEVATED RISK OF SUICIDALITY

Suicide

1.5 to 4.0 (SMR) elevated risk of suicide after TBI

(Teasdale & Engberg, 2001; Ventura et al, 2010; Brenner et al, 2011; Harrison-Felix et al, 2012; Fazell et al, 2014; Spitz et al, 2015; Madsen et al 2018)

Suicide ideation

1.6 (AOR) elevated risk of SI (Anstey et al, 2004; Ilie et al, 2014)

Clinical studies find rates of SI between 6% and 28%

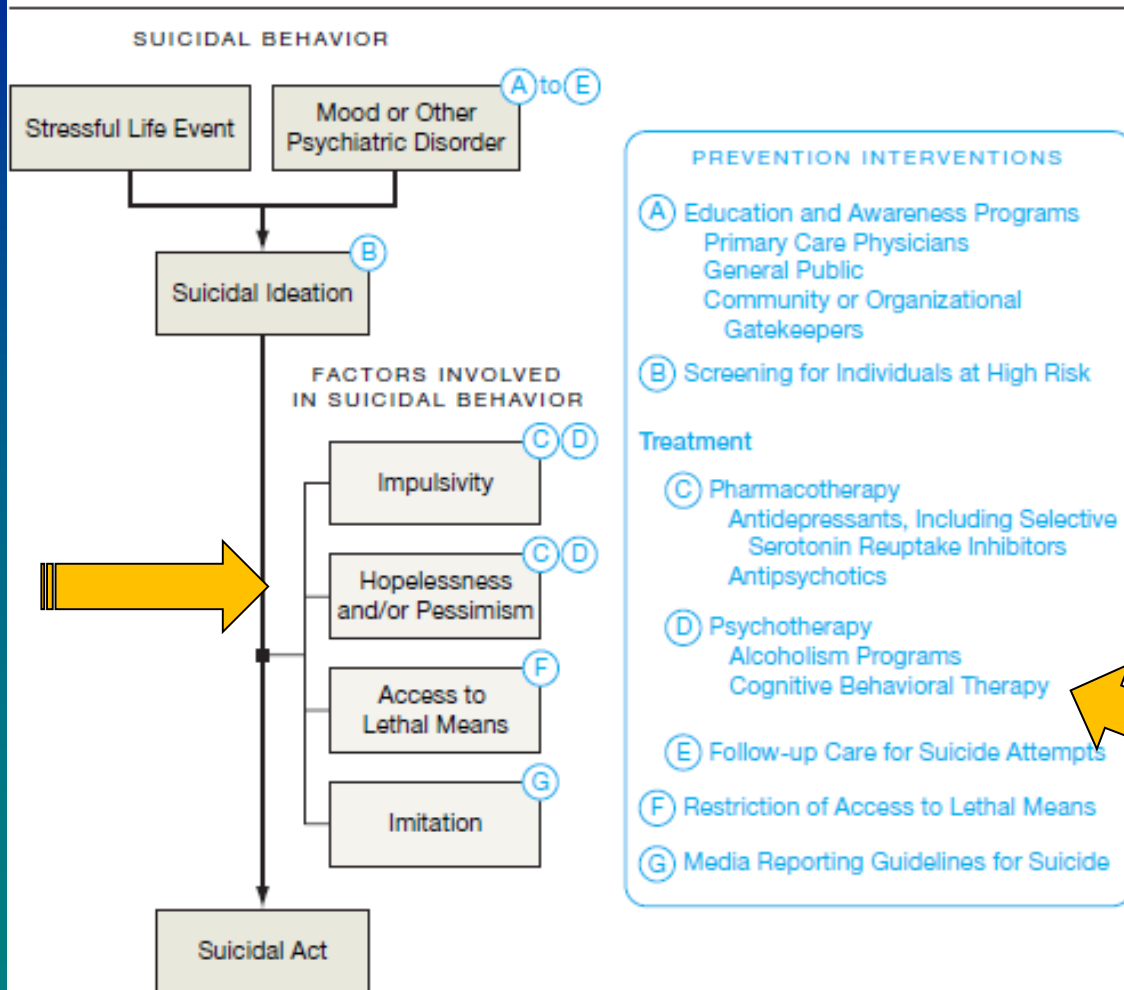
(Jorge et al 1993; Sliwinski et al 1998; Simpson & Tate, 2002; Seel & Kreutzer, 2003; Wood et al 2010; Tsaousides et al, 2011; Gradus et al, 2015; Bethune et al 2017; Fisher et al 2017)

Longitudinal study found 25% cumulative prevalence of SI

Mackelprang et al 2014

TARGETS OF SUICIDE PREVENTION

Figure. Targets of Suicide Prevention Interventions



Circled letters refer to relevant prevention interventions listed on right.

Suicide Prevention Strategies A Systematic Review

J. John Mann, MD
 Alan Apter, MD
 Jose Bertolote, MD
 Annette Beautrais, PhD
 Dianne Currier, PhD
 Ann Haas, PhD
 Ulrich Hegerl, MD
 Jouko Lonnqvist, MD
 Kevin Malone, MD
 Andrej Marusic, MD, PhD
 Lars Mehlum, MD
 Guyane Butler, MD

Context In 2002, an estimated 877 000 lives were lost worldwide through suicide. Some developed nations have implemented national suicide prevention plans. Although these plans generally propose multiple interventions, their effectiveness is rarely evaluated.

Objectives To examine evidence for the effectiveness of specific suicide-preventive interventions and to make recommendations for future prevention programs and research.

Data Sources and Study Selection Relevant publications were identified via electronic searches of MEDLINE, the Cochrane Library, and PsycINFO databases using multiple search terms related to suicide prevention. Studies, published between 1966 and June 2005, included those that evaluated preventative interventions in major domains; education and awareness for the general public and for professionals; screening tools for at-risk individuals; treatment of psychiatric disorders; restricting access to lethal means; and responsible media reporting of suicide.

Data Extraction Publications extracted for review were assessed for relevance to the study objectives.

Mann et al, JAMA 2005

Hopelessness is a strategic target to interrupt escalation from suicide ideation to suicidal act.

CBT is a recommended therapeutic modality to treat hopelessness

EMPIRICAL SUPPORT FOR LINK BETWEEN HOPELESSNESS AFTER TBI

Hopelessness is a predictor of SI

- high hopeless 8.7 (95%CI 3.48-21.72) more likely to be associated with presence of SI compared to low levels of hopelessness (Simpson & Tate, 2002)

SI is a significant predictor of post-injury suicide attempts (Simpson & Tate, 2002)

WINDOW to HOPE



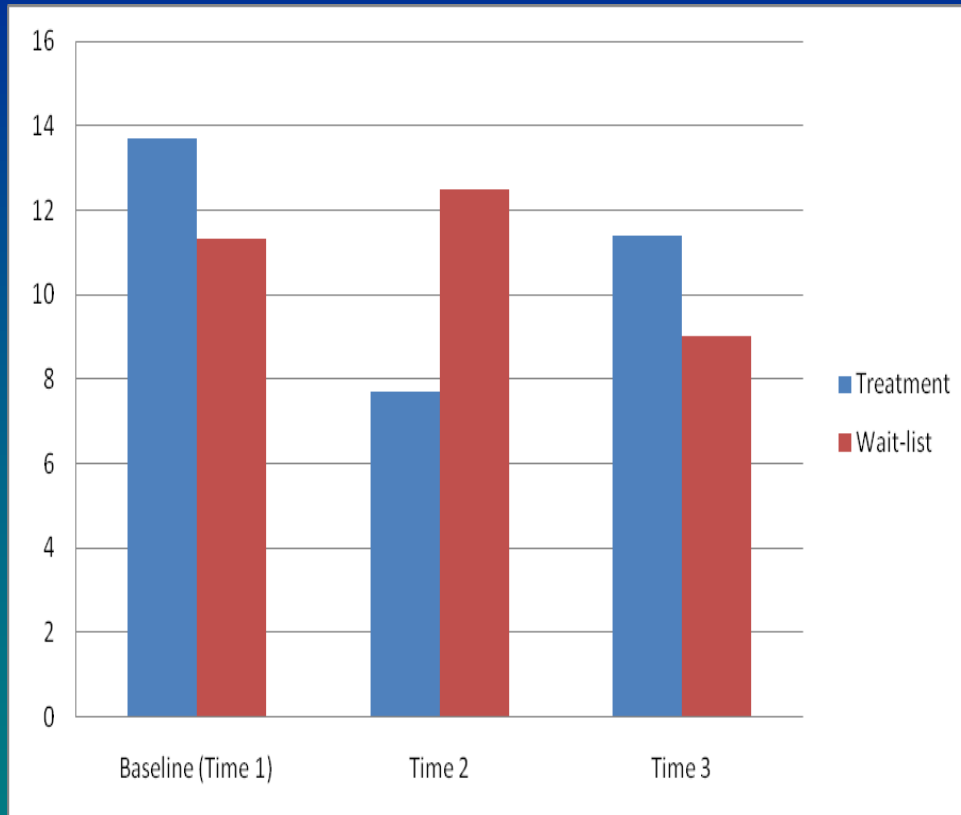
- Central metaphor Window of Hope
- 20 hour (10 session) group-based psychological intervention
- Based on combination of CBT principles (Khan-Bourne & Brown, 2003) and Post-traumatic growth (Tedeschi, 2005)
- Adapted to severe TBI using a range of strategies to compensate for neurobehavioural impairments and activity limitations (Khan-Bourne & Brown, 2003; Gallagher et al, 2016)

TABLE 1 *Window to Hope session topics*

Session	Therapeutic principle	Goals
1. Getting started	Group formation	Group participants meet, introduce program theme
2. Living a positive lifestyle	Behavioral activation	Examine relationship between affect and lifestyle factors
3. Thoughts and feelings	Socialization to CBT	Learn about the relationship between thoughts and feelings
4,5. Take another look	Cognitive restructuring	How cognitive restructuring can ameliorate distress
6,7. Problem-solving	Problem-solving	To develop a systematic approach to solving problems
8. Problem-solving and recovery	Compensatory techniques	To develop skills to facilitate adjustment to the extent of postinjury recovery
9. Building hope	Relapse prevention: posttraumatic growth	To identify means of building hope after TBI, self-esteem
10. Building hope	Relapse prevention: posttraumatic growth	Making meaning of TBI, positive expectancy, and building connections

Abbreviations: CBT, cognitive-behavioral therapy; TBI, traumatic brain injury.

HOPELESSNESS PRE and POST T'X



- Aged 18-65 yrs
- Severe injury, PTA > 1day
- > 1 year post-injury
- BHS greater or equal to 9
- Treat (n=8) vs wait-list (n=9)
- WtoH effective in reducing hopelessness
- Effect size approx d=1
- Clinically significant change
- Change sustained at 3 month follow-up

$F_{(1,15)}=13.20, p=0.002$

Simpson et al JHTR 2011

WINDOW TO HOPE: A REPLICATION STUDY

Treat

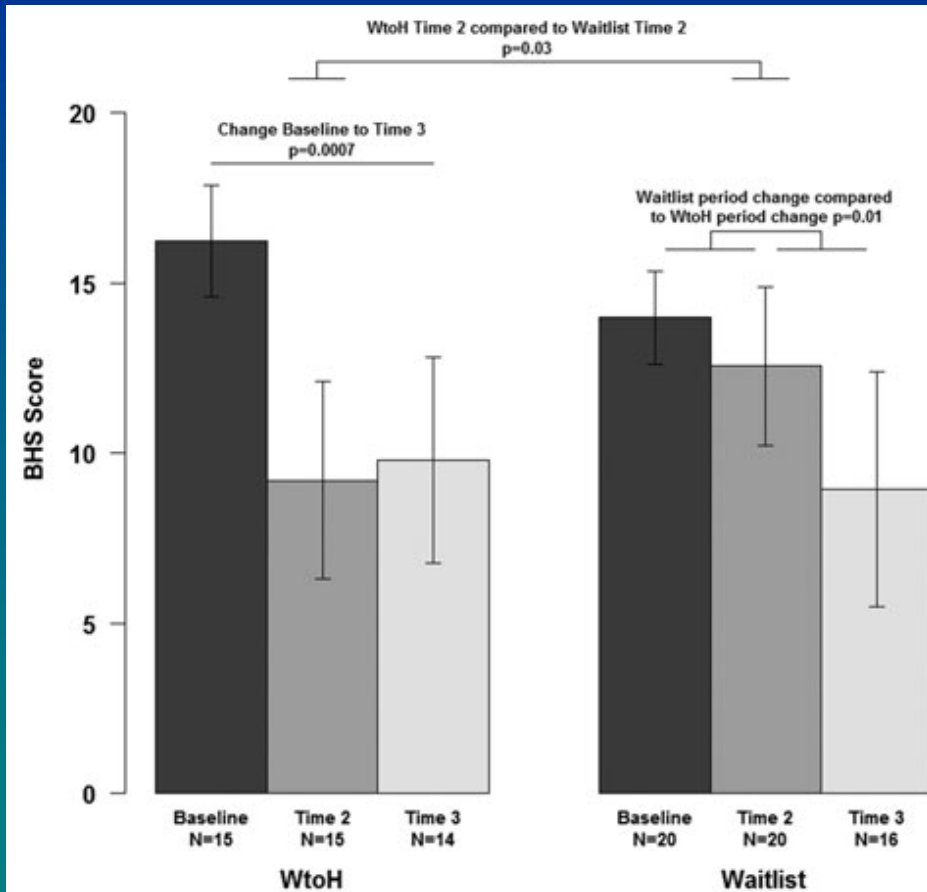


Adaptation to the US military setting Matarazzo et al 2013

Treat (n=15) vs wait-list (n=20)

Higher levels of background psychiatric conditions including PTSD

Controlling for baseline scores, WtoH effective at reducing hopelessness at T2



RATIONALE and AIM

Both studies found significant improvement in the primary outcome of hopelessness but only trends for improvement in some secondary outcome measures

To pool the data from the two trials to ascertain whether increased power on the outcomes for the secondary measures of suicide ideation and depression

CHARACTERISTICS OF AGGREGATED SAMPLE

Variables	Initially allocated to Waitlist (n=29)	Initially allocated to WtoH (n=23)	Exact Wilcoxon p-value
Age at Interview	51.3 (10.8) 55 (29, 65)	44.8 (12.6) 48 (21, 64)	0.05
Gender			
Male	27 (93%)	21 (91%)	0.77*
Female	2 (7%)	1 (4%)	
Transgender	0 (0%)	1 (4%)	
BHS	12.8 (3.7) 12.5 (4, 20)	15.3 (3.3) 16.5 (9, 20)	0.02
BSS*	5.96 (6.3) 3 (0, 18)	6.29 (7.9) 2 (0,32)	0.91
BDI Fast screen (items 1, 2, 3, 4, 7, 8, 9)	9.31 (3.6) 8 (3, 19)	11.1 (3.7) 10 (5, 18)	0.08
Depression Categories*			
Normal/Minimal	3 (10%)	1 (4%)	0.28
Mild	5 (17%)	5 (23%)	
Moderate	11 (38%)	4 (17%)	
Severe	10 (34%)	13 (57%)	

Data from the initial WtoH (N=17) and replication trials (N=35)

WINDOW TO HOPE: POOLED DATA (n=52)



Did WtoH have any effects on secondary outcomes of suicide ideation and depression?

Outcome	Model F-value, p-value	R ²	Initially allocated to waitlist (N=29)	Initially allocated to WtoH (N=21)	Estimated difference in time 2 means	p-value for difference
BHS	F=5.23, p=0.003	0.25	12.5 (10.7, 14.3)	9.05 (6.89, 11.2)	3.47 (0.51, 6.43)	p=0.02
BSS	F=10.78, p<0.0001	0.44	6.77 (4.61, 8.94)	2.80 (0.20, 5.40)	3.98 (0.52, 7.44)	p=0.03
BDI Fast-Screen	F=3.00, p=0.04	0.16	9.59 (8.11, 11.1)	7.28 (5.53, 9.04)	2.30 (-0.05, 4.66)	p=0.05

IN CONCLUSION

- **Enabling people to find a pathway out of chronic hopelessness**
- **Replication strengthens the evidence for the efficacy of Window to Hope**
- **The reduction in SI means that Window to Hope is a promising clinical resource to be able to deploy in the fight against suicide after TBI**
- **Translation funding has been obtained and a project training NSW-based psychologists in the delivery of WtoH will commence mid-year.**

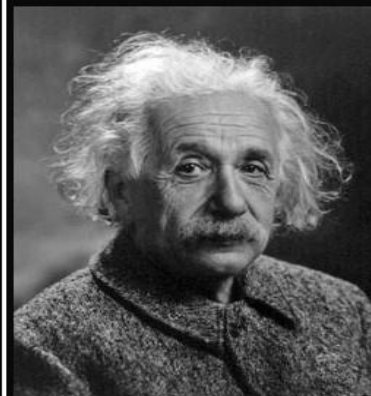
THANK YOU

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"There are no stupid questions, so let's also agree there are no stupid answers."



If we knew what it was we were doing, it would not be called research, would it?

(Albert Einstein)

izquotes.com