Table SI. *Description of study interventions and outcomes*

Study	Technology	Description	Intervention hours/No. of contacts/Time to follow-up	Control	Outcome measures	Results
Randomized controlled trials						
Bell et al., 2004 (21)	Telephone	Motivational interviewing, counselling and education supplemented by written notes and resources mailed to families	7 contacts of 30–45 mins; 2 weeks – 9 months post-discharge; Follow-up at one year post-injury	Usual care	Process measures only	Median of 4.5 contacts with caregivers, 30 mins duration
Bell et al., 2005 (22)					*Person with TBI:* FIM instrument, Disability Rating Scale, Community Integration Questionnaire, Neurobehavioral Functioning Inventory, Functional Status Examination, Glasgow Outcome Scale–Extended, Medical Outcomes Study 36-Item Short-Form Health Survey, Brief Symptom Inventory, EuroQol, and Modified Perceived Quality of Life scale	Composite outcome of measures: Rx > Ctrl ($p=0.002$). Individual measures: EuroQol – Rx > Ctrl ($p=0.008$) PQOL – Rx > Ctrl ($p=0.004$) BSI – Rx > Ctrl ($p=0.005$) *Subgroup analysis:* For white non-Hispanics Rx > Ctrl For Hispanics and non-whites Ctrl > Rx
Bell et al., 2011 (23)	Telephone	Counselling focussing on personal autonomy, problem solving, goal setting and providing information on TBI	11 contacts; 2 weeks – 21 months post-discharge; Follow-up at one year and two years post-injury	Usual care	*Person with TBI:* FIM instrument, Disability Rating Scale, Participation with Recombined Tools – Objective, Glasgow Outcome Scale–Extended, EuroQol, Short form-12 Health Survey, Brief Symptom Inventory – 18, Modified Perceived Quality of Life scale, Employment status	Composite outcome n.s. at one year or two years follow-up Individual measures n.s. at one year or two years follow-up *Subgroup analysis:* By ethnicity n.s.
Salazar et al., 2000 (24)	Telephone	Fostering self-direction, supporting coping in adjustment to TBI, assisting patient and family in problem-solving	Weekly contact for 8 weeks; Follow-up at one year post-treatment	8 week intensive inpatient cognitive rehabilitation program	*Person with TBI:* Return to work, Fitness for duty, Katz adjustment subscores, General measures of cognitive and psychological function Process Measures: Cost estimation	Return to work: Rx=Ctrl (n.s.); Fitness for duty: Rx=Ctrl (n.s.); Cognitive, psychological, adjustment measures: n.s. Costs: Rx=USD 504, Ctrl=USD 51840
Warden et al., 2000 (25)					Process measures only	Fit for duty vs not fit for duty in telephone intervention group: n.s. difference in compliance with program

Wade et al., 2006 (26)	Self-guided web sessions and video-conferencing	Problem-solving, communication and behaviour management	8–12 online sessions and accompanying weekly to fortnightly videoconferences; Follow-up after completion of intervention	Access to a home page of brain injury resources and a directory of links	*Child with TBI:* Child Behaviour Checklist, Home and Community Social Behaviour Scale	HCSBS Self-Mgt/Compliance: Rx > Ctrl ($p<0.05$, $\eta2=.11$); HCSBS Total (ITT analysis): Rx > Ctrl ($p=0.04$) Other measures n.s. *Regression analysis:* CBCL for lower SES families Rx > Ctrl
Wade et al., 2006 (27)					*Parent:* Social Problem Solving Index, Symptom Checklist-90-R, Center for Epidemiological Studies Depression Scale, Anxiety inventory	All parents would recommend program. 33% would prefer to meet in person. SPSI: Rx=Ctrl (n.s.) SCL-90-R: Rx>Ctrl ($p<0.05$, $\eta2=0.16$); CES-D: Rx>Ctrl ($p<0.05$, $\eta2=0.16$); AI: Rx>Ctrl ($p<0.05$, $\eta2=.11$) *Regression analysis by SES:* n.s.
Carey et al., 2008 (28)					*Parent:* Center for Epidemiological Studies Depression Scale, Anxiety inventory	Rx grp: 14 parents with technology experience, 6 parents without. CES-D: Tech users > Non-tech users ($p=0.017$) AI: Tech users > Non-tech users ($p=0.006$) No. of missed sessions: Tech users missed fewer than non-tech users ($p=0.026$)
Wade et al., 2008 (29)	Self-guided web sessions and video-conferencing	Problem-solving, communication and behaviour management. The website had audio functionality for the text to be read aloud	10–14 online sessions and accompanying weekly videoconferences; Follow-up after completion of intervention	As for the intervention group, but without audio functionality for the website text to be read aloud	*Family:* Conflict Behavior Questionnaire, Issues Checklist, Issues Severity Scales *Child with TBI:* Child Behaviour Checklist, Behaviour Rating Inventory of Executive Function, Children's Depression Inventory *Parent:* Symptom Checklist-90R, Center for Epidemiological Studies Depression Scale	Pre vs post (all participants). CBQ: Post > Pre ($p=0.04$, $d=0.74$) No. of issues: Post > Pre ($p=0.01$, $d=0.92$) Issue severity: Post > Pre ($p=0.01$, $d=1.45$) CBCL Internalizing: Post > Pre ($p=0.03$, d=0.58) CDI: Post>Pre ($p=0.02$, $d=0.75$) CES-D: Post > Pre ($p=0.01$, $d=0.8$) Other measures n.s. pre vs post Between-groups measures at post: n.s. differences
Wade et al., 2009 (30)					Process measures only	Positive results for ease of use and satisfaction with treatment 44% teens and 29% mothers would rather have met with the coach in person

Wade et al., 2010 (31)	Self-guided web sessions and video-conferencing	Training in stress management, problem solving, planning and organization, communication, and self- regulation	10–14 online sessions and accompanying weekly videoconferences; Follow-up after completion of intervention	Access to a home page of brain injury resources and a directory of links	*Child with TBI:* Behaviour Rating Inventory of Executive Function	BRIEF-GEC: Rx > Ctrl ($p < 0.05$, $\eta 2 = 0.31$) BRIEF-MI: Rx > Ctrl ($p < 0.01$, $\eta 2 = 0.41$) Regression analysis by family income: n.s.
Wade et al., 2011 (32)					*Family:* Interaction Behaviour Questionnaire *Child with TBI:* Child Behaviour Checklist (parent completed), Youth Self-Report (teen completed)	IBQ: results not reported CBCL: Rx > Ctrl ($p = 0.002$) YSR: n.s. Regression analysis by SES: CBCL Ext: Results more sig. for low SES ($p = 0.04$, $\eta 2 = 0.21$) YSR ext: Results more sig for high SES ($p = 0.01$, $\eta 2 = 0.34$)
Wade et al, 2011 (33)	Self-guided web sessions and video-conferencing	Web-based family problem-solving intervention involving self-guided education sessions and videoconferences with a counsellor	Not specified	Access to a home page of brain injury resources and a directory of links	*Teen with TBI:* Teen behavioural adjustment *Parent:* Caregiver depression	Does not state statistics Older teens had greater improvement in behavioural adjustment than younger teens. Greater improvement in caregiver depression where teens had higher levels of behaviour problems initially
Non-randomized controlled trials						
Brown et al., 1999 (34)	Tele-conferencing (group)	Information videos and discussion of topics identified by participants	9–10 sessions; Follow-up at last group session and 6 months after completion of intervention	Face-to-face group sessions	*Caregiver:* Profile of Mood States, Caregiver Burden Inventory *Family:* McMaster Model Family Assessment Device	Overall rating of satisfaction: Rx > Ctrl POMS: post > pre ($p < 0.001$); between group differences n.s. CBI: n.s. group by time interactions FAD: n.s. group by time interactions
Hauber et al., 2002 (35)	Video-conferencing	Reinforcing aspects of patient care, monitoring the patient for change and providing the family with emotional support	10–12 weekly visits after discharge; 20–45 mins; Follow-up varied across participants, between 3–18 months after discharge	No follow-up except caregiver initiated phone calls	*Person with TBI:* Living status, Functional status, Level of care, Number of emergency room visits, Number of hospital admissions *Family:* Family needs questionnaire	Descriptive stats Rx: 5/5 still living at home Ctrl: 3/4 still living at home Rx: 58% needs met. Ctrl: 50% needs met

Wade et al., 2004 (36)	Self-guided web sessions and video-conferencing	Content on problem-solving, communication and behaviour management. Program delivered using a Polycom ViaVideo webcam	7–11 online sessions and accompanying weekly videoconferences; Follow-up after completion of intervention	Same program using NetMeeting and an iBOT webcam. Smaller picture size and poorer audio and video quality than the Polycom ViaVideo webcam	Process measures and qualitative data only	*Overall:* Positive ratings for ease of use. 38% parents would prefer to meet face-to-face All parents would recommend program to others Qualitative interview: Positive reports of improvements in target behaviours Positive reports of strong therapeutic alliance with clinician. *Between-groups comparison:* Ease of use: Rx > Ctrl
Wade et al., 2005 (37)					*Child with TBI:* Home and Community Social Behaviour Scale, Behavior Rating Inventory of Executive Functioning, Children's Depression Inventory *Family:* Family Assessment Device, Interaction Behavior Questionnaire, Parent-Adolescent Relationship Questionnaire	HCSBS-AB: post > pre ($p<0.05$, effect size=0.82) PARQ-C: post > pre ($p<0.05$, effect size =1.03) Other measures pre vs post were n.s. No between-groups comparison
Wade et al., 2005 (38)					*Parent:* Symptom Checklist-90R, Center for Epidemiological Studies Depression Scale, Anxiety Inventory, Parenting Stress Inventory *Family:* Family Burden of Injury Interview	SCL-90-R: post > pre ($p<0.05$) CES-D: post > pre ($p<0.05$) AI: post = pre (n.s.) PSI: post > pre ($p<0.05$) FBII: post > pre ($p<0.01$)
Woods et al., 2011 (39)	Telephone	Signposts for Building Better Behaviour support via telephone	5 month period, no. of sessions not specified; Follow-up after completion of intervention and after 6 months	Signposts for Building Better Behaviour support face to face	*Family:* Family burden *Child with TBI:* Number of challenging behaviours *Parent:* Parental stress, Parental confidence, Parenting practices	No between-groups comparison reported All parents approved of the strategies taught Parents less stressed Parents more confident Less challenging behaviours Less dysfunctional parenting practices Less family stress Less family burden Treatment effects maintained at 6 months. (no statistics reported)

Case series studies					
Gilkey et al., 2009 (40)	Self-guided web sessions and video-conferencing	Content on problem-solving, communication and behaviour management	8–12 online sessions and accompanying weekly videoconferences; Follow-up after completion of intervention	Process measures only	Ease of use, helpfulness and satisfaction rated highly overall 42% parents rated videoconference as not at all or a little easy and 31% as not at all or a little helpful compared to a face-to-face meeting
Rotondi et al., 2005 (41)	Web resources (website and peer/expert forum)	Access to a website which provided information resources, online peer support and the possibility of submitting questions to an expert	Access to website for 6 months; Follow-up after completion of intervention	Process measures only	Peer support group was most frequently accessed module Mostly used for self-disclosure and providing personal support to others Support group was rated as most valuable component
Sander et al., 2009 (42)	Video-conferencing	Information and interactive problem-solving	Up to six sessions. 15–20 min. presentation on a topic and a problem solving discussion; Follow-up of satisfaction at completion of each session, follow-up of long-term utility at 18 months	*Caregiver:* Perceived utility ratings (completed after each session, and after 18 months)	High ratings for overall satisfaction and comfort. All participants reported gaining knowledge about TBI At 18 month follow-up, all participants reported using the information
Wade et al., 2009 (43)	Self-guided web sessions and video-conferencing	Program designed to promote positive parenting skills and improve caregiver stress management and coping. Sessions consisted of self-guided didactic information, video modelling skills and exercises.	5–24 sessions; Follow-up after completion of intervention	*Parent:* Dyadic Parent-Child Interaction Coding System-III (blinded ratings) *Child with TBI:* Eyberg Child Behavior Inventory	Positive ratings for ease of use and helpfulness. Some adherence problems reported related to flexible scheduling Total positive parenting behaviours: post > pre ($p<0.05$, d=1.72) Total problematic parenting behaviours: post > pre ($p<0.01$, d=3.03) ECBI: post = pre (n.s.)
Wade et al., 2011 (44)	Self-guided web sessions and video-conferencing	As in Wade et al., 2009 (43)	10–14 self-guided web sessions and accompanying videoconferences; Follow-up after completion of intervention	Process measures and a narrative of the authors experiences with implementing the intervention	Ease of use: 92% rated videoconferences as easy to use. 53% rated videoconferences as easy to use in comparison to a face-to-face visit Helpfulness: 85% rated videoconferences as helpful. 69% rated as helpful in comparison to a face-to-face visit

The notation "Rx > Ctrl" is used to denote that the result was more favourable for the intervention group than the control group, and "Post > Pre" to denote that the result was more favourable at post-testing than at pre-testing. The notation "n.s" is used to denote a non-significant result.
RCT: randomized controlled trial; TBI: traumatic brain injury; Rx: intervention group; Ctrl: control group.