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The Perceived Complexity of Vocational Workplace Rehabilitation and its Implications for Supervisor Development

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This study explored the factors that influence the perceived complexity of vocational rehabilitation tasks and the abilities of workplace supervisors and rehabilitating employees to carry out rehabilitation in the workplace. The research project was designed to explore whether there was a difference between the perceived complexity of 31 vocationally related rehabilitation tasks as understood by 272 workplace supervisors and 80 employees who were undertaking workplace rehabilitation. By using a probabilistic measurement approach

(Rasch model), the study also sought to explore if there was an underlying dimension of the work-related rehabilitation tasks and whether the ability to undertake workplace rehabilitation tasks was influenced by the status and gender of the participants. Additionally, the study sought to assess whether a scale of performance for learning could be constructed, based on the difficulty of the rehabilitation tasks and the self-rated capacity of workplace supervisors and their rehabilitating employees. Outcomes of the study suggest that supervisors and rehabilitating employees differ significantly, both in how they view the complexity of vocational rehabilitation and their capacity to participate effectively in workplace rehabilitation. Recommendations are made for designing supervisor rehabilitation training programs in terms of their content and structure, in a bid to make workplace vocational rehabilitation more effective.

Rasch analysis, Partial credit model, Vocational rehabilitation,
Workplace rehabilitation, Attitude measurement

INTRODUCTION

Since the mid 1980s when various Australian state governments passed statutes influencing the management of employees injured at work, the success of workplace vocational rehabilitation has been debated (Kenny, 1994; Fowler, Carrivick, Carrelo and McFarlane, 1996; Calzoni, 1997). Factors that have served to detract from successful vocational rehabilitation in the workplace include confusion about how vocational rehabilitation can actually be measured, continued misinterpretations behind the real purposes of workplace rehabilitation, the utilisation of inappropriate models to inform vocational rehabilitation (Cottone and Emener, 1990; Reed, Fried and Rhoades, 1995) and resistance on the part of rehabilitating employees choosing not to participate in the rehabilitative process (Kenny, 1995a; Rosenthal and Kosciulek, 1996; Chan, Shaw, McMahan, Koch and Strauser, 1997). Further exacerbating these existing workplace rehabilitation problems is an over-arching expectation that

workplace supervisors manage the rehabilitating employee when they are often ill prepared for this task (Gates, Akabas and Kantrowitz, 1993). While supervisors may well be capable of identifying the required skill level of an employee for routine work tasks, considerably more ability is needed on the part of the supervisor, to match successfully job requirements to the capacity of an employee who is rehabilitating in the workplace. Moreover, in the presence of a rehabilitating employee in the workplace, the supervisor may be ill-prepared to deal with any hostility that may arise from other employees, who may be asked to relinquish their usual work roles in deference to the rehabilitating employee.

Other logistical supervisory difficulties can occur when the workplace is used in a rehabilitative context; for example, what actions must the supervisor take to preserve confidentiality about the rehabilitating employee's medical condition while simultaneously needing to instruct other staff about an employee's limitations? Kenny (1995a p.62) suggests that neither employees nor their employers have sufficient knowledge to negotiate their way around the workers' compensation maze.

In recent times there has been, and continues to be, considerable industry restructuring where fewer numbers of supervisors have greater responsibility for larger numbers of employees and this in turn, puts greater pressure on the workplace supervisor to juggle the needs of the rehabilitating employee against an increasing supervisory burden generally. If there are inadequate communication pathways between those stake-holders who are involved in vocational rehabilitation in the workplace, supervisors themselves may struggle and in turn may become stressed resulting in workplace bullying (Dal-Yob, Taylor, and Rubin, 1995; Kenny, 1995b; Garske, 1996; Calzoni, 1997; Sheehan McCarthy and Kearns, 1998).

There is also a lack of agreement between how the supervisor and the rehabilitating employee regard the purposes and processes of workplace vocational rehabilitation. Employees are often more aware than their own supervisors of the need to modify the work environment for rehabilitation purposes (Gates, Akabas and Kantrowitz, 1993). There are significant expectations that supervisors must manage the injured employee in such a way that meets their needs, accounts for any medical restrictions, manages the expectations of other employees and the employer, and all within an appropriate legal context.

Rehabilitation training in a vocational context is seen therefore as one essential mechanism to facilitate the role of the supervisor in the rehabilitative process and simultaneously emphasises that workplace rehabilitation is an adjunct to the successful treatment plan of injured employees (Pati, 1985).

This study seeks to strengthen this nexus by identifying and ranking how easy or difficult supervisors and rehabilitating employees find their expected roles in workplace rehabilitation. It also seeks to demonstrate that different hierarchies of workplace rehabilitation complexity exists between the groups and gender which in turn should be considered as a foundation on which to build future supervisor training in workplace rehabilitation.

METHOD

Participants

A total of 272 supervisors and 80 injured employees undergoing rehabilitation were involved in the study. Just over two thirds of the supervisors surveyed were male and the number of years supervisors had been in their supervisory role ranged from less than 12 months to more than 40 years (mean=11years and SD=7.3). The number of staff each

supervisor was responsible for ranged from less than two people to over 400 employees (mean= 45 staff and SD=63). Most of the supervisors surveyed were employed in the public sector and were expected by the employer to attend supervisory training in workplace safety as part of the employers' adherence to workplace safety legislation. The rehabilitating employees were also employed by the public sector at the time of the study and were also currently undergoing workplace rehabilitation for what were essentially physical injuries sustained earlier at work. Employees who had not been injured at work were excluded from the study. Seventy-one per cent of rehabilitating employees were female and they had been employed in their work areas ranging from less than one year to 36 years (mean=14 years and SD=9). Surveyed employees tended to come from work areas that had on average 26 other staff employed in their work area.

Instrument

Participants were asked to complete a confidential questionnaire by rating their capacity to perform 31 individual workplace rehabilitation tasks of differing complexity. Thirty-one items or statements relating to the rehabilitative context were generated and informed by the South Australian rehabilitation statutes of 1985, with advice taken from vocational rehabilitation consultants. Two questionnaires were generated, one each for the rehabilitating worker and the workplace supervisor. The content of the questionnaire for each group was essentially the same, altered only in terms of to whom the questionnaire was addressed, that is as the employee or supervisor. The rehabilitation context of the questions included the following:

- suitability of return to work duties,
- ensuring confidentiality of information about medical information,
- contact between supervisor and rehabilitating employee,
- dealing with negative feelings about the workplace and rehabilitation,
- involvement in job re-training,
- other staff's acceptance and assistance when an employee requires rehabilitation,
- securing equipment to assist in rehabilitation,
- understanding legal requirements and entitlements related to rehabilitation,
- communication with others outside the workplace rehabilitation setting (eg rehabilitation consultant, doctor, spouses, unions, claims management departments),
- rehabilitation documentation within the workplace,
- budget readjustment secondary to changes in work roles,
- gaining support from within the organisation,
- dealing with language diversity in the rehabilitation context, and
- dealing with conflict in the rehabilitation context.

Assumptions behind the construction of the questionnaire

Each of the 31 rehabilitation questions was posed to respondents using a four point Likert scale. Each participant was asked to rate each item using a numerical range from 1 to 4 indicating his or her perception of each rehabilitation item as either being a very easy task to do (1), a simple task to fulfil (2), a difficult task to do (3), or, a very hard task to carry out (4). This scale from 1 to 4 is seen as a continuum of increasing rehabilitative complexity as perceived by the different respondents.

Traditionally, each rehabilitation item responses would be analysed by being summed and items having high scores would then assumed to be the most difficult. Alternatively, the Rasch model challenges this assumption and takes the view that distances between the steps

(called thresholds) of the rating scale (that is the spaces between rating 1 to rating 2, between rating 2 to rating 3 and between rating 3 to rating 4) are not equidistant for any one rehabilitation item on the questionnaire or between the other rehabilitation items estimated on the questionnaire (Bond and Fox, 2001). The Rasch model assumes that the thresholds of complexity of each rehabilitation item identified by participants will be different according to the complexity of the rehabilitation item and the ability of the respondents. Using this approach, a conjoint measure can be constructed which aligns perceived ability of the respondents directly with the perceived complexity of each rehabilitation task. In other words, using a vertical semantic scale, the differing ability levels of respondents to undertake vocational rehabilitation at the differing levels of complexity to carry out rehabilitation tasks can be plotted together hierarchically.

It was assumed that there would be differences between supervisors and employees in their perceived complexity and abilities of undertaking workplace rehabilitation tasks and these differences would serve to highlight what content and possible leaning processes would be included in future supervisor rehabilitation training. Supervisor responses would also serve as a baseline measure of ability and could be compared after supervisory training had taken place at some future date, to see if learning had taken place: namely, that supervisor ability had increased and rehabilitation workplace tasks had become easier.

DATA ANALYSIS

In order to analyse the rehabilitation data the QUEST program (Adams et al. 1996) was used to estimate the perceived differences in the ease or complexity of rehabilitation tasks between the two groups and their perceived abilities to carry out the rehabilitation tasks.

Fundamental to the Rasch analysis model is the estimation of whether the individual rehabilitation items used in the survey are meaningful and valid in terms of describing just what the actual construct underlying rehabilitation is. In other words, are the rehabilitation items that were constructed and used in this survey individually and collectively meeting the same criterion (also termed unidimensionality) that underlies the construct related to vocational rehabilitation complexity and participant ability? This notion of unidimensionality is satisfied when the rehabilitation data derived from the survey fits the Rasch model and when the fit values for rehabilitation items and for the respondent's ability do not depart significantly from their expected values. If these criteria are satisfied, the data one said to have goodness of fit and in turn suggests that the model chosen to estimate the construct of rehabilitation complexity is valid (Smith 1996; Hambenton, 1991; Linacre, 1995). With reference to Figures 1 and 2 which represent the fit model of all rehabilitation items completed by workplace supervisors and rehabilitating employees respectively, all questions fit the Rasch model and have infit mean square values not greater than 1.30 or less than 0.77 (Adams et al; 1996).

These goodness of fit indices confirm that all the items used to estimate rehabilitation complexity and ability are valid and are individually and collectively describing the construct underlying vocational rehabilitation.

RESULTS

Differential item functioning between the groups: supervisor responses

Figure 3 displays the item ability estimates for supervisors. The logit scale, (a logarithm scale) which ascends next to the vertical line, indicates the level of complexity rated by the supervisors (for each of the 31 rehabilitation items). It should be noted that 0.0 on the logit scale indicates the average difficulty of the rehabilitation items and it is at this point that

there is an equal probability that supervisors would view those rehabilitation items as being seen as either easy or hard. As rehabilitation items ascend the logit scale, they are perceived as becoming increasingly difficult (from logit 0.0 to logit 4.0) by supervisors. Consequently, supervisors believe that they need more specialised rehabilitation skills in order to meet the demands of these rehabilitation tasks. Conversely, rehabilitation items that are charted on the lower levels of the scale (logit 0.0 to -4.0) are perceived by supervisors as becoming increasingly easy in ranking and supervisors believe less ability is required on their part, to meet these rehabilitation tasks.

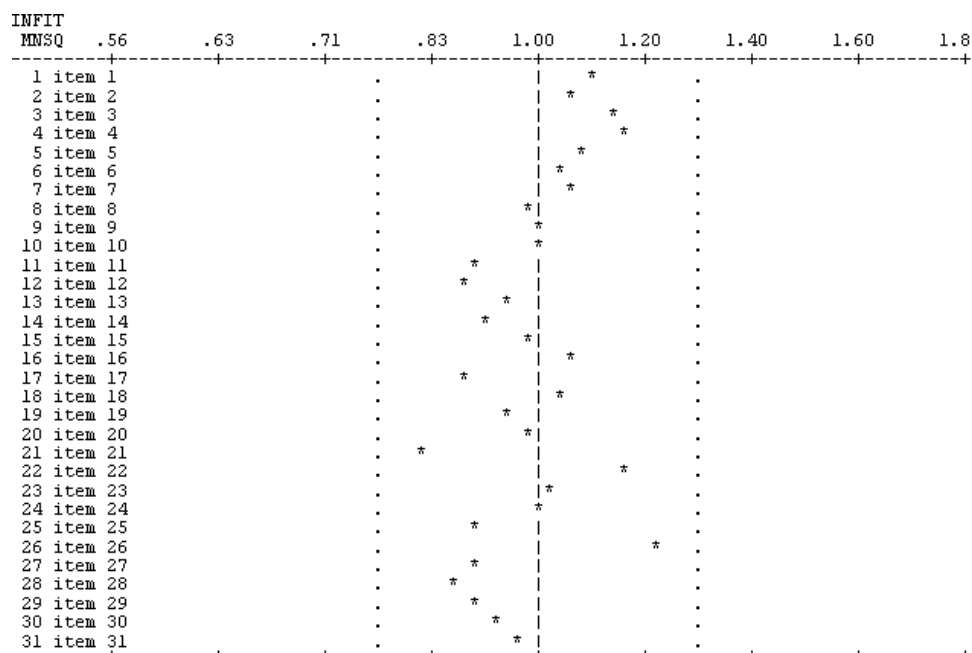


Figure 1. Fit indices for supervisor responses for all rehabilitation items

To the right of the logit scale are the rehabilitation items located in descending order from the most difficult rehabilitation items to the easiest. At the top of the logit scale (values of +4.0 and above) are the workplace rehabilitation Items 13, 19, 4 and 21 that attracted high scores and were seen as the most difficult of all rehabilitation tasks for workplace supervisors. In these instances, supervisors found it very difficult to find others in the workplace that could assist the rehabilitating employee (Item 13) and to report any difficulties they were having with vocational rehabilitation to their own supervisors in upper management (Items 19 and 12). There exists within the supervisory body a degree of negativity towards rehabilitation (Item 4) which they find very difficult to resolve personally. It is also very difficult for them to respond to complaints that rehabilitating employees may present to them (Item 21). Supervisors also find it difficult to find out what entitlements the rehabilitating employee would be entitled to (Item 8) and to find out what their organisation's policy was about rehabilitation (Item 18). Within this cluster of very difficult supervisory tasks are Items 11 and 23 which explore the complexity supervisors find in ensuring that a rehabilitating employee only does those work tasks that he or she is medically cleared to do and to liaise with the rehabilitation counsellor, respectively. Clearly supervisors from this study feel isolated and uncertain about their vocational rehabilitation roles particularly with respect to the needs of the employees and their own organisation. Item 2 examines the complexity supervisors experience in maintaining confidentiality about information concerning a rehabilitating employee and it illustrates the tension the supervisor must feel in having to preserve that confidentiality while simultaneously having to keep other employees and management informed of rehabilitation details employees are required to do.

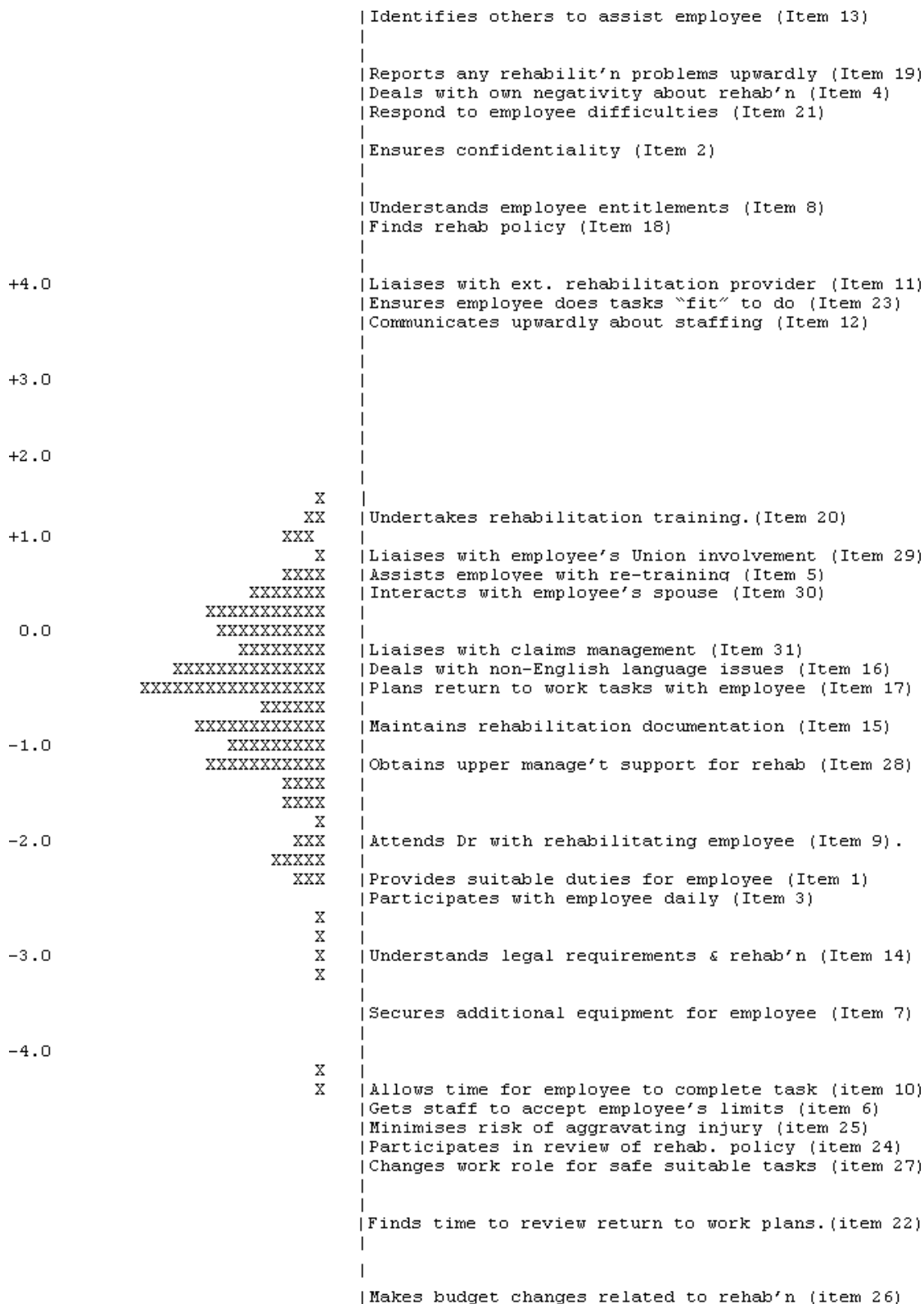
INFIT	.56	.63	.71	.83	1.00	1.20	1.40	1.60	1.8
MNSQ									
1 item 1					*				
2 item 2						*			
3 item 3						*			
4 item 4						*			
5 item 5				*					
6 item 6				*					
7 item 7					*				
8 item 8						*			
9 item 9					*				
10 item 10						*			
11 item 11						*			
12 item 12				*					
13 item 13						*			
14 item 14						*			
15 item 15						*			
16 item 16				*					
17 item 17			*						
18 item 18					*				
19 item 19				*					
20 item 20				*					
21 item 21			*						
22 item 22						*			
23 item 23					*				
24 item 24						*			
25 item 25				*					
26 item 26						*			
27 item 27						*			
28 item 28		*							
29 item 29						*			
30 item 30						*			
31 item 31			*						

Figure 2. Fit indices for rehabilitating employees responses for all rehabilitation items

Rehabilitation tasks located between the +1.0 to -1.0 rankings are viewed by supervisors as becoming increasingly easier to undertake in the workplace. Participating in their own supervisory rehabilitation training (Item 20), providing the rehabilitating employee with work-based training (Item 5) and interacting with the employee's union and spouse (items 29 and 30 respectively) have a higher probability of being seen as becoming easier as the rehabilitation items are located between the 0.0 to the -1.3 logit ranking.

Supervisors can find their liaison with claims management quite easy (Item 31) as well as dealing with rehabilitating employees who come from a non-English speaking (NESB) background (Item 16). Maintaining rehabilitation documentation and formulating return to work plans with the rehabilitating employee (Items 17 and 15 respectively) are also viewed as being easy tasks by supervisors.

Rehabilitation tasks located from -2.0 to -4.0 on the scale are perceived by supervisors as become progressively easier as the items are listed down the logit scale. Supervisors would therefore believe that they do not require complex workplace rehabilitation skills in order to achieve these tasks. Items at this level would include having to see the rehabilitating employee's doctor (Item 9), providing safe, appropriate duties for the employee (Item 1), securing additional equipment if required (Item 7) and briefly reviewing the employee on a daily basis (Item 3). Supervisors are reasonably comfortable with their understanding of the legal requirements associated with vocational rehabilitation (Item 14). The remaining seven rehabilitation items are located below the -4.0 logit scale and this suggests that there is a higher probability that supervisors find these tasks to be simplistic. Allowing the rehabilitating employee extra time to complete work tasks (Item 10), changing staff and job roles around to ensure the rehabilitating employee does not aggravate their existing injury (Items 6, 25, and 27) and finding time to review the employee's return to work plan (Item 22) are all seen as very easy rehabilitative tasks for supervisors. Making changes to their budgets to account for the presence of a rehabilitating employee is perceived by supervisors as the easiest of all the 31 rehabilitation tasks.



Each X represents 2 workplace supervisors. (N=272)

Figure 3. Workplace rehabilitation item estimates as rated by supervisors

Differential item functioning between the groups: rehabilitating employee responses

Figure 4 indicates how rehabilitating employees rated the complexity of their workplace rehabilitation. Alongside and above the +2.0 logit area are workplace rehabilitation items 15, 1, 10, 2, 16, 22, 9 and 11, which were viewed to be the most difficult tasks. Rehabilitating employees found it most difficult to ensure they had all the necessary documentation associated with their rehabilitation, ongoing salary and re-imburement of costs incurred for their employer (item 15). Items 1 and 10 reflect the rehabilitating employee's capacity to undertake the work tasks and do them within a certain time allocation during rehabilitation, were the next most difficult tasks. A cluster of most difficult rehabilitation tasks experienced by rehabilitating employees essentially revolves around communication expectations between employer and rehabilitating employee. Items 2 and 16 are rated as difficult, as employees are not confident that details about their rehabilitation will be kept confidential. Also if the rehabilitating employee uses English as a second language, it is believed that the workplace rehabilitation process is rendered even more difficult than it is for employees for whom English is a first language. Items 22, 11 and 9 are also rated as difficult for rehabilitating employees as they involve essential liaison with parties outside of the work place. Meetings with the medical officer and rehabilitation counsellor are a regular requirement for workplace rehabilitation and this can be problematic for the rehabilitating employee, particularly if the medical officer and rehabilitation consultant is not the choice of the employee, but that of the employer.

Rehabilitation items located between the 0.0 and the logit level of +1.5 are viewed as being easier than those located at the higher logit levels, however rehabilitating employees have a high probability in finding work that is not stimulating (Item 23), undertaking re-training (Item 20) and securing extra equipment to help while working (Item 7), to be difficult rehabilitation tasks overall.

Eighteen rehabilitation items are located from the logit ranking of 0.0 down through to the – 3.0 logit level, which reflects either increasing ease on the part of the rehabilitating employer to complete these tasks and a belief that less ability is required on their part to do them. Ten items are clustered closely around the logit level of 0.0 to –1.5 and suggest that almost 30 per cent of the rehabilitation tasks are perceived as being easy for rehabilitating employees. Dealing with unions and claims management (item 29 and 31 respectively), interacting with their own supervisor (Items 12, 17 & 21), making changes to personal budgets (Item 26), being able to change work roles and ensure that others in the workplace recognise that rehabilitating employees have limitations (Items 27, 5 & 6) are seen as being relatively easy tasks. Rehabilitating employees in this study do not experience significant problems advising management on problems they are experiencing at the workplace (Items 19, 28, 3 & 13). Two remaining rehabilitation tasks are viewed by rehabilitating employees as simple tasks and essentially involve knowing the organisational policies about rehabilitation and participating in efforts to modify them (Items 18 & 24).

The easiest of all rehabilitation tasks for rehabilitating employees was to keep themselves safe at work by avoiding work tasks that could aggravate their initial injury (Item 25).

	Complies with legal documentation (Item 15)
	Completes allocated work (Item 1)
	Take time to do allocated work (Item 10)
	Believes in employer confidentiality (Item 2)
	Understands Language at work (NESB) (Item 16)
	Finds time to review return to work plan (Item 22)
	Interacts with external rehab counsellor (Item 11)
	Attends Dr with supervisor/rehab counsellor (Item 9)
X	Does work that is not stimulating (Item 23)
X	
X	
XX	Undertakes re-training as part of rehab'n (Item 20)
X	Has extra equipment to assist at work (Item 7)
XX	
XXXX	
XXXXXXXXXX	
XXXXXXXXXX	
XXXXXXXXXX	Involves unions for advocacy (Item 29)
XXXXXX	Deals with claims department (Item 31)
XXXXXX	Advises supervisor about work volume (Item 12)
XXXXXX	Develops return to work plans with supervisor (Item 17)
XXXXXX	Learns skills about new job (5)// Budget adjustment(26)
X	Involves spouse in return work planning (Item 30)
XXXXXX	Swaps for safe jobs with others at work (Item 27)
XX	Understands entitlements assoc'd with rehabilit'n (8)
X	Meets legal requirements for rehabilitation (Item 14)
XXX	Gets supervisor to understand difficulties (Item 21)
	Gets others at work to understand limitations (Item 6)
XXX	Tells supervisor about difficulties (Item 19)
	Gets support from upper management (Item 28)
	Minimises negativity about rehab/employer (Item 4)
X	Deals with supervisor on daily basis (Item 3)
	Finds others at work to help (Item 13)
X	
	Finds out workplace rehabilitation policies (Item 18)
	Participates in workplace rehab. policy review (Item 24)
	Avoids work tasks that could aggravate injury (Item 25)

Each X represents 1 rehabilitating employee (N = 80)

Figure 4. Workplace rehabilitation item estimates as rated by rehabilitating employees

Comparing Group Differences

Figure 5 shows how each workplace rehabilitation activity is differentially perceived by workplace supervisors and rehabilitating employees. Eighteen rehabilitation items are perceived to be significantly different ($p < 0.05$) in terms of their complexity according to the status of the respondent i.e. whether the respondent was an employee or a supervisor.

These items fall outside the -2 to $+2$ indices depicted in Figure 5 and indicate that they have values greater than two standard errors from the mean of a normal distribution.

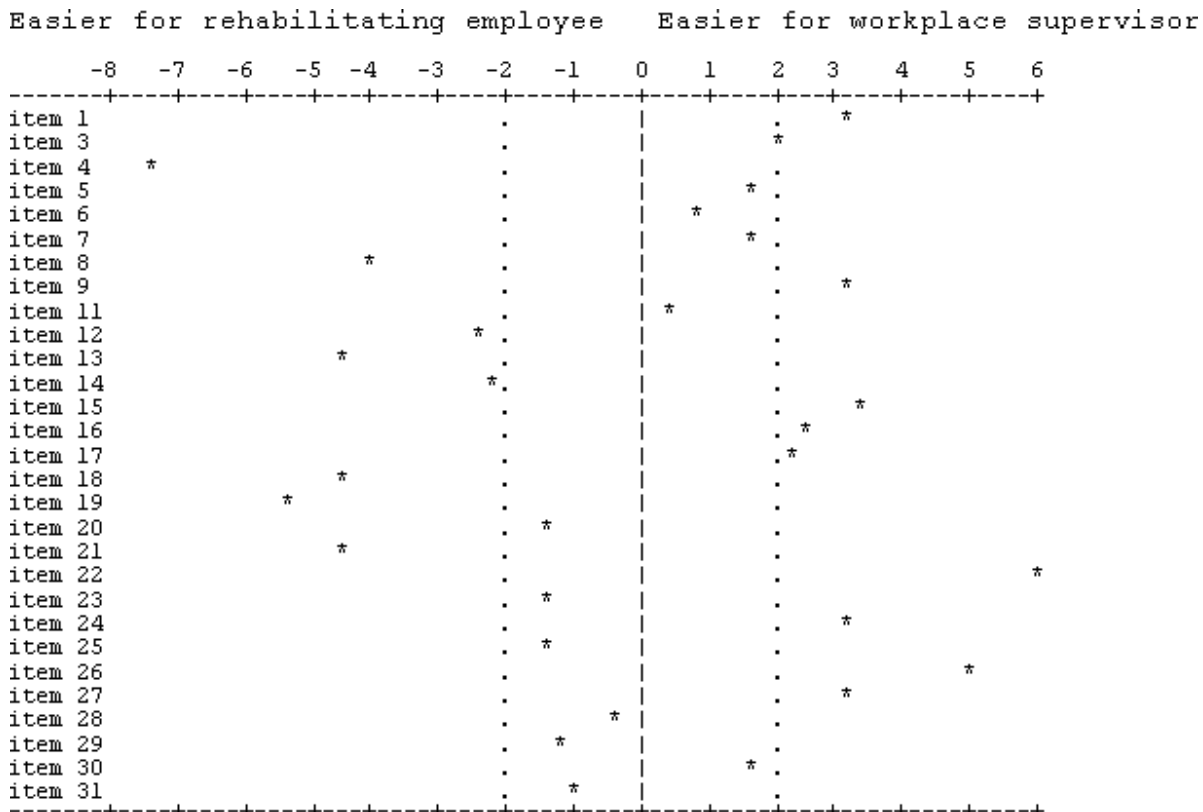


Figure 5. Plot of Standardised Differences between Workplace Groups and Rehabilitation Task Complexity

Easier Items for Rehabilitating Employees than for Supervisors

Again with reference to Figure 5, eight workplace rehabilitation items have a greater probability of being seen as significantly easier for rehabilitating employees than their supervisors. Item 4 considers the complexity with which the rehabilitating employee and the supervisor deal with their own negativity toward their workplace and workplace rehabilitation. The essential difference between the groups was that supervisors found it more difficult dealing with their own negativity toward the rehabilitating employee than the employee did toward the workplace where they had incurred the injury in the first place. Item 19 examines the complexity that both groups experience in communicating upwardly when workplace rehabilitation is not effective and rehabilitation difficulties are being experienced in the workplace. There is a greater probability for supervisors to be more reluctant to report rehabilitation difficulties upwardly to their own supervisors than do rehabilitating employees. The focus of Item 13 involves finding other people in the workplace who can assist the rehabilitating employee. The data suggest that there is a greater probability that supervisors would see this task as being more difficult to carry out compared to the rehabilitating employee. Item 18 considers how difficult it is for both groups to refer to the organisation's policy toward rehabilitation. This task was much easier for rehabilitating employees. Supervisor ratings were statistically different to that of rehabilitating employees in that they experienced greater difficulty in finding out just what the rehabilitation policy of their organisation was towards workplace rehabilitation and where they would go to refer to it for guidance. The relationship between the supervisor and the rehabilitating employee was the focus behind Item 21. When a rehabilitating employee

was having trouble at work and conveyed this to management, supervisors found it very difficult to respond to their need. Indeed, this was a most difficult task identified by supervisors but was less difficult for the rehabilitating employee. Significant also, was the fact that supervisors knew less about rehabilitation entitlements (Item 8) than the employees themselves. In terms of understanding the impact relevant rehabilitation statutes has on workplace rehabilitation, Item 14 demonstrates that rehabilitating employees have a greater probability of seeing this as an easier task than supervisors. Item 12 examines the complexity of dealing with the volume of work (productivity) and staffing needs when an employee is undertaking rehabilitation. Supervisors have greater difficulty asking their own upper management for more staff to compensate for the presence of a rehabilitating employee, than employees would of their own supervisors.

Easier Items for Supervisors than for Rehabilitating Employees

Figure 5 also indicates that ten workplace rehabilitation tasks had a statistically greater probability of being perceived as easier for supervisors than for rehabilitating employees. Item 22 is concerned with finding the time and the ability to review the work place rehabilitation contract on a regular basis. There is a high probability that supervisors would find this easier to do than rehabilitating employees. Budgetary and financial concerns are the focus of Item 26. Supervisors had a significantly higher probability that they perceive making adjustments to their own budget lines as being an easier task to deal with than the rehabilitating employees have in dealing with their own financial affairs when rehabilitating. The complexity of maintaining appropriate rehabilitation documentation is involved in Item 15. The findings suggest that rehabilitating employees have lower probabilities of seeing this activity as being very easy when compared to their supervisors. The complexity of involving themselves in reviewing what rehabilitation policies are used within their organisations is considered in Item 24. There was a higher probability for supervisors to view this activity as being either easy to very easy to do. Rehabilitating employees found this activity hard or very difficult to do in comparison. A similar pattern of responses was evident in Item 27, which measured the perceived difficulty of the group's ability to organise other employees to do different work to what they usually did, so that the rehabilitating employee could undertake safe and appropriate duties. While both cohorts showed similar response patterns overall, there was a higher probability for supervisors to view this task as being a very easy task, compared to employees.

Item 1 measures the relative ease or difficulty of finding and doing appropriate jobs that have been medically sanctioned for rehabilitating employees. Supervisors showed a greater probability for this task to be seen as either simple or quite easy. Employees undergoing rehabilitation disagreed significantly and found it more difficult actually to do the work that was allocated to them during rehabilitation. The meeting of the key players in the rehabilitation process was the focus of Item 9. There was a greater probability for the supervisor to perceive the task of meeting with the rehabilitating employee together with his or her doctor(s) as a very easy task. Dealing with language diversity in the rehabilitation process was perceived by workplace supervisors as being a significantly easier task than for rehabilitating employees. Item 16 examines the complexity of being understood in the workplace if a rehabilitating employee uses English as a second language. Employees believed that being understood in a rehabilitative context in the workplace would be a predominantly difficult task. The ease with which a supervisor consulted with a rehabilitating employee about developing a return to work plan differed also for Item 17. In this case there was a higher probability that the supervisor would find this an easier task than the employee who was rehabilitating. Daily contact with each other when undertaking workplace rehabilitation (Item 3) was perceived as being significantly easier for supervisors.

Gender Differences

Figure 6 examines the effect gender has on the capacity of the supervisor to deal with different workplace rehabilitation tasks. Four rehabilitation items are significantly different ($p < 0.05$) in terms of their perceived complexity according to the status of the respondent i.e. whether the supervisor was male or female. These rehabilitation items fall outside the -2 to $+2$ indices and suggests these items were greater than 2 standard errors from the mean of a normal distribution.

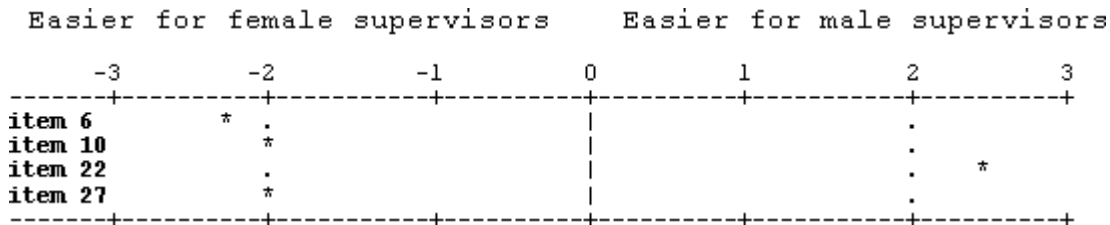


Figure 6. Plot of Standardised Differences between Supervisor Gender and Workplace Rehabilitation Task Complexity

Item 6 is concerned with the complexity of getting the rest of the work group to accept that a rehabilitating employee will have some limitations in terms of the types of work that can be done. This can often mean that all other employees in the workplace too may have to accommodate for the presence of a rehabilitating employee in their immediate area of work. The gender of the supervisor is significant here because women supervisors find this task easier to deal with.

Similarly with Item 10, female supervisors differ significantly from males in allowing the rehabilitating employee a greater degree of flexibility in the time taken to do work tasks. They also perceive the ability to negotiate with workplace staff to give up their traditional job roles to allow the rehabilitating employee to do their safe and suitable duties as an easier task. Male supervisors on the other hand, rate the task of finding time to review regularly the formal return to work program (Item 22) as being significantly easier than their female counterparts. This process (as prescribed by related statutes) requires the employer to meet with the rehabilitating employee for the purpose of negotiating appropriate workplace duties and a contract (a return to work plan) is generated. In dealing with union representation that supports the rehabilitating employee (Item 27), female supervisory staff have a significantly greater probability of seeing this as an easier task than the male supervisor.

DISCUSSION

Different learning needs and strategies required for supervisor development

The focus of future rehabilitation training for supervisors is clearly indicated by the outcomes of the surveys from both groups of respondents. It is also likely that different teaching and learning strategies would be necessary to maximise supervisor learning, depending on the nature and the perceived complexity of the individual rehabilitation item being considered. In the case of the supervisors who find it difficult to deal with their negativity towards rehabilitating employees, there needs to be opportunities for their stereotypical views about rehabilitation to be challenged. It is particularly necessary for those supervisors who find it difficult to respond to employees who are having rehabilitative problems in the workplace, to have opportunities to discover ways to respond to their employees. A recent United States study of rehabilitation supervisors indicated they were very confident of this task and the study does support the idea of supervisors doing

leadership development for this purpose (Fabian et al. 2001). Unlike their supervisors, rehabilitating employees in this study indicate that it is easy for them to state their difficulties to their supervisor so supervisor training programs need to emphasise and encourage the supervisor to develop a repertoire of strategies that can be used in dealing with employee complaints. Such strategies might be as simple as using greater application of listening skills or knowing when to refer the rehabilitating employee to another person for assistance or encouraging the rehabilitating employee to take more control over the rehabilitating process in the workplace by fostering empowerment. These are examples of training issues relating to the relationship between supervisor and the rehabilitee and didactic teaching practices would only have limited value here. Learning processes that encourage the supervisor groups to reflect on successful strategies would be one of many possible alternatives.

Knowing what entitlements a rehabilitating employee was reasonably allowed was difficult for supervisors in this study. This reflects an absence of fundamental rehabilitation knowledge that can be easily acquired. As the law informs most vocational rehabilitation practices, training about relevant statutes would be seen to be important to counter this difficulty. Since the data have suggested that supervisors have difficulty attending training, essential rehabilitation information can be delivered externally such as with external learning packages or by employing the Internet and be delivered over a short duration but offered frequently, to capture as much of the supervisor population as possible. Unless the rehabilitation training program meets the supervisor's needs and has credibility (grounded in the realities of the workplace) supervisors are not likely to attend, diminishing opportunities for them to increase their rehabilitation effectiveness. Training around areas of significant differences of opinion between the two groups is critical. These differences become areas for potential conflict, which in turn might diminish the effectiveness of workplace rehabilitation. While the data show that supervisors have little difficulty in allowing the rehabilitating employee to take time to do work tasks, these responses were in marked contrast to rehabilitees who felt this was a considerably difficult task.

Supervisors also stated that they would have little difficulty in managing their own workplace budget including accounting for the costs of rehabilitation. This was not the case with employees where any actual or threatened partial loss of salary or prolonged waiting for financial re-imburement from the employer was a major concern for rehabilitating employees. These examples serve to illustrate that potential areas of friction can be minimised by increasing supervisor awareness during rehabilitation training.

Addressing legal aspects of rehabilitation needs to be considered in any future rehabilitation training. It has already been identified that supervisors experience difficulty in understanding the nature of an injured employee's entitlements when undertaking vocational rehabilitation. This picture is consistent with recent British studies, where occupational rehabilitation has been neglected because there is very little guidance to be derived from statutes and where "the legal people were fighting among themselves, one to try to get the most money, one fighting to give away the least and the injured person was left to the NHS" (Merfield, 2001; Tanner, 2001).

In certain instances, the rehabilitating employees' perceptions of the rehabilitation process can be viewed as a valuable learning resource to inform rehabilitation training for supervisors. Supervisors indicated that it was difficult for them to identify support mechanisms among the work team to assist the rehabilitating employees. Rehabilitating employees on the other hand, stated that this was an easy task and future training programs could therefore incorporate some of the employee's ideas and strategies using a problem solving approach.

Supervisor gender was an important variable influencing workplace rehabilitation as several rehabilitation tasks were seen to be easier for women supervisors than for men. Generally, the data suggest that women in this sample tend to be more comfortable with the relationship skills associated with workplace rehabilitation, such as dealing with unions, spending time with a rehabilitating employee in discussion about rehabilitation and encouraging them to work more at their own pace. This finding is also supported by a recent Canadian study where female supervisors seemed relatively more comfortable than male supervisors in dealing with the emotive issues associated with the rehabilitating experiences in the workplace (Kirsch, 2000). Rehabilitation training programs would be well advised to explore how male and female supervisors could be employed better in the workplace in the rehabilitation context by using experiential educative approaches, such as getting supervisors from both genders to reflect on how they deal with conflict in the workplace using group method approaches.

Four other rehabilitation items remain important for consideration for incorporation into any future rehabilitation training program. Item 5 examined the complexity with which both groups perceived their abilities to retrain or develop new skills through the rehabilitation process. The data suggest that this is not a major priority for either the supervisor or rehabilitee. The possible reason for this might be because workplace rehabilitation, which involves workplace training, is viewed generally as being beyond the skills of most workplace supervisors. Alternatively, another explanation could be that the rehabilitation process is best served by keeping the rehabilitating employees engaged in simplistic workplace tasks which do not require them to undertake any additional training or maximise their existing potential. These ideas need to be explored as a fundamental part of supervisor training because these practices serve only to hamper rehabilitation as the employee is not engaging with work tasks that are better matched to their rehabilitative capacity and other work staff are possibly being under utilised.

The complexity of interacting with or employing a rehabilitation consultant was one focus of the study and these personnel work in conjunction with the employer and the rehabilitating employee. Supervisors who are essentially middle line managers may not be aware of this resource or not in a position of authority to engage one. Rehabilitation training programs could focus on explaining the advantages of the rehabilitation consultant, especially in assisting the supervisor to deal with rehabilitation tasks that are seen as difficult for them. This initiative would also lead to more effective work place rehabilitation.

While both the supervisor and the rehabilitating employee agreed that it was easy to refrain from doing things at work that would be seen as 'risky' or could exacerbate the original injury, there was no agreement between the groups related to identifying, allocating and actually doing the work. Rehabilitation training programs need to encourage supervisors to be flexible in identifying suitable and safe work tasks. This notion is also supported from recent studies in the United States, where supervisor participants who engaged in a short course of leadership skills development (as applied to rehabilitation) became more active in and vigilant towards the needs of their team members and less laissez-faire toward the rehabilitation process (Corrigan, Lickey, Campion and Rashid, 2000). Another strategy that could be employed in any rehabilitation training program would be to encourage supervisors to explore how a greater diversity of job choices could be generated which rehabilitating employees could undertake during rehabilitation. Alternatively, supervisors might need more assistance in determining what workplace tasks are best suited to a rehabilitating employee as they progressively improve.

There is increasing recognition that an employee injured and undergoing subsequent vocational rehabilitation at work will have limitations not only at work but also socially.

Vocational rehabilitation impacts not only on the employee but also on any employee's personal relationships and the complexity of involving spouses or partners in a return to work program can also be complex. Future rehabilitation training programs can encourage supervisors to reflect on instances and practices where family involvement could be helpful for the vocational rehabilitation process as spousal support is usually significant for rehabilitative success (Kenny, 1995b).

CONCLUSION

This study explored the factors that influence the complexity of vocational rehabilitation tasks and the abilities of workplace supervisors and rehabilitating employees to carry out rehabilitation in the workplace. The research project employed the probabilistic model to analyse the workplace supervisors' and employees' responses and locate the perceived abilities of both groups with respect to the complexity of the vocational rehabilitation tasks on the same scale. This approach of conjoint measurement identified a hierarchy of rehabilitation complexity particularly as applied to the two workplace groups and provides a tangible framework from which to propose a meaningful rehabilitation training program for supervisors. Additionally, the model used for data analysis measured unidimensionality, goodness of fit of the rehabilitation tasks, and ability parameters of both the supervisors and rehabilitating employees in order to maximise the validity and reliability of the results. The outcomes of the study suggest there were significant differences in the rehabilitation abilities of both groups and this diversity should be employed to inform any future rehabilitation training program for supervisors, both in terms of its content and learning processes.

REFERENCES

- Adams, J.J. & Khoo, S. (1996) *Quest: The Interactive Test Analysis System*.
- Australian Council for Educational Research. Camberwell. Victoria. Version 2.1
- Bond, T. & Fox, C. (2001) *Applying the Rasch Model: Fundamental Measurement in the Human Sciences*. Lawrence Erlbaum Associates, Publishers. Mahwah, New Jersey.
- Calzoni, T. (1997) The Client Perspective: The Missing Link In Work Injury And Rehabilitation Studies. *Journal of Occupational Health and Safety of Australia and New Zealand*.13(1), 47-57.
- Chan, F., Shaw, L., McMahon, B., Koch, L. & Strauser, D. (1997) A Model for Enhancing Rehabilitation Counsellor-Consumer Working Relationship. *Rehabilitation Counselling Bulletin*, 41(2), 122-137.
- Corrigan, P., Lickey, S., Campion, J. & Rashid, F. (2000) A Short Course in Leadership Skills for the Rehabilitation Team. *Journal of Rehabilitation*, 66(2), 56-58.
- Cottone, R.R. & Emener, W.G. (1990) The Psychomedical Paradigm of Vocational Rehabilitation and Its Alternative. *Rehabilitation Counselling Bulletin*, 34(2), 91-102.
- Dal-Yob, L., Taylor, D. W. & Rubin, S. E. (1995) An Investigation of the Importance of Vocational Evaluation Information for the Rehabilitation Plan Development. *Vocational Evaluation and Work Adjustment Bulletin*, 33-47.
- Fabian, E. & Waugh, C. (2001) A Job Development Efficacy Scale for Rehabilitation Professionals. *Journal of Rehabilitation*, 67(2), 42-47.
- Fowler, B., Carrivick, P., Carrelo, J. & McFarlane, C. (1996) The Rehabilitation Success Rate: an Organisational Performance Indicator. *International Journal of Rehabilitation Research*, 19(4), 341-343.
- Garske, G. G. (1996) The Relationship of Self-esteem to Levels of Job Satisfaction of Vocational Rehabilitation Professionals. *Journal of Applied Rehabilitation Counselling*, 27(2), 19-22.

- Gates, L.B., Akabas, S.H. & Kantrowitz, W. (1993) Supervisor's Role in Successful Job Maintenance: A Target For Rehabilitation Counsellor Efforts. *Journal of Applied Rehabilitation Counselling*, 60-66.
- Hamberton, R.K., Swaminathan, H. & Rogers, H.J. (1991) *Fundamentals Of Item Response Theory*. Sage Publications. Newbury Park.
- Kirsch, B. (2000) Work, Workers and Workplaces: A Qualitative Analysis of Narratives of Mental Health Consumers. *Journal of Rehabilitation*, 66(4), 24-30.
- Kenny, D. (1994) The Relationship Between Worker's Compensation and Occupational Rehabilitation. *Journal of Occupational Health and Safety of Australia and New Zealand*, 10(2), 157-164.
- Kenny, D.T. (1995a) Common Themes, Different Perspectives: A Systemic Analysis of Employer-Employee Experiences of Occupational Rehabilitation. *Rehabilitation Counselling Bulletin*, 39(1), 54-77
- Kenny, D. (1995b) Barriers to Occupational Rehabilitation: An Exploratory Study of Long-term Injured Employees. *Journal of Occupational Health and Safety of Australia and New Zealand*, 11(3), 249-256.
- Linacre, J.M. (1995) Prioritising Misfit Indicators. *Rasch Measurement Transactions*, 9(2), 422-423.
- Merfield, H. (2001) Working Wonders. *Nursing Standard*, 15(21), 17-19.
- Pati, G.C. (1985) Economics of Rehabilitation in the Workplace. *Journal of Rehabilitation*, 22-30.
- Reed, B.J., Fried, J.H. & Rhoades, B.J. (1996) Empowerment and Assistive Technology: The Local Resource Team Model. *Journal of Rehabilitation*, 30-35.
- Rosenthal, D. & Kosciulek, J. (1996) Clinical Judgement and Bias Due to Client Race or Ethnicity: An Overview for Rehabilitation Counsellors. *Journal of Applied Rehabilitation Counselling*, 27(3), 30-36.
- Sheehan, M., McCarthy, P. & Kearns, D. (1998) Managerial Styles During Organisational Restructuring: Issues For Health and Safety Practitioners. *Journal of Occupational Health and Safety of Australia and New Zealand*. V.14.N.1.pp.31-37.
- Smith, R. (1996) A Comparison of Methods for Determining Dimensionality in Rasch Measurement. *Structural Equation Modelling*, 3(1), 25-40.
- Tanner, A. (2001) UK Health and Safety is not Working Wonders. *Nursing Standard*, 15(23), 31-32.