ASSBI Newsletter

Australasian Society for the Study of Brain Impairment
March 2018
Issue 62
Working together to improve the lives of people with brain impairment

ASSBI

ASSBI COMMITTEES

EXECUTIVE

PUBLICATIONS

WORDS FROM YOUR PRESIDENT

I can't believe it's already March and the time for our first 2018 newsletter is here. For that matter I feel like I'm still adjusting to the idea of 2018! So luckily 2018 brings with it numerous exciting events and opportunities to connect with your ASSBI colleagues and share wisdom across lots of developing and new practice areas. Indeed, we start the year with an excellent workshop just around the time corner on 26 March. This full day workshop, sponsored by Shine Lawyers, brings together the expert knowledge of Associate Professor Carolina Bottari and Professor Sylvain Giroux from Canada. Their workshop is entitled *Real people, Real life: Evaluations, cognitive assistance and smart homes for adult individuals with moderate or severe TBI* and you can choose to attend in person in Sydney or through our live streaming option. (For further information: View Event Details).

This rapid flow of time also means that our 41st Brain Impairment Conference, 3-5 May, in Adelaide is almost here check it out. Yes the earlybird registration closes on April 1st – so don't be foolish and miss out. Working to reflect our conference theme, *Connecting and Collaborating in Rehabilitation,* Liz Williams and her conference team have assembled a stellar team of keynote speakers and produced a programme covering a broad range of interests and topic areas across multiple disciplines. I look forward to seeing you there and catching up in person.

You will have recently received an email reminding you about the ASSBI Early Clinical Innovation Award. This award is designed to recognise innovation in the field of brain impairment consistent with our mission to improve the lives of individuals and families affected by progressive and non-progressive neurological conditions across the lifespan. For the purposes of this award, an early career clinician is defined as someone who was awarded their highest level of qualification within the last 10 years (career disruptions such as maternity, sick or carer leave are also taken into consideration). So if you are a clinical innovator or know someone who is, we'd love to receive an application from you by 15 March (Click here to download an application form).

In closing, let me say I hope the year has had a good start for you all and continues in that vein (or better) through 2018.

Warmest wishes,
Jacinta Douglas, President

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If you have anything interesting you would like tweeted or mentioned on facebook, contact Lizzie via admin@assbi.com.au.

WEBSITE

Signing in whether you are a member or not will give you the opportunity to update your own information including your email address. Don't forget that you may be in there as most of you were transferred from the old database so if you want to change your email address login with your old email address or email Margaret to change it prior to you logging in.

We would like to collect stats such as your discipline and where you come from to get a better idea of our community.

If you are a member of ASSBI please sign in check your details and update your password. There is now a link where you can sign directly into the Brain Impairment page of Cambridge University Press.

When your membership is due you will receive a couple of reminder emails and you can renew and pay online by Visa, MasterCard and PayPal if you have an account. You can also transfer your fees via the bank or send a cheque.

If you have anything you wish to go on or have any feedback please email me at admin@assbi.com.au.
Margaret Eagers, Webmaster!

EXECUTIVE OFFICER'S REPORT

We have a great line-up of speakers, Workshops and How to Sessions for the Adelaide Conference so don't forget to register before the 1st April early bird deadline.
Cheers, Margaret Eagers, CEO

NEWS

CORPORATE PARTNERS

An update from our Corporate Partners, Shine Lawyers
LINK TO https://assbi.com.au/partners

PROFESSIONAL DEVELOPMENT

If you would like to see someone give a workshop in your State or know of anyone coming to Australia this year or in 2019 who would like to give a workshop or webinar for ASSBI members, please email Margaret and we will endeavour to organise a full/half day workshop or a one-hour webinar.

2017 Webinar Series
#assbiwebinars

We had technical difficulties with Prof Vicki Anderson's webinar. Vicki will endeavour to tape this and I'll get it out to the people who have registered ASAP.

2018 Workshops
#assbiworkshops

Carolina Bottari and Sylvain Giroux will be presenting a full day workshop in Sydney on March 26th which will also be streamed and available in MP4 format. The title of the presentation is "Real people, real life: Evaluations, Cognitive Assistance and Smart Homes for adult individuals with moderate or severe TBI" For more information and to REGISTER click here

Jennie Ponsford, Adam McKay and Dana Wong gave a full day workshop live in Perth and streamed to the rest of the country on **26th February** entitled: *The nature and treatment of sleep disturbance and fatigue following brain injury*. We are looking at making this workshop available to buy as an MP4 so stay tuned.

ASSBI CONFERENCES
41st Conference - #assbi2018

The 41st Annual Brain Impairment Conference will be held in Adelaide, South Australia on 3rd to 5th May 2018. The theme is *Connecting and Collaborating in Rehabilitation* and is being convened by Elizabeth Williams.

Registration is open, be a part of this conference by attending in Adelaide in May. There are 3 International and 2 National Keynote Speakers. For information and to register click here. Early bird closes on 1st April.

BRAIN IMPAIRMENT
ASSBI's multidisciplinary Journal

To login to the BI site of CUP, just **login** to the ASSBI website and click on this link to get directed to the Brain Impairment page of the CUP website, if you require any help with this please email Margaret

The first issue of Volume 19 is now available.

Editorial:

Quantitative data analysis for single-case methods, between-groups designs, and instrument development

We are pleased to bring you this special issue of *Brain Impairment* on quantitative data analysis, an area of increasing complexity and sophistication. In planning the special issue, our intention was to bring together a set of articles covering diverse and topical areas in the field, with the idea of having the volume serve as a "go-to" resource. The special issue is aimed at researchers, clinicians engaged in research, and advanced students all of whom may have passing familiarity with a particular data analytic technique, but wish to know more about it and how to apply it. Accordingly, our aim is to equip the reader with concrete, hands-on information that can be applied in the day-to-day world of research. The authors of the articles comprising the special issue, each of whom is an expert in their field, were charged with the task of writing a practical guide and providing worked examples to illustrate the application of their selected technique/s. The papers in the special issue cover three domains: the single-case method, between-groups design, and psychometric aspects of instrument development.

Single-case research is increasingly used in the neurorehabilitation field. Perusal of evidence databases such as PsycBITE (www.psycbite.com) demonstrate the exponential growth of publications over the past 40 years, numbering almost 1,500 single-case intervention studies in field of acquired brain impairment alone. There is increasing recognition of the importance of scientific rigor in single-case experimental designs (SCED; e.g., Kratochwill et al., 2013; Tate et al., 2013), part and parcel of which is the critical role of data evaluation. Three of the papers in the special issue describe various approaches to data evaluation. Traditionally, SCEDs have focused on the visual analysis of graphed data, the argument being that if you cannot see a treatment effect, then it is likely not to be very important. In their paper on systematic use of visual analysis, Ledford, Lane and Severini provide a heuristic tutorial on the steps that a researcher should cover to comprehensively conduct a visual analysis, in terms of examining level, trend, variability, consistency, overlap and immediacy within and/or between phases.

Following on, Manolov and Solanas delineate a variety of descriptive and inferential techniques available for SCEDs. In so doing, they provide an integrative approach between the visual versus statistical camps, noting that they themselves "rely heavily on visual representation of the data to enhance the interpretation of the numerical results". Analytic techniques in this area are rapidly evolving, but with the welcome increase comes the challenge of selecting the technique that is most suitable for the dataset. The authors re-analyse previously published data to illustrate the application of different statistical techniques, along with the rationale for using that technique. Among the helpful directions provided in the paper is knowing that (a) like between-groups analysis there is no single analytic technique that can be regarded as the gold standard technique, but (b) unlike between-groups analyses it is not advisable to determine the analytic technique a priori; rather the data need to be inspected for trend, variability and other features to determine a suitable technique that will not produce misleading results. Readers will appreciate the direction to websites where the intricacies of complicated procedures advocated by the authors, such as piecewise regression, can be conducted without angst.

Onghena and colleagues provide introduction to and step-by-step demonstration of the application of

STUDENTS CORNER

Ann Huang from Brisbane is the new ASSBI Student Co-ordinator

For full reports on student events go to the Student News Page

For any student enquiries email students@assbi.com.au

statistical techniques with both the unilevel model (evaluating level, trend, and serial dependency), and their cutting-edge work on multilevel meta-analytical procedures, as well as alternative approaches (e.g., use of randomisation tests). Serendipitously, the authors use one of the published data sets used in the previous paper to illustrate the application of increasingly sophisticated regression-based models. In a fitting conclusion to the first section of this special issue, Onghena et al. make thoughtful suggestions for furthering work in the field of single-case methods in general and single-case data evaluation in particular.

Researchers are generally more familiar with data analysis of the traditional between-groups design, covered by three articles in section 2 of the special issue. Here we have endeavoured to present papers that provide novel perspectives on familiar themes, which both the newcomer to the field, as well as the seasoned researcher, will appreciate. Everyone will want to know about the 50 tips for randomised controlled trials (RCT) from Harvey, Glinsky and Herbert. The authors provide pragmatic step-by step guidelines to help researchers avoid the many pitfalls that can befall the design and conduct of clinical trials. Their tips and advice are sage, honed from their extensive experience in conducting clinical trials. And the breadth of coverage is complete, going beyond 'standard' methodological and theoretical issues. For example, the item entitled "Try not to ask for too much from participants" cautions the investigator not make the burden of participation in the trial too onerous and thus risk losing participants, hence, potentially compromising the trial results. Eminently sensible advice, not usually found in text books.

The theme of points 41 to 43 from Harvey and colleagues (viz., don't be misled by *p* values, estimate the size of the effect of the intervention, and consider how much uncertainty there is in your estimate of the effect of the intervention, respectively), is further developed in the article by Perdices. The paper reviews misconceptions regarding null hypothesis significance testing that have been entrenched for many decades in psychological and behavioural research. Null hypothesis testing does not really deliver what many researchers think it does, and *p*-values do not have the significance generally attributed to them. The American Psychological Association recommendations for the use of effect sizes and confidence intervals made over two decades ago are still not universally implemented. The paper presents a brief guide to commonly used effect sizes and worked out examples on how to calculate them. References to on-line calculators for both effect sizes and confidence intervals provided added value.

Systematic reviews and meta-analysis provide Level 1 evidence and hence are a valued resource in bibliographic data-bases. Yet, like the RCT and the SCED, the scientific quality of systematic reviews varies enormously. All of these methodologies have critical appraisal tools that assist the reader to identify sound research with minimal bias and credible results, for example the PEDro Scale for RCTs (Maher, Sherrington, Herbert, Moseley, & Elkins, 2003), Risk of Bias in N-of-1 Trials (RoBiNT) Scale for SCEDs (Tate et al., 2013), and A MeaSurement Tool to Assess systematic Reviews (AMSTAR) for systematic reviews (Shea et al., 2017). The most influential repository of systematic reviews in the health field is the Cochrane Database of Systematic Reviews. The article by Gertler and Cameron demonstrates the stages involved in conducting a Cochrane systematic review, focusing on data analysis techniques. If you want to know about assessing heterogeneity, understanding forest plots depicting results of meta-analyses, funnel plots to detect bias, GRADE analyses to take account of risk of bias, and other tantalising techniques, then this is a paper for you!

The third section of the special issue contains two papers addressing aspects of instrument development at the psychometric level. Approaches to instrument development and validation in the health field have taken a quantum leap in recent decades and item response theory (IRT), as a mathematical extension of classical test theory, is increasingly used in instrument development and evaluation. As Kean and colleagues point out in their paper, although the origins of the mathematical processes of IRT can be traced back to the work of Thurstone almost a century ago, its application in the health sciences is more recent. We can expect to see more studies using IRT because of its precision of measurement. The authors' paper on IRT takes the reader through the why, what, when, and how of IRT and Rasch analysis.

In the final paper, Rosenkoetter and Tate address evaluation of the scientific quality of psychometric studies. No longer is it sufficient to report high reliability and validity coefficients – rather, the method by which such results are obtained is also of critical importance. They note that "the results of a study are trustworthy if the study design and methodology are sound. If they are not, the trustworthiness of the findings remains unknown". The authors provide a head-to-head comparison of six instruments specifically developed to critically appraise psychometric studies in the behavioural sciences. The paper concludes with an application of the COSMIN checklist, along with the Terwee-m statistical quality criteria, and a levels of evidence synthesis.

We thank the authors who contributed to this special issue of *Brain Impairment*. Each of the articles has been carefully constructed to fulfil our brief and each also makes a unique, timely and erudite contribution to the field. Consequently, we believe that this volume will be a valuable resource and hold something new for every researcher, clinician and advanced student.

Robyn Tate and Michael Perdices
Guest Editors
Brain Impairment

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Jennifer Fleming and Grahame Simpson
Co-Editors

ASSBI RESOURCES

A new manual is for sale called "Retraining Activities of Daily Living During Post-Traumatic Amnesia following Traumatic Brain Imjury: Therapy Manual by Jessica Trevena-Peters, Adam McKay and Jennie Ponsford ($155). This is available to ASSBI and INS members with 10% off

I would like to remind everyone that in addition to the manuals that ASSBI has for sale Members of ASSBI can download many free tests.

Non-members have access to some free downloads too – click here to see the full list of manuals **and** free to downloads on offer

Skye McDonald
Resources Manager

OPPORTUNITIES FOR INVOLVEMENT

Dear Occupational Therapists,

Have you worked with clients that have presented with a neurological condition in the last twelve months? Many clients presenting with neurological conditions also experience an acquired communication disorder. Examples of acquired communication disorders include aphasia, speech disorders such as dysarthria and apraxia of speech and cognitive-communication disorders associated with traumatic brain injury, dementia and right-hemisphere stroke. Current research suggests that significant challenges may arise as health professionals attempt to communicate with clients who have an acquired communication disorder.

You are invited to participate in a survey that will explore the experiences and perceptions of Occupational Therapists who have treated clients with neurological disorders, who may have also presented with an acquired communication disorder (Australian Catholic University Ethics approval 2017-310E). This survey will result in a deeper understanding of the day-to-day clinical experiences of OTs, identify areas where there is a potential for future training and development, and provide a rationale for further research investigating how OTs can be better supported when working with clients with an acquired communication disorder.

The survey will be available to complete until **Friday 30/03/2018** and the link is below:
https://acu.qualtrics.com/jfe/form/SV_d4Hk6NFYatP1QYR

Once directed to the link you will find a more detailed Participant Information Sheet and an informed consent form.

Kind regards,
Eamon Charles, Honours Student in Speech Pathology (eamon.charles@myacu.edu.au)

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