Welcome to the first issue of Rehabilitation Research Review.

The review is designed to make research accessible to practitioners and policy-makers. At Griffith University, we are pleased to have been invited to use this medium to highlight some of the most recent international and local research in the field of disability and rehabilitation. In each issue, our researchers will select about 10 published papers on a specific theme that is particularly relevant, timely, unusual, or controversial. The papers will cover a range of methods including expert opinion, case studies, qualitative research, systematic reviews, randomised controlled trials and quasi-experimental designs. Where possible, the papers will also address the diversity of rehabilitation settings, disciplines and populations, hopefully offering something for everyone.

In this first issue, we simply explore the evidence that supports the concept of rehabilitation itself. Rehabilitation was first used as a term around the late 16th Century. It is derived from the Medieval Latin words ‘habilitare’ (to make fit or enable) and ‘habilitas’ (aptness or readiness) combined with the prefix ‘re’ meaning again. Interestingly, in many countries across Europe and Central Asia, habilitation is used to denote the highest level of academic qualification that can be achieved, beyond a PhD. Rehabilitation has a long history, with roots dating back to the mid-1800s temperance movement (addiction rehabilitation), the “moral” reform movement of the late 1800s (psychiatric and criminal rehabilitation), the 1st World War (vocational/occupational and physical/medical rehabilitation) and the civil rights movement which gained prominence in the mid-1900s (special education/disability rights).

The World Health Organization defines rehabilitation (and habilitation) as: a process aimed at enabling [people with disabilities] to reach and maintain their optimal physical, sensory, intellectual, psychological and social functional levels. Rehabilitation provides disabled people with the tools they need to attain independence and self-determination. Rehabilitation and habilitation are instrumental in enabling people with limitations in functioning to remain in or return to their home or community, live independently, and participate in education, the labour market and civic life. Access to rehabilitation and habilitation can decrease the consequences of disease or injury, improve health and quality of life and decrease use of health services.

This definition holds significant appeal and accurately reflects the intent of those who work in our acute hospitals, transitional units, vocational services or disability agencies. There is wide-spread acknowledgement that rehabilitation is essential, but for a host of reasons, demonstrating its impact is incredibly difficult. First, rehabilitation outcomes tend to be small in magnitude and, although clinically significant, studies frequently fail to satisfy criteria for statistical significance. Second, due to its subjective, preventative and individualised focus, rehabilitation outcomes are not easily quantified or standardised. Indeed, outcomes may sometimes reflect an absence of decline rather than direct improvements. Third, the applied nature of rehabilitation and the complex contexts in which it is delivered do not always lend themselves well to the scientific method. Finally, a multitude of factors about the nature of rehabilitation, the characteristics of the individual and aspects of his or her situation are likely to impact on rehabilitation processes and outcomes, creating enormous variability both within and across studies.

In this issue, I describe studies that have examined the impact of different types of rehabilitation across a range of populations, conditions and contexts. There were so many papers I could have chosen, reflecting a growing interest in rehabilitation and its increasing level of scholarship. There is no particular rationale for my selection of papers other than an attempt to cover a range of areas and reflect some important issues in the literature. Collectively, these papers demonstrate several important trends, including the use of big data, the importance of systematic reviews that synthesise our knowledge, the promising role for new technologies and the importance of partnerships and integration across disciplines, agencies, and sectors to improve outcomes for clients and their families. The papers also raise the importance of more complicated research questions that need to dominate the minds of rehabilitation researchers in the future – not only do we need to demonstrate the effectiveness and cost efficiency of rehabilitation, but we need to know where it is best delivered, how, when, for how long, for whom, and in what way. Answering these more difficult questions will help us to better explain rehabilitation in the future.

I hope you enjoy this issue and look forward to bringing you further issues on interesting topics.

Kind Regards,

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The effects of vocational rehabilitation for people with cognitive impairments

Authors: Dean O et al.

Summary: This study used administrative data from over 2000 cognitively impaired clients of vocational rehabilitation (VR) services in Virginia, USA. The purpose of the study was to examine the impact of VR on employment and earnings. Quarterly data are provided on employment and earnings over 4 years prior to receiving VR services and up to 9 years following VR services. The study examines the impact of the different types of services received (diagnosis and assessment, training and education) and related training, maintenance services to support independent living and other services). There were significant variations in services provided depending on the office and counsellor involved. Participants were divided into those who were diagnosed and assessed but received no further intervention or did receive further intervention. Other factors that may have influenced this categorisation were not discussed. Nevertheless, employment outcomes were similar for these two groups prior to VR intervention but deviated after VR intervention with those receiving services showing better employment outcomes. A conservative cost analysis revealed that the benefits of VR outweighed the costs four- to six-fold in the long-term. Assessment, diagnosis, training and education were particularly effective whereas restorative treatment and maintenance services did not impact directly on employment outcomes.

Effectiveness of interventions to improve occupational performance of people with motor impairments after stroke: An evidence-based review

Authors: Nilsen DM et al.

Summary: These authors conducted a systematic review to determine the effectiveness of interventions designed to improve occupational performance in people with motor impairments after stroke. One hundred forty-nine studies met inclusion criteria. The review found a variety of effective interventions, but the evidence suggested the greatest success for repetitive practice of tasks (including mental practice and practice through virtual reality exercises). Other highly successful interventions were constraint-induced or modified constraint-induced movement therapy, strengthening and exercise, mirror therapy, and observation/active learning. These interventions all improved upper-extremity function, balance and mobility, and/or activity and participation in daily activities. The common element across effective interventions was the use of goal-directed, individualised tasks that promoted frequent repetitions of directly relevant and specific movements.

Comment: This review, conducted by occupational therapists in New York, focuses on motor impairments following stroke and the types of interventions that support people to improve upper-extremity functioning, balance and mobility or improved performance in activities of daily living, education, work, leisure or social participation. Systematic review is an important method of collating the best evidence about a particular question and is helpful when the amount of research has increased and it is difficult to draw conclusions from one study alone. To conduct a systematic review, researchers search relevant databases using carefully selected search terms. The full method used in this review is described in a related publication (Arbesman M et al., 2015). Of 4930 studies identified, 149 were included in the review and the majority of these reported on Level I evidence (i.e., randomised controlled trials). Studies were excluded if they did not focus on at least one of the outcomes of interest (either real or simulated), but as is often the case, outcome measures varied considerably across studies, preventing direct comparison. In general, though, interventions involving repetitive practice had positive impacts on all three outcomes. Interventions that forced participants to use the affected limb for most of the day (i.e., by restraining the unaffected limb and/or intense training of the affected limb - known as CIMT or constraint-induced movement therapy) were effective and appeared to be sustained over time. Interestingly, similar outcomes were evident even when the duration and intensity of CIMT was reduced and when it was delivered in the home or at different times post-stroke. Interventions that focused on strengthening and exercise were also effective for all three outcomes. Only a few studies focused on other interventions (e.g., mirror therapy to encourage use of the opposite limb, observation/active learning), with mixed findings. The common element of all effective interventions was repetitive practice, but virtual reality provided surprisingly positive results, suggesting exciting possibilities for the future.

Reference: Int Economic Rev. 2015;56(2):399-426

Abstract


Abstract

Independent commentary by Professor Elizabeth Kendall.

Elizabeth Kendall is a Research Professor at the Menzies Health Institute Queensland, Griffith University which is home to an extensive collaborative of inter-disciplinary and cross-sectoral research, specialising in disability, resilience, recovery, and rehabilitation. The research collaborative includes partners from Queensland Health and Department of Communities along with large non-government organisations, private companies and local authorities. Elizabeth completed her PhD in 1997 on the topic of adjustment following traumatic brain injury, for which she won the Dean’s Commendation for Outstanding PhD Thesis at University of Queensland. She has attracted over $40 million in research grants and consultancies and has over 200 publications. She has been an active advocate in the field of disability for her entire working life.

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Rethinking hospital-associated deconditioning: Proposed paradigm shift

Authors: Falvey JR et al.

Summary: This paper is a review and commentary that explores the role of hospital-associated deconditioning (HAD) in the rehabilitation of older adults. The authors provide a framework for understanding deconditioning in hospitalised adults based on evidence about the efficacy of different physical interventions designed to improve mobility and independence, such as resistance training, conditioning, gait and balance interventions. They hope that a new approach will facilitate a shift in how therapists and service systems define successful rehabilitation. They propose that rehabilitation should be regarded as an activity that promotes meaningful improvement in physical functioning, but also contributes to the prevention of decline, future disability and mortality.

Comment: In this paper, the authors tackle the issue of HAD, which is known to occur in over two-thirds of older people who are hospitalised for acute conditions of any kind. HAD accrues for a relatively large proportion of health costs, contributes to a high rate of re-hospitalisation for older adults and predicts a poor recovery trajectory with higher likelihood of mortality. The notion of deconditioning has important implications for people with a range of other conditions where mobility and environmental stimulation are compromised. HAD is associated with prolonged periods of bed rest, sleep disturbances, inactivity, and nutritional deficits and results in reduced muscle strength, loss of muscle mass, cognitive decline and psychosocial difficulties. Importantly, deconditioning is avoidable. In the worst cases, HAD could be considered to be an iatrogenic injury (i.e., disability created by the nature of the treatment). This current paper focuses on physical therapy for older adults and asks whether or not rehabilitation settings provide appropriate intensity of therapy to address HAD. They note a widespread problem of under-dosage of physical stimulation, low intensity programs and generalised treatments that fail to maximise functioning. The authors conclude that there is a need for transitional rehabilitation programs to specifically address HAD as an independent risk factor. They describe the current hierarchy of training as one that begins with global conditioning activities for all clients. For some clients with higher levels of need, rehabilitation then progresses to specific training in gait, balance and daily living activities, aerobic training and low intensity resistance training. Instead, they describe a hierarchy that starts with high intensity resistance training for all clients as a foundation. It should then provide targeted interventions for gait, balance and daily living activities, aerobic training and global conditioning. The question of deconditioning is an important rehabilitation topic that needs to be taken up in all long-term residential settings and community programs to prevent unnecessary declines that can detract from quality of life.

Reference: Phys Ther. 2015;95(9):1307-15

Intensive rehabilitation treatment in early Parkinson's disease: A randomized pilot study with a 2-year follow-up

Authors: Frazzitta G et al.

Summary: Although physical exercise improves motor aspects of Parkinson's disease, it is not clear whether it may also have a neuroprotective effect. In this 2-year follow-up study, the authors examined the effect of intensive exercise on disease progression in the early stages of Parkinson's disease. Forty people, recently diagnosed with Parkinson's disease, were prescribed rasagiline and randomly assigned to two groups, one receiving two 28-day multidisciplinary intensive rehabilitation treatments (MIRT) at a 1-year interval and a control group. Improvements were noted in the MIRT group but not in the control group over time. Drug use increased significantly only in the control group. These results suggest that MIRT slows down the progression of motor decay, delays the need for increased drug treatment, and might have a neuroprotective effect.

Comment: This Italian study is unique in that it focuses on the early stages of Parkinson's disease and attempts to demonstrate ways in which early intensive rehabilitation can prevent the decline and delay the increasing need for medication that is generally associated with this disease. The authors investigated the effects of a 4-week MIRT, repeated annually. Forty people recently diagnosed with Parkinson's disease were randomly allocated to either MIRT (plus monoamine oxidase inhibitor medication) or control (monoamine oxidase inhibitor medication only). The two groups were compared on motor performance, autonomy in daily living activities and medication increases over a 2-year period. All five assessments (baseline, 6, 12, 18 and 24 months) were conducted at the same times of day and at the same time after taking medication. The assessing neurologists were blind to group allocation. The 4-week MIRT was administered after baseline and 12 month assessments, with post-intervention assessments also conducted for the treatment group. The intervention involved three one-hour sessions per day over 4 weeks and was delivered by a team of neurologists, psychiatrists, psychologists, nurses, physiotherapists and occupational therapists. The first session included cardiovascular warm-up, relaxation, muscle stretching and postural/motion exercises. The second session focused on balance and gait using stabilizediometric platforms and treadmill training. The third session focused on autonomy in activities of daily living such as transfers, sitting, standing, dressing and so forth. At discharge, clients were given maintenance activities and asked to keep a record of their performance. The two groups were statistically similar at baseline, but there was a significant difference between the groups in the pattern of disease severity, physical ability, disability and medication use over time. The MIRT group showed improvements on all outcomes that were not found in the control group and required significantly lower dosages of additional levodopa medication or remained on monoamine oxidase inhibitor only. This study highlights the importance of intensive early rehabilitation by interdisciplinary teams as a mechanism for slowing (or even reversing) decay.

Reference: Neurorehabil Neural Repair. 2015;29(2):123-31
The effect of multidisciplinary rehabilitation on brain structure and cognition in Huntington’s disease: an exploratory study

Authors: Cruickshank TM et al.

Summary: Grey matter degeneration and loss of cognitive function over time is a characteristic of Huntington’s disease. To date, efforts to attenuate these disease processes have been unsuccessful. However, this study from Western Australia found that 9 months of weekly multidisciplinary rehabilitation with home-based exercises showed volumetric increases in grey matter in the right caudate and bilaterally in the dorsolateral prefrontal cortex (DLPFC), and improved verbal learning and memory ability. The participants were 15 adults (7 females and 8 males) aged between 45 and 71 years with positive genetic and self-report tests for Huntington’s disease, a family history of Huntington’s disease and no other neurological or psychiatric conditions. The intervention consisted of an aerobic and strengthening program in the clinic and at home combined with a variety of cognitive and executive exercises. It was delivered weekly for 9 months by an experienced interdisciplinary team consisting of physical therapists, exercise physiologists, occupational therapists, and strength and conditioning specialists. The duration of the intervention was chosen because structural changes can be detected in Huntington’s disease after 6 months and evidence has shown that rehabilitation can influence brain structure after 2 weeks.

Comment: This study was an exploratory study, with a small convenience sample consisting of a group of people already seeking treatment for Huntington’s disease. There was no control group, which means we cannot be sure that any changes observed were due to multidisciplinary rehabilitation or some other factor. Nevertheless, the study is important because it demonstrated high levels of participation in the supervised intervention and almost 60% adherence to the home-based, non-supervised program. This finding suggests that early stage Huntington’s disease patients are keen to engage in rehabilitation if given the opportunity. The authors focused on regions of the brain known to be associated with cognitive decline in Huntington’s disease, namely the striatum, hippocampus and DLPFC. The results showed significant bilateral volumetric increases in grey matter in the DLPFC, in the tail of the right caudate nucleus, the superior thalamus, left inferior temporal pole, right subcallosal cortex, and posterior primary motor areas following multidisciplinary rehabilitation. All other regions showed volumetric loss as would be expected in Huntington’s disease. Participants showed significant improvements on the number of words recalled after delay on the Hopkins Verbal Learning Test Revised, which was correlated with increased bilateral volume in the DLPFC. Although not well controlled, this study highlights the importance of recent developments in the area of environmental enrichment and its potentially neuro-protective impact. It also suggests that regular multidisciplinary rehabilitation could play an important role in moderating the progression of Huntington’s disease. Preservation of verbal learning and memory ability will enable individuals to remain at home or in the care of their families for longer, resulting in a host of associated psychosocial benefits. Further research is needed in this area to clarify the extent to which early intensive interdisciplinary rehabilitation can capitalise on neuroplasticity.

Reference: Brain Behav. 2015;5(2):e00312

Abstract

Long-term effects of interprofessional biopsychosocial rehabilitation for adults with chronic non-specific low back pain: A multicentre, quasi-experimental study

Authors: Semrau J et al.

Summary: This study investigated the role of multidisciplinary orthopaedic rehabilitation (MOR) in the management of chronic non-specific low back pain (CLBP) in Germany. The authors compared an interprofessional, biopsychosocial, self-management intervention named “PASTOR” with the current model of care (MOR). They used a multicentre quasi-experimental study with three measurement points. Participants were delivered either MOR (n = 266) or PASTOR (n = 270). At the end of the intervention and again at 12 months, significant differences were found between PASTOR over MOR participants in self-reported functional ability, although both groups improved over time. There were also improvements in physical health status, all cognitive and behavioural pain coping strategies and most fear-avoidance responses. Improvements in catastrophising, pain intensity and participation in sport activity were only observed at 12 months. No improvements were found in mental health variables or total participation. The authors concluded that an interdisciplinary, biopsychosocial rehabilitation program designed to promote self-management would improve the long-term effectiveness of inpatient rehabilitation in the management of adults with CLBP.

Comment: Low back pain remains the leading musculoskeletal disease around the world. Some evidence suggests that intensive multidisciplinary biopsychosocial rehabilitation is more effective than usual care, but less is known about how and when to deliver such programs. This study was a registered multicentre prospective quasi-experimental control trial with three points of measurement; pre- and post-rehabilitation, as well as 12-month follow-up. The trial was conducted across three inpatient rehabilitation centres in Germany. Usual care (MOR) was delivered to clients attending rehabilitation during the first six months of the trial and PASTOR was delivered to those attending during the second six months. This design was necessary because randomisation was not possible given that the new approach was adopted across the entire rehabilitation centre. Usual care (MOR) lasted for an average of 23 days and included separate components of health education, exercise therapy and back school with a traditional biopsychosocial treatment plan, physical treatments (e.g., massage), some psychological group interventions and individual counselling. PASTOR included a highly structured and integrated psychoeducational program based on a comprehensive treatment approach, delivered by an interprofessional and collaborative team using standardised methods, media and materials. The duration was similar to usual care, but was delivered mostly as group sessions with only minimal individual treatment. Participants in the control group reported a slightly lower physical quality of life and higher functional disability than the PASTOR group at baseline. There was also some evidence that those who left the study may have been more disabled, although dropout occurred equally across both MOR and PASTOR. At the end of rehabilitation and 12 months later, the PASTOR group had improved beyond the MOR group and these improvements appeared to be sustainable. The greatest improvement in functional ability occurred in the year post-rehabilitation whereas functional ability decreased slightly in the control group over this same period. This difference may have been associated with the baseline differences between the groups, but was also likely to reflect the focus of PASTOR on self-management and skills that could be applied at home. This study provides a good example of an intervention that equips people with disabilities to attain independence, self-determination and participation in their lives. Further, PASTOR had a strong focus on integrating treatments from different disciplines rather than adding them to each other in a summative approach. The success of this approach suggests the need for more research into how to develop interdisciplinary practice in rehabilitation.


Abstract
Alternative models of cardiac rehabilitation: A systematic review

Authors: Clark RA et al.

Summary: This Australian study examined the effectiveness of several models of cardiac rehabilitation that could provide alternatives to traditional hospital-based care, given the cost and inconvenience of the latter. The authors searched 22 databases to identify quantitative studies or systematic reviews regarding the effectiveness of alternative models of cardiac rehabilitation. They identified several categories of cardiac rehabilitation, namely tele-health, internet-based, community-based or home delivery, and complementary therapies. Individualised tele-health and community- or home-based cardiac rehabilitation produced similar reductions in cardiovascular risk factors compared with hospital-based therapies. Individualised tele-health and community- or home-based cardiac rehabilitation all produced similar reductions in cardiovascular risk factors compared with hospital-based programs. There is a paucity of data available regarding the effectiveness of alternative models of cardiac rehabilitation in rural, remote, and culturally and linguistically diverse populations.

Comment: Following a cardiac event, rehabilitation is usually delivered during ambulatory outpatient attendances. Although this intervention has been shown to be effective, referral and attendance at cardiac rehabilitation programs are sub-optimal. As a result, alternative models of rehabilitation have been investigated. The authors asked the following questions: (1) What alternative models of cardiac rehabilitation are available other than traditional hospital-based rehabilitation? (2) What are the core elements of each model? and, (3) What are the clinical and service outcomes of each model? They found strong evidence for the effectiveness of cardiac rehabilitation delivered by tele-health. Two tele-health models demonstrated sustained effectiveness, significant clinical impact, and generalisability (i.e., COACH and CHOICE). These models focus on partnerships with community-based treating practitioners, reviewing services in comparison to national guidelines, localised recommendations for both practitioners and clients and coaching to support positive action. Tele-health interventions were not dose dependent in that brief interventions were as effective as more intense interventions. Community-based programs delivered face-to-face, through either home visits or patient attendance at community centres were also as effective as hospital-based programs. Most often, these programs include graduated exercise, peer support, education, goal setting, and motivation. Importantly, there was no difference in cost-effectiveness between home-based and centre-based rehabilitation. Further, home-based rehabilitation was cost-effective compared with no rehabilitation. Study quality was poor in the area of complementary treatments, suggesting the need for rehabilitation researchers to investigate these approaches in future. This study has highlighted the importance of engaging in alternative delivery methods, including tele-health partnerships with local service providers in primary care and the non-government sector. This approach is not one that is consistently used in rehabilitation but may facilitate adequate follow-up care for those who live in rural and remote areas as well as those who are unable or unwilling to attend rehabilitation centres.


Implementing and sustaining an early rehabilitation program in a medical intensive care unit: A qualitative analysis

Authors: Eakin MN et al.

Summary: This qualitative study draws on the experiences of a multidisciplinary team about how to implement and sustain a successful early rehabilitation program within a Medical Intensive Care Unit (MICU) at Johns Hopkins Hospital. Using the Consolidated Framework of Implementation Research Theory, the data revealed four major constructs that were important for a successful program in ICU: (1) presence of all the necessary components, (2) the use of implementation strategies, (3) addressing perceived barriers, and (4) identifying positive outcomes. The most common facilitator of early rehabilitation in the ICU was staff buy-in and the use of a multidisciplinary team approach with good communication between the disciplines. Other important components included champions within each of the disciplines and an overall leader who could influence opinions. In terms of resources, the implementation required dedicated ICU rehabilitation personnel, basic equipment, funding, administration support and changes to sedation practices to enable rehabilitation on the ward. Implementation strategies that worked included the collaborative engagement of the entire team, consistent staff education across all disciplines, and an evidence-based approach involving regular dissemination of research, data and reporting. The most commonly reported barriers were the perception of increased staff workload and safety concerns, although the latter decreased over time. Reported benefits included improved patient outcomes, increased staff satisfaction with their work, economic savings to the hospital system through earlier discharge and a shift in the culture of the ICU towards a rehabilitation approach.

Comment: Intensive care services are usually and rightly focused on preserving life, stabilising essential body functions and managing complex health risks. Rehabilitation is rarely found in this context, despite evidence that early intervention can improve long-term physical, psychological and vocational functioning. There are many perceived barriers to providing additional rehabilitation at this time so the experience of staff members who have implemented a successful early rehabilitation program will provide important information about how to proceed. Twenty of 23 staff members who had been involved in the implementation of the ICU rehabilitation program were interviewed about the role of the external environment (e.g., hospital support), the internal environment (e.g., the unit culture), characteristics of the intervention (e.g., length of time and resources needed), implementation strategies, and staff attitudes and skills. Staff members included physicians (medical directors and residents), physician assistants; nurses (including clinical nurse specialists); a respiratory therapist; clinical program coordinators; and rehabilitation providers including physical therapists, occupational therapists, rehabilitation technicians, speech and language pathologists, and a rehabilitation psychologist. This paper highlights the fact that implementation is a critical aspect of rehabilitation systems. Given that rehabilitation often occurs on top of, and in the context of, other services (e.g., acute treatment, community services, employment, housing), it requires successful implementation strategies and detailed attention to the culture. Successful rehabilitation seems to be inextricably linked with interprofessional communication and collaborative practice, but these are often elusive or poorly understood. Perhaps one of the most interesting findings of this study is the extent to which staff satisfaction and broader cultural shifts occurred in the ICU environment through the presence of rehabilitation. These broader benefits of a rehabilitation approach may not be fully appreciated by administrators and policy makers.


Abstract
Cognitive pragmatic treatment: A rehabilitative program for traumatic brain injury individuals

Authors: Gabbatore I et al.

Summary: This study examined the efficacy of Cognitive Pragmatic Treatment, a rehabilitative training program for improving communicative-pragmatic abilities following Traumatic Brain Injury (TBI). The Cognitive Pragmatic Treatment program consisted of 24 group sessions over 12 weeks focused on communication modalities, theory of mind, and cognitive abilities such as awareness and executive functions. A sample of 15 TBI patients with severe impairments was treated before and after training, using equivalent forms of the Assessment Battery for Communication, and a neuropsychological assessment. Both comprehension and production of communication improved in terms of language skills, non-verbal skills and social appropriateness. The follow-up showed that the improvement of patients persisted after 3 months, even in people years after their injury.

Comment: This study conducted in Italy focused on the ability of people with TBI to engage in appropriate social communication. Communicative-pragmatic competence refers to a complex cluster of abilities that allow a person to understand another person's literal and intended meaning. Deficits may include excessive talking, tangential topics, repetitiveness, difficulties in starting and maintaining a conversation, disorganised discourse, inability to comprehend subtle hints, non-verbal cues or sarcasm, insensitivity, poor social judgment, and inadequate intimacy. Some researchers have concluded that impaired executive functioning and Theory of Mind should be a primary focus of rehabilitation designed to improve communication. Theory of Mind is the ability to recognise and attribute mental states to oneself and others, and to use this knowledge to predict and explain behaviours. The study was conducted over a period of 9 months and comprised a 3-month control activity period followed by a 3-month training period, each with two sessions per week and a 3-month follow-up period. This design is a good example of how to accommodate the inability to include a control group. The control activities resembled those of the intervention in intensity and timing, but were non-specific tasks that were not expected to be associated with any improvement in performance. The intervention involved introductory tasks, comprehension activities (involving videos of actors) and production activities (role playing and interactive discussions). Participants were given homework tasks to enhance transference and reinforcement of learning. Assessment was conducted at baseline, after control activities, after the intervention and again after the follow-up period. No improvements occurred between baseline and the first measurement point when participants engaged in control tasks. However, all linguistic abilities improved significantly following introduction of the intervention and were sustained for the next 3 months. Only two neuropsychological measures showed improvements, namely long-term immediate and delayed verbal memory and cognitive flexibility, but the importance of these skills for communication are clear. The study demonstrates that communication skills following TBI can be improved, although the broader impact of these improvements on actual social functioning has not been determined. A focus on applied social situations is important in future research.

Reference: J Head Trauma Rehabil. 2015;30(5):E14-28

Measuring what matters: Effectiveness of implementing evidence-based supported employment for adults with severe mental illness

Authors: Waggon G et al.

Summary: This study was conducted in Queensland and compared two methods of evaluating the effectiveness of an evidence-based supported employment program. One method was a non-randomised four-site intervention using a parallel group design without a control group at the site level. The second method was a controlled trial implemented in four sites with randomisation to either an intervention or control condition. The control condition consisted of existing non-specialised local employment services. The intervention involved a full-time employment specialist located in a community mental health team with links to a recognised employment service. The caseload of each employment specialist was capped at 25 or fewer active clients at any time. Comparisons were made on competitive employment and vocational outcomes across the non-randomised, randomised and control groups. There were no significant differences between the randomised and non-randomised intervention groups on all employment and vocational outcomes, but there were vocational benefits for the intervention clients over the control clients. Further, the study showed that attrition was more likely to occur in control conditions and among those who were not benefiting from participating. Attrition needs to be carefully managed and monitored to understand its impact on conclusions drawn about interventions.

Comment: Employment outcomes for people with severe mental illness are traditionally poor, especially in cases of chronic ill health. As these authors point out, there is ample evidence that an individualised supported approach to employment leads to successful outcomes, but this approach is rarely implemented during traditional mental health case management. Thus, there is a distinction between what is known about what works (efficacy) and what is feasible and sustainable in practice within complex settings and unpredictable populations (effectiveness). Efficacy is usually determined through randomised controlled trials, but these designs are often not plausible in the complex rehabilitation environment. In cases where randomisation and control groups are not feasible, quasi-experimental designs are used. These designs closely replicate the naturally occurring circumstances, but can increase the likelihood that the findings could be attributed to factors other than the intervention. In this study, the non-randomised intervention group showed significantly better competitive employment outcomes than the randomised control group at 12 months, but when differences in indigenous status, illness type and chronicity were controlled, any differences disappeared. These group differences could have reflected the type of systematic sampling bias that randomisation seeks to address (e.g., clinician influence on who was recruited, enhanced outcomes due to knowledge of client participation in a trial). With careful attention to attrition and potential confounding variables, quasi-experimental designs have an important place in rehabilitation research when randomisation is not ethical, acceptable or feasible.

In an important step, the authors also measured the fidelity of the intervention, giving them some certainty that the intervention had been delivered in the expected manner. Implementation failure is a major challenge for applied research, yet its presence and impact are rarely measured. Finally, an important finding of this study was that control participants also showed improved vocational outcomes simply as a result of engaging with local employment services. Although not as beneficial as the supported employment intervention, attention to vocational processes can result in improved outcomes. However, vocational rehabilitation is rarely integrated into the overall treatment process for many populations, including those with severe mental illness.

Reference: Int J Ther Rehab. 2015;22(9):411-20

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