

Cognitive Rehabilitation: Emerging Issues and Paradigm Shifts

This issue of *Brain Impairment* includes the set of papers presented at the symposium on rehabilitation at the 30th meeting of the International Neuropsychological Society (INS) held in Toronto, Canada, in 2002. Additionally, it includes abstracts from the 26th ASSBI meeting, held in Sydney in 2003, the theme of which was also rehabilitation.

In the words of Ken Adams (this issue), the rehabilitation programs and approaches described in this set of INS papers reflect the very best of what can be brought to bear in creativity and innovation. The format of the symposium has been retained in this issue, wherein the paper by Adams serves as discussant to the first three papers in the symposium by Ylvisaker, Mateer and Sohlberg, and Wilson. Adams' paper takes a definitive stance on certain issues that makes for controversy and lively debate, and we invite our readers to join in and contribute. He presents an optimistic overview of cognitive rehabilitation that at the same time recognises some of the very difficult tasks and challenges ahead. This is evident in a number of themes that recur in his paper, including the application of traditional research designs to show treatment efficacy and the bridge between research and clinical practice.

As convincingly demonstrated by Mateer and Sohlberg (this issue), the new generation of cognitive therapies has left the artificiality of laboratory-based drills and practice, along with the exclusive focus of therapy conducted in the clinic or hospital setting. Increasingly, patients and clients are participants in formulating treatment goals and therapy is individualised and grounded in the context of the person's life (see Wilson, this issue). Ylvisaker (this issue) observes that the focus of context-based rehabilitation first addresses the amelioration of disablement, in contrast to the traditional approach that focuses on more narrow cognitive impairments, often as defined by standardised cognitive tests. Additionally, we are currently witnessing a shift in the conceptual focus of therapy, away from the traditional method of manipulating *consequences* in favour of manipulating *antecedents*. This is most clearly articulated in Ylvisaker's work (see e.g., Ylvisaker, Jacobs, & Feeney, 2003), in terms of the provision of supports to promote pro-social behaviours. Yet, the principles apply equally well to cognitive disorders, as the work from Wilson's group on errorless learning amply demonstrates (see e.g., Wilson, Baddeley, Evans & Shiel, 1999).

All of these developments are undoubtedly sensible advances over the methods, procedures and principles that characterised cognitive rehabilitation two or three decades ago. Nonetheless, they bring about attendant challenges: the behaviours and the environment in which such behaviours are treated are much more complex in the contextual model than the traditional impairment-focused cognitive rehabilitation program. This impacts in a number of ways, not least of which is the demonstration of treatment efficacy. Adams (this issue) asserts that cognitive rehabilitation is at a disadvantage because by its very nature it tends not to be able to meet some of the criteria deemed to be necessary for scientific rigour (such as blinding of patients and therapists). Nonetheless, well-designed randomised controlled

trials *are* possible, and some rehabilitation programs have been shown to be highly efficacious (see systematic reviews by Carney et al., 1999 and Cicerone et al., 2000). Context-based rehabilitation approaches are also amenable to randomised controlled trials that lend themselves to rigorous scientific evaluation within the logical positivist tradition. For example, using a well-designed randomised controlled trial, Powell and colleagues (2002) demonstrated the efficacy of a multi-disciplinary community rehabilitation program for traumatic brain injury.

One of Adams' arguments to support his view that randomised, population-based trials are "not applicable" to cognitive rehabilitation is that treatments cannot be standardised because of the diverse effects of brain impairment and "untidy individual differences". This is essentially true and needs to be recognised where applicable, but it does not necessarily mean that such research designs are rendered unattainable. The "macro" structure of either a traditional or context-based rehabilitation approach might well be precisely and rigidly specified in terms of the delivery of a rehabilitation program (i.e., number and duration of treatment sessions), yet there may be substantial variability in the specific content, or "micro" components, of actual therapy that each individual receives. For instance, in the randomised controlled trial examining the efficacy of the NeuroPage program (Wilson, Emslie, Quirk & Evans, 2001), the overall or "macro" parameters of the program were constant (e.g., each participant used the pager for a 7-week period) but the "micro" components varied among individuals (e.g., each participant selected their own messages and the wording of the messages, which could be modified at any stage throughout the program). While it is true that by definition these micro components cannot, and should not, be standardised, their very heterogeneity may represent a strength as well as a weakness; it is a weakness because one does not know precisely what is being evaluated, but the strength is that even in the face of such heterogeneity if the overall approach works then it suggests that variation in treatment application will be tolerable.

Randomised controlled trials and group studies are not the only way to demonstrate treatment efficacy. Clinical psychology has a long tradition of the use of single case experimental designs (e.g., Herson & Barlow, 1976), and the more sophisticated of these, such as those using multiple baselines, are highly appropriate to convincingly demonstrate treatment effects in an individual. Single-case experimental designs are increasingly used in the cognitive rehabilitation of people with acquired brain injury, as any number of papers in *Neuropsychological Rehabilitation* attest. By their nature, papers describing single-case methods provide an excellent heuristic for everyday clinical practice. The thoughtful construction of an individual's therapy program in a clinical setting and incorporating a few simple procedures (such as pertinent pre-and posttreatment measures, specifying and taking baseline measures of the target behaviours, and monitoring treatment progress) is one way to increase rigor in clinical practice. It is hard to accept Adams' position that these approaches cannot be applied in the average or typical community-based setting.

It seems that Adams' greatest doubt about new developments in cognitive rehabilitation is not so much the efficacy and validity of the approach, but rather the ability to implement this within the current culture of standard clinical practice. Translating research findings into clinical practice is clearly a transition process bridged by education of clinicians. By the same token, clinicians are frequently those who generate the new developments

of rehabilitation methods and techniques, the type of which are described in texts such as Sohlberg and Mateer (2001) and Ponsford, Sloan, and Snow (1995). Perusal of the contents of the abstracts in this issue presented at the ASSBI conference also demonstrates the development of a rich array of community-based programs for acquired brain impairment throughout Australia, addressing behaviour consultancies, transitional living, developing friendships, community supports, therapeutic day activities, peer support groups. It is this very type of activity that sets the scene for the culture of change within clinical communities.

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