

# Using psychology theory to guide serious-injury vocational rehabilitation: Predicting the use of job-retention interventions for those living with spinal cord injury

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**KEYWORDS:** theory of reasoned action, theory of planned behaviour, traumatic spinal cord injury (SCI), job retention, vocational rehabilitation, return to work (RTW).

**ABSTRACT**

**BACKGROUND.** Rehabilitation researchers have long regarded return to work as the “gold standard” by which to judge the success of the rehabilitation effort. Yet, while job acquisition following the suffering of a traumatic spinal cord injury (SCI) has been extensively studied, there has been almost total neglect of job retention. As job withdrawal represents a substantial – albeit less-visible – employment outcome, rehabilitation interventions that address job withdrawal are vital.

**OBJECTIVES.** To examine whether the theory of reasoned action (TRA) or the theory of planned behaviour (TPB) is a better predictor of intervention-participation intention.

**METHOD.** Using purposive sampling, 35 SCI participants completed a structured online survey to assess their beliefs about 10 interventions designed to minimise the influence of specific job-withdrawal factors (i.e. so as to enhance job retention).

**RESULTS.** The TPB was the better predictor of participation intention, except for two interventions (tele-rehabilitation services; pre-employment workshops on assertiveness, information, legal rights and networks) for which the TRA explained an equal amount of variance.

**CONCLUSION.** Application of the TRA and TPB conceptual framework provides rehabilitation professionals and policy-makers with rarely-reported evidence about potential intervention participation so as to more effectively guide public health decision-making.

## 1. INTRODUCTION

Although return to work is the ultimate index of successful injury rehabilitation for those of working age (see Rusk, 1949, Britell, 1991), within spinal cord injury (SCI) rehabilitation, post-injury employment has been especially valued (see, for example, Guttmann, 1976 and Levi, 1996) – not least for its central role in determining living standards (Lachowska & Woodbury, 2012) and for contributing to enhanced general health and well-being (see Murphy & Athanasou, 1999, Paul & Moser 2009). Yet an enduring and defining feature that distinguishes between those with and without SCI are differential employment rates (Krause, Sternberg, Maides & Lottes, 1998; Krause, Terza & Dismuke, 2010). Earnings from employment are reliably associated with intrinsic rewards such as improved subjective well-being (Hampton, 2004), quality of life and satisfaction (see Krause & Terza, 2006). Therefore, the loss of work post-SCI has extensive personal and socioeconomic implications (Lidal et al., 2007).

In Australia, approximately 47% of people living with SCI reported being employed at the time of post-injury assessment. However, a clear majority (63%) also reported that they had worked at some time post-injury, which implies a relatively high incidence of job loss following the initial return-to-work (RTW) (see Young & Murphy, 2009). A similar (and enduring) pattern has been reported in the U.S. (El Ghatit & Hanson, 1978; Krause & Anson, 1996; Krause & Broderick, 2006). In one study, although 48% of SCI survivors were employed at follow-up, 75% reported working at some time post-injury (Krause, 1992). Thus, job withdrawal may represent a substantial – albeit less visible – employment outcome obscured in traditional RTW studies, which commonly measure post-

injury RTW once only at various post-injury time-points (Ottomanelli & Lind, 2009).

Due to the positive intrinsic and extrinsic benefits of employment, job retention is a critical employment outcome to assess (Krause et al., 2008; Roessler, 2001). Unfortunately, most SCI research in this area has focused on factors that influence the resumption of work as opposed to the retention of work (Roessler, 2001). Furthermore, vocational rehabilitation research has traditionally concentrated on a limited number of demographic and injury-related factors, which typically account for only around 35% of the variance found for RTW (Krause, 2003; Murphy, Middleton, Quirk, de Wolf & Cameron, 2009). However, many of these factors (e.g., age, gender and time since injury) are non-modifiable and mostly serve to identify those who face the greatest challenges to obtaining employment (Trenaman, Miller & Escorpizo, 2014) and, of themselves, may be ‘insufficient’ employment predictors (Levi, 1996, p. 36). More recently, there has been a shift to examine a wider and more complex range of RTW factors, such as psychological, social, environmental and secondary health variables (Escorpizo, Miller, Trenaman & Smith, 2014; Krause & Pickelsimer, 2008; Krause & Terza, 2006; Lidal et al., 2007; Murphy, Young, Brown & King, 2003).

However, job acquisition does not ensure job retention (Krause, 1996) and different factors may be involved (Krause & Reed, 2009). For example, after controlling for key demographic, injury-related and educational characteristics, multivariate analyses revealed that pressure ulcers were negatively associated with job retention but not job acquisition (Meade, Forchheimer, Krause & Charlifue, 2011). Therefore, an examination of multiple, highly differentiated *job withdrawal* factors may result in more accurate identification of the

predictors of the career trajectories of SCI survivors (Murphy & Athanasou, 1994). Furthermore, examination of an extended battery of job withdrawal factors is more likely to identify those factors that are practically modifiable, as these can form the basis of vocational rehabilitation interventions (Trenaman et al., 2014).

While there is some evidence for the efficacy of interventions to enhance *job acquisition* post-SCI (Escorpizo et al., 2014), unfortunately, despite job retention services being identified as critical (Roessler, 2001), formal evaluations of *job retention* interventions are far fewer. However, a multi-centre prospective study reported that participation in a functional restoration intervention – which included work simulation, vocational enhancement and pain management components – resulted in higher rates of job retention (98% for the treatment group vs. 62% for the comparison group) (Burke, Harms-Constas & Aden, 1994). Therefore, research is urgently required to devise interventions that minimise specific job withdrawal factors, and to identify which of those interventions are most likely to be used.

Two closely-related theories that reliably predict behaviour are the theory of reasoned action (TRA) (Fishbein & Ajzen, 1975) and its later embodiment, the theory of planned behaviour (TPB) (Ajzen, 1991). The principal difference between the two theories is that the TRA assumes that behaviour is under volitional control (Ajzen, 2002) whereas the TPB accommodates situations in which the target behaviour is not completely under volitional control (e.g., unforeseen circumstances, others' actions) (Fishbein & Ajzen, 1975). Both theories posit that specific behaviours are determined by the intention to engage in that behaviour. While the TRA hypothesises that intention to engage in a specific behaviour is predicted

by attitudes and social norms only, the TPB extends this hypothesis by including a third factor, 'perceived behavioural control' (Ajzen, 1991). Therefore, intention to engage in a specific behaviour is stronger when (1) attitudes are favourable (2) subjective norms are positive and, according to the TPB, (3) perceived behavioural control is high (Ajzen & Albarracin, 2007). Both theories posit that other variables (e.g., background knowledge, experience and personality) indirectly influence behaviour through attitudes, norms and, in the case of the TPB, perceived behavioural control (Ajzen & Albarracin, 2007).

Unlike research on global dispositional constructs such as self-esteem and locus of control – which has failed to find a firm link with behaviour (see Ajzen & Albarracin, 2007) – the TRA and the TPB reliably predict a diverse range of behaviours, such as breast- vs bottle-feeding, smoking cessation and behaviours related to road safety (Elliott, Armitage, & Baughan, 2003; Guo et al., 2007; Ajzen, 2001). Comparatively fewer studies have examined the TPB in the vocational field (Arnold et al., 2006). Of those that have, the TPB has predicted intention to obtain employment as well as intention to withdraw from employment. In both cases, intention also predicted actual behaviour. For example, the TPB predicted intention to work for the National Health Service as a nurse, physiotherapist or radiographer, while intention predicted subsequent employment (Arnold et al., 2006). Among Navy personnel, turnover intention predicted actual job withdrawal behaviour. Furthermore, the traditionally-examined turnover predictor variables (i.e., job satisfaction, tenure and organisation commitment) did not add any additional variance over and above that of the three TPB predictors of intention (i.e., attitudes, norms and perceived behavioural control)

(van Breukelen, Van Der Vlist & Steensma, 2004).

Few studies have applied the TRA and the TPB to the SCI population in general and the SCI employment sphere in particular. As both the target group and the target behaviour require consideration when predicting behavioural intention (Finlay, Trafimow & Jones, 1997), both theories are potentially relevant to the present study. Due to the catastrophic nature of SCI, perceived behavioural control may be the over-riding issue, in which case (theoretically) the TPB will *always* be a better predictor of participation in job withdrawal interventions. Conversely, some interventions may be subject to greater volitional control than others (e.g., e-services). In these cases, the TRA may be as good a predictor as the TPB. In addition to the theoretical implications, social psychology information about intentions will assist intervention-implementation decisions among rehabilitation service delivery professionals. Therefore, the main aim of the present study was to examine whether the TPB or the TRA is the better predictor (i.e., explains more variance) of (retrospectively-assessed) intention to participate in particular

interventions judged by clinicians to be likely to enhance job retention.

## 2. METHOD

The present study reports results from the third stage of a larger three-phase research program on durable employment among people living with traumatic SCI (see O'Hare & Murphy, 2012, and 2016). In Stage 1 of the research project, SCI participants identified an extended range of factors that contributed to withdrawal from employment gained post-SCI. In Stage 2, clinicians and rehabilitation service professionals discussed (and proposed) interventions designed to minimise those job withdrawal factors that were significantly related to lower levels of current full-time employment and/or were reported by a majority of the Stage 1 sample. A total of 13 interventions (see Table 1) were formulated to minimise the influence of nine job withdrawal factors. In the present study (Stage 3), 10 of these interventions were evaluated by a new SCI sample. Some of the initial results of this Stage 3 study were reported in O'Hare & Murphy (2016), which also includes a full description of the Stage 3 study method.

**Table 1: Job Withdrawal Factors (Stage 1) and their Associated Interventions (Stage 2)**

Job withdrawal factors (Stage 1)	Proposed interventions (Stage 2)	
	No.	Description
Inadequate rehabilitation and vocational counselling programs	1	Hospital-based vocational unit dedicated to RTW
A mismatch with knowledge, skills and abilities	2	Thorough vocational and functional assessment by professionals trained in SCI issues
Lack of career progression and opportunities	3	Ongoing post-placement support
	4	Workshops on interview techniques and accessing hidden job market

Pain management	5	Additional post-placement physical workplace and equipment assessment
	6	Access to expert pain management team
Lack of workplace social support*	7	Employer/employee education re: provision of effective support to SCI employees returning to work
Workplace psychosocial issues and lack of emotional support	8	Tele-rehabilitation services for ongoing support, monitoring and peer-sharing
	9	Pre-employment workshops to equip SCI survivors re: assertiveness, information, legal rights and networks
	10	Establishment of social support e-networks (e.g., mentors, champions and peer-sharing)
Lack of reliable and consistent attendant care	11	Direct funding to SCI survivors to manage attendant care themselves
Lack of reliable public transport*	12	Fully accessible transport system
Lack of information for the self-employed*	13	Extensive database of appropriate referrals and specialist services related to self-employment

\*Interventions 7, 12 and 13 were excluded from the present analyses as they were aimed at others (employers /co-workers), related to infrastructure (transport system) or applicable to a minority of respondents (self-employed,  $n = 16$ ).

## 2.1. Sample

Using purposive sampling, 35 study-eligible participants completed a structured online survey. To be eligible, participants must have (a) sustained a traumatic SCI and (b) withdrawn from employment gained post-SCI, irrespective of their current employment status. The majority of the sample was male (77%), currently employed (69%) and aged from 20-29 years when injured. Forty-eight percent lived in a major metropolis. The majority of injuries resulted in quadriplegia (57%) and occurred from 2000-2009 (43%). Thus, the sample was broadly representative of the Australian SCI population in terms of gender, injury age and injury level (Cripps, 2006).

## 2.2. Measures

SCI participants completed an anonymous online survey which comprised

13 pairings of a job withdrawal factor with an associated potential intervention (see Table 1). Using a five-point Likert scale (ranging from '1' *strongly agree* to '5' *strongly disagree*), participants rated each potential intervention across six dimensions which assessed key constructs related to the TRA and the TPB. The online survey took approximately 30 minutes to complete.

### *Online Survey Design – Rating Dimensions*

The rating dimensions used to evaluate the proposed interventions assessed four constructs directly related to the TRA and the TPB: intention and the predictors of intention (i.e., attitudes, norms and perceived behavioural control). Details of the rating dimensions and how each related to the constructs specified within the TRA and the TPB have been provided in Table 3 of O'Hare & Murphy (2016),

### ***Independent variables***

**Attitudes.** Beliefs about the likely outcomes of a course of action influence attitudes towards that behavior. Attitudes are defined as evaluations of behaviour across dimensions such as favourable/unfavourable, like/dislike (Ajzen & Fishbein, 2000). Consistent with other research that operationalised attitudes as beliefs about the beneficial outcomes of a course of action (Sheppard, Kennedy & Mackey, 2006; van Hooft Born, Taris & van der Flier, 2004), the rating dimension that captured attitudes in the present study was, *I believe that the intervention would be a helpful method to assist SCI survivors to maintain their job.*

**Subjective Norms.** The perceived attitudes of relevant or referent others towards a course of action result in the formation of subjective norms (Ajzen, 1998). The rating dimension that captured subjective norms was, *I believe other SCI survivors would find this intervention a helpful method to maintain their job.* As the Australian SCI population is a relatively cohesive, chronic-condition group with a strong health-related identity, other SCI survivors were selected as a behaviourally-relevant peer group (Terry & Hogg, 1996) as they experience similar challenges and have a deeper knowledge of participants' circumstances. In this study, subjective norms measured others' perceived attitudes to the interventions and did not include the coercive component of subjective norms (i.e., group pressure to perform or refrain from a specific behaviour) (Miller & Grush, 1986).

**Perceived Behavioural Control** is the result of salient beliefs about the obstacles and resources that hinder or facilitate an individual's perceived ability to perform the course of action (i.e., participate in the intervention) (Jemmott & Jemmott, 2007). The rating dimension that captured perceived

behavioural control was, *I believe that the intervention would be a practical/feasible method to assist SCI survivors to maintain their job.* The more common operationalisation of perceived behavioural control as difficult/easy (Arnold et al., 2006) was inappropriate for the present study as all tasks – even common daily activities such as self-care – are difficult for people living with SCI.

### ***Outcome (dependent) variable***

The outcome variable was retrospectively-assessed intention to participate in the intervention (i.e., *had the intervention been available at the time of injury, I would have used it*). Operationally, a retrospective outcome measure of intention to participate was deemed necessary due to the irreversible and catastrophic nature of SCI, which requires rehabilitation immediately post-injury. Thus, a projected measure of intention to participate in the proposed interventions (i.e., *I would participate in the intervention*) would be redundant as well as potentially unstable. Theoretically, some level of temporal stability in intentions is assumed in the intention-behaviour relationship, whether it be the use of present or future intentions to predict (future) behaviour (Sheppard, Hartwick & Warshaw, 1988). However, the stability of intentions can be compromised by later information (Conner & Godin, 2007). Due to the benefit of hindsight and experience, a retrospectively-assessed measure of intention may provide a more accurate assessment of the antecedents of intention, such as updated beliefs about functional capacity post-SCI and perceived behavioural control. Greater accuracy, for example, of perceived behavioural control – which was assessed against a proxy measure of actual control – was associated with improved prediction of behaviour (Scheeran, Trafimow & Armitage, 2003) and is “the

variable most strongly related to stable intentions” (Conner & Godin, 2007, p. 875). Intention stability moderates the strength of the intention-behaviour relationship (Cooke & Sheeran, 2004; Sheeran, Orbell & Trafimow, 1999) and is also a “key index of intention strength” (Sheeran & Abraham, 2003, p. 205). Specifically, when intentions are unstable, they do not reliably predict behaviour – past behavior does. Conversely, when intentions are stable, they reliably predict behaviour, irrespective of past behaviour (Sheeran, et al., 1999). Finally, a longitudinal study concluded that retrospectively-assessed intention was not inferior to prospectively-assessed intention for measuring the extent of unintended fertility (Joyce, Kaestner, & Korenman 2000). Therefore, the use of retrospectively-assessed intention to participate in the interventions was judged appropriate for the present study.

### 2.3. Statistical Analyses

For the multivariate analyses, logistic regression was used to assess whether the TRA or the TPB was a better predictor (i.e., explained more outcome variance) of intention to participate in the interventions). Variance was assessed with Nagelkerke  $R^2$ . Due to the SCI sample size, all of the categories indicating agreement (i.e., *strongly agree* and *agree*) or disagreement (i.e., *strongly disagree* and *disagree*) with each of the six rating dimensions used in the online survey were collapsed into two broad categories (i.e., agree / disagree) for the purposes of analysis. *Neither agree nor disagree* responses were kept as a separate category (and excluded from the analyses). For both the TRA and the TPB, the binary dependent variable was retrospectively-assessed intention to participate (agree/disagree) in the proposed interventions (i.e., *had the intervention been available at the time-of-injury, I would have*

*used it*). For both the TRA and the TPB, the independent binary variables were attitude (*intervention is helpful* – agree/disagree) and subjective norm (*other SCI survivors would find the intervention helpful* – agree/disagree). For the TPB only, perceived behavioural control (*intervention is practical/feasible* – agree/disagree) was also included in the predictor set.

## 3. RESULTS

### 3.1. Intention to Participate in Interventions Designed to Minimise Job Withdrawal

Only 10/13 of the interventions evaluated in the online survey were included in the present analyses. The three excluded interventions were essentially extraneous, that is, they were related to infrastructure (transport system), aimed at others (employers/co-workers) or applicable to a minority of respondents (self-employed,  $n = 16$ ). Details about the absolute and relative “popularity” of each intervention have been reported in O’Hare & Murphy (2016), but, briefly, intention to participate was higher in interventions that were *e*-based, skill acquisition-based (i.e., interview techniques and accessing the hidden job) or focused on pain management.

Although the rank ordering differed, both the TPB and the TRA agreed on the top five job withdrawal interventions in which people living with SCI would be most likely to participate; specifically, these were:

#4: Workshops on interview techniques and accessing the hidden job market

#6: Access to expert pain management team

#8: Tele-rehabilitation services for ongoing support, monitoring and peer-sharing

#5: Additional post-placement physical workplace and equipment assessment

#10: Establishment of social support e-networks e.g., mentors, champions and peer-sharing

These five interventions addressed three critical job withdrawal factors, namely, lack of career progression and opportunities (intervention #4), pain management (interventions #6 and #5) and workplace psychosocial issues and lack of emotional support (interventions #8 and #10) (see Table 1).

### *Multivariate analyses*

In interpreting the results from the logistic regression analyses, the amount of variance in the outcome (intention to

participate) explained by the TRA versus the TPB was used to identify their relative predictive ability. Overall, the TPB was a better predictor of participation intention, except for two interventions for which the TRA explained an equal amount of variance (i.e., #8: *Tele-rehabilitation services for ongoing support, monitoring and peer-sharing* and #9: *Pre-employment workshops on assertiveness, information, legal rights and networks*). Thus, these two interventions were perceived as being more directly under participants' volitional control (i.e., they could decide to perform the behaviour at will). Both the TRA and the TPB explained a similar amount of variance (54% vs. 58%) for the second e-based intervention (#10: *Establishment of social support e-networks e.g., mentors, champions and peer-sharing*). However, for most of the remaining interventions with significant results, the TPB explained a far larger proportion of variance than did the TRA, indicating the importance of perceived behavioural control as a predictor of intention to participate.

**Table 2: Comparison of the TRA and the TPB to Predict Retrospectively-Assessed Intention to Participate in the Interventions**

No.	Intervention description	Theory of planned behaviour	R <sup>2</sup> †	Theory of reasoned action	R <sup>2</sup> †
4	Workshops on interview techniques and accessing the hidden job market	$\chi^2 (3, n=30) = 15.25^{**}$	.63	$\chi^2 (2, n=30) = 10.03^{**}$	.45
6	Access to expert pain management team	$\chi^2 (3, n=31) = 18.64^{***}$	.61	$\chi^2 (2, n=31) = 14.12^{**}$	.49
8	Tele-rehabilitation services for ongoing support, monitoring and peer-sharing	$\chi^2 (3, n=30) = 17.31^{**}$	.59	$\chi^2 (2, n=30) = 17.17^{***}$	.59
5	Additional post-placement physical workplace & equipment assessment	$\chi^2 (3, n=30) = 15.75^{**}$	.58	$\chi^2 (2, n=30) = 11.12^{**}$	.44
10	Establishment of social support e-networks (e.g., mentors, champions and peer-sharing)	$\chi^2 (3, n=30) = 13.84^{**}$	.58	$\chi^2 (2, n=30) = 12.54^{**}$	.54

11	Direct funding to SCI survivors to manage attendant care themselves	$\chi^2 (3, n=30) = 10.85^*$	.44	$\chi^2 (2, n=30) = 9.31^*$	.39
2	Thorough vocational and functional assessment by professionals trained in SCI issues	$\chi^2 (3, n=32) = 8.72^*$	.35	$\chi^2 (2, n=32) = 2.84$	.13
9	Pre-employment workshops to equip SCI survivors re: assertiveness, information, legal rights and networks	$\chi^2 (3, n=30) = 8.64^*$	.35	$\chi^2 (2, n=30) = 8.61^*$	.35
3	Ongoing post-placement support	$\chi^2 (3, n=31) = 3.48$	.15	$\chi^2 (2, n=31) = 3.27$	.14
1	Hospital-based vocational unit dedicated to RTW	$\chi^2 (3, n=31) = 3.14$	.13	$\chi^2 (2, n=34) = 1.65$	.07

Notes. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ . †  $R^2$  – Variance explained was assessed with Nagelkerke  $R^2$

#### 4. DISCUSSION

The aim of the present study was to determine whether the TRA or the TPB was the better predictor of participation intention. Results indicate that intention to participate was higher in interventions that were e-based, skill acquisition-based (i.e., interview techniques and accessing the hidden job market) or focused on pain management. The top five interventions in which participation was likely to be the greatest addressed three salient job withdrawal factors: (i) workplace psychosocial issues and lack of emotional support, (ii) lack of career progression and opportunities, and (iii) pain management. The TPB was the better predictor of participation intention, except for two interventions for which the TRA explained an equal amount of variance (i.e., tele-rehabilitation services; pre-employment workshops on assertiveness, information, legal rights and networks), indicating that participants believed these two interventions to be under their volitional control. Overall, however, attitudes, norms and perceived behavioural control strongly predicted

intention to participate in interventions designed to minimise job withdrawal following traumatic SCI.

#### Intention to Participate in Interventions that Minimise Specific Job Withdrawal Factors

*Workplace psychosocial issues and lack of emotional support.* According to the TPB, intention to participate in the three interventions (#8, #9 and #10) designed to minimise the job withdrawal factor, ‘workplace psychosocial issues and lack of emotional support’ was likely to be high. However, based upon intention, participation in the two e-based interventions is likely to be the highest (#8: *Tele-rehabilitation services for ongoing support, monitoring and peer-sharing* and #10: *Establishment of social support e-networks e.g., mentors, champions and peer-sharing*). As the amount of variance accounted for by the TRA was the same or similar to that of the TPB, SCI participants likely believed that participation in these two interventions was under their volitional control (i.e., they could decide to perform

them at will). Thus, participation in *e*-based interventions depended on the actor and, assuming affordable and accessible internet service, few practical constraints were anticipated. Due to accessibility, *e*-networks may be a viable alternative to the more traditional forms of social support and workplace social support by circumventing logistical obstacles for people living with SCI. The predicted high participation in *e*-based interventions may also be demographic as the majority of SCI cases in both the prevalence and incidence population are young males who are more likely to use technology. As an aside, the emphasis on peer sharing via *e*-networks also supports the validity of the use of other SCI survivors as the behaviourally-relevant referent group for assessing subjective norms in the present study.

*Lack of career progression and opportunities.* Two interventions (#3 and #4) were designed to minimise the job withdrawal factor, 'lack of career progression and opportunities'. According to the TPB, participation in the skill-acquisition-based intervention #4 (*Workshops on interview techniques and accessing the hidden job market*) is likely to be the highest of all the interventions. Being skill-acquisition-based, this intervention empowered people living with SCI. In stark contrast, participation in intervention #3 (*Ongoing post-placement support*) would be highly unlikely and intention to participate was the second lowest of all the interventions. Participants' comments to survey open-ended questions indicated a belief that ongoing placement and support from an onsite vocational rehabilitation professional was intrusive and drew unwelcome attention to their injury, which may unfavourably influence employers/co-workers' perceptions of their ability to perform the job. Thus, intervention #3 disempowered SCI employees in others'

sight. Of note, while *e*-based support was welcomed, physical onsite support from a vocational rehabilitation professional was not.

*Pain management.* According to the TPB, participation is likely to be high in the two interventions designed to minimise the effects of pain on job withdrawal: intervention #6: *Access to expert pain management team* and intervention #5: *Additional post-placement physical workplace and equipment assessment*. Each intervention tackled a different aspect of pain interference: #5 addressed environmental variables (i.e., physical workspace) while #6 addressed personal variables. Overall, the TPB explained approximately 60% of outcome variance for both interventions and was a substantially better predictor than the TRA, demonstrating that perceived behavioural control (practicality/feasibility) contributed additional variance to participation intentions.

### **The Relative Predictive Ability of the TRA and the TPB**

In the present study, relative predictive ability was indexed by the amount of variance explained by the TRA versus the TPB for participation intention. The predictive power of the TPB exceeded that of the TRA for most interventions, consistent with results from other research (Armitage & Connor, 1999). When the multiple correlation was significant, explained variance – which ranged from 35% to 63% – exceeded the 34% reported in a meta-analysis of nine meta-analyses of the variance in intentions for a wide range of behaviours (Conner & Sparks, 2005). The greater variance accounted for in the present study may be due to the targeted nature of the interventions, which were designed for specific job-withdrawal factors, as the

TPB was designed to predict specific behaviours in specific contexts (Ajzen, 1991). The superior predictive ability of the TPB versus the TRA found in the present study indicates that perceived behavioural control was the overriding issue for intervention participation among people living with SCI, except for three interventions that were either *e*-based (#9 and #10) or predominantly skill-acquisition-based (#9: *Pre-employment workshops to equip SCI survivors re: assertiveness, information, legal rights and networks*). As these three interventions are less affected by functional capacity, it is likely that the importance of perceived behavioural control for the other interventions is related to injury severity (i.e., greater injury severity would be associated with increased importance of perceived behavioural control).

### **Study Strengths and Limitations**

A strength of the present study was that participation intention was evaluated for a wide range of interventions rather than one specific intervention. Practically, this approach identified likely participation in interventions that addressed specific job-withdrawal factors, and also provides some guidance on where to spend the rehabilitation-intervention dollar. Although the sample was generally representative of the Australian SCI population across major indicators, a major limitation of the present study was the sample size in terms of the ratio of predictors to cases. Ideally, the present study results need re-examination using data from a much larger study – one involving at least 100 representative SCI participants, as per the sample-size recommendations of Tabachnick & Fidell, (1996) for multiple–correlation studies.

### **Future Research**

The present results indicate that, were interventions designed to minimise specific job withdrawal factors made available to SCI survivors earlier in their rehabilitation, they would be used. However, to optimise intervention participation, future research could examine in detail the relative contribution made by the antecedents of intention (i.e., attitudes, subjective norms and perceived behavioural control), which could be used to inform targeted planning strategies.

### **Conclusion**

Heeding the call for theory-driven rehabilitation research programs (Dunn & Elliott, 2008), the present study applied the conceptual framework of the TRA and TPB to predict intention to participate in interventions designed to minimise specific job-withdrawal factors post-SCI. As the application of theory both explains and predicts behaviour (Dunn & Elliott, 2008), the present results assist understanding of the factors that contribute to participation intentions, and also provide rehabilitation professionals and policy-makers with sound scientific evidence about potential participation levels in specific interventions to more effectively guide public health decision-making.

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