LIVING WITH THE FACTS, NEGOTIATING THE TERMS: UNREALISTIC BELIEFS, DENIAL, AND ADJUSTMENT IN THE FIRST YEAR OF ACQUIRED PHYSICAL DISABILITY

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This study examined the correlates of unrealistic beliefs about spinal cord injury (SCI), denial tendencies, and defensiveness over the first year following injury onset (N = 40). Individuals were interviewed at three different times after their return to the community. Specific overly optimistic beliefs about SCI were not associated with any index of adjustment at the first two assessments; however, these beliefs were associated with greater distress and perceived handicap 1 year following return to the community. Greater denial and defensiveness were consistently associated with less distress, hostility, and perceived handicap at each assessment. No self-report variables were associated with the occurrence of preventable secondary complications diagnosed 1 year following discharge from the rehabilitation unit. Results are discussed as they pertain to models of reality negotiation and adjustment to the onset of severe physical disability.

Despite long-standing assumptions about the necessity of accurate reality contact as a prerequisite for "mental health" (Jahoda, 1953; Vaillant, 1977), considerable evidence indicates that people may harbor many biased—if not illusory—perceptions of themselves, their future, and their environment (Taylor & Brown, 1988). At times, these beliefs appear to be simply overly optimistic and self-enhancing (Regan, Snyder, & Kassin, 1995; Roth, Snyder, & Pace, 1986); on other occasions, "positive illusions"
seem to serve a motivational purpose to aid a person under general conditions and in times of duress (Taylor & Brown, 1988; Taylor, Collins, Skokan, & Aspinwall, 1989; Taylor & Gollwitzer, 1995).

Maintaining positive beliefs about the self and one's future under conditions threatening to the self has been described as a reality negotiation process, in that an individual will use certain cognitive strategies to preserve a sense of well-being, maintain an optimal emotional tone, and increase linkages with an optimistic outcome (Snyder, 1989). In this process, individuals may attend to certain realities of their situation, but they may also selectively ignore or reinterpret negative facts until new goals are identified or until they are able to accommodate the experience into a new, expanded sense of self (Snyder, 1989; Taylor & Brown, 1988; Wright, 1983).

Critics of this literature believe that differences can still be found between "normal" individuals who are able to effectively monitor reality without distorting it and those who engage in "pathological denial" while operating behind a facade of normalcy. According to this perspective, those who distort reality will still appear angry, anxious, and disturbed on indirect and subtle measures of these behaviors. In addition, such individuals may eventually develop physical health problems, since they misrepresent physiological indices of their distress that contribute to illness (Colvin & Block, 1994; Shedler, Mayman, & Manis, 1993). In this fashion, truly "healthy" individuals can be distinguished from those who engage in "pathological denial."

Cross-sectional research indicates that individuals with severe and chronic debilitating conditions engage in reality negotiation processes (Elliott, Witty, Herrick, & Hoffman, 1991; Lewis & Kliwer, 1996; Taylor, 1983). Furthermore, evidence suggests that these processes operate in a dynamic fashion. Individual attributions for responsibility and blame for the onset of physical disability can fluctuate considerably over time, and these changes may not be consistently related to corresponding levels of psychological adjustment (Hanson, Buckelew, Hewett, & O'Neal, 1993; Reidy & Caplan, 1994; Richards, Elliott, Shewchuk, & Fine, 1997). Individuals who have higher levels of hope and goal-directed energy may display a heightened sense of accomplishment after prolonged exposure to stressful conditions (Sherwin et al., 1992). An
enhanced sense of self may have beneficial effects on psychological adjustment soon after the onset of severe injury, but the palliative aspects of this process may wane the longer an individual lives with the realities of physical disability (Elliott et al., 1991). As the situation and the condition grow in familiarity, and as the individual gains more information about the condition and options become apparent for adaptive coping and for developing personal meaning, a sense of goal-directed energy may then exert a more positive influence on personal adjustment and societal reintegration (Elliott et al., 1991).

These data imply, then, that in the face of a permanent debilitating condition, a denial of certain aspects of the condition and its concomitants may serve an adaptive function soon after the onset of disability. Over time, however, continued investment in this social-cognitive activity may occur at the expense of one's well-being and psychosocial adjustment: Those who remain preoccupied with the "denial" of the injury or its concomitants may also display greater distress and handicap as they fail to attend to self-care regimens, learn new coping skills, or capitalize on available therapies and community resources that might enhance recovery. These persons would then have more difficulty in expanding personal values and beliefs that incorporate the condition into a new sense of self. These issues, in turn, would be manifested in increased problems with community mobility, personal maladjustment, and the occurrence of preventable secondary complications mediated by behavioral pathways (e.g., skin breakdown, unplanned hospitalizations).

Several theorists have recognized the utility and complexity of denial, and most do not construe denial as a simple, monolithic construct. Lazarus (1983) has urged thoughtful distinction between denial of fact (e.g., "I do not have paralysis") and denial of implication (e.g., "I will walk again"). Similarly, theorists recognize that these denials typically fluctuate and may be responsive to an array of idiosyncratic variables, and presumably these mechanisms serve to guide an individual's behavior and expectations in the face of an unknown and ambiguous future following trauma (Breznitz, 1983; Lazarus, 1983; Lazarus & Golden, 1981). Nevertheless, clinicians readily suspect maladjustment in a patient who verbally disavows any aspect or implication of acquired disability and who voices
unrealistic optimism about his or her condition (Caplan & Shechter, 1987). Clinic staff may be more concerned with potential disruption to prescribed therapies and intervention plans than the phenomenological perspective of the patient; staff members may also lack insight into their own limitations in recognizing healthy coping among persons under extreme stress, since they are primarily trained to serve those who evidence maladjustment (Caplan & Shechter, 1987).

We examined the correlates of denial and unrealistic beliefs among individuals with newly acquired paralysis over the course of 1 year. Based on prior research, we expected denial and overly optimistic beliefs to be related to indices of depressive behavior, hostility, and perceived handicap. We were less certain, however, regarding the direction of these relationships over time. We anticipated that denial would be positively correlated with unrealistic beliefs; we also assumed that unrealistic beliefs would be associated with less distress soon after injury onset. This relationship might reverse over time, individuals who persist in these beliefs might become frustrated and upset as the permanence of the disability becomes apparent over the course of the first year postinjury. We were concerned as well that unrealistic beliefs and denial over time would be associated with the incidence of preventable secondary complications at the end of the first year. Therefore, we also examined the relationship between denial and unrealistic beliefs with the documented occurrence of skin breakdown at the end of the first year postinjury.

**Method**

**Participants**

Participants were 40 persons with traumatically acquired spinal cord injury (SCI) admitted to an inpatient rehabilitation program. The sample was predominantly Caucasian (78%) and male (72%). The average age (29.5 years) was reflective of individuals with acquired SCI in the general population (Stover, Whiteneck, & DeLisa, 1995). Consecutive patients were approached for participation; those with a documented medical and/or family history of
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preexisting psychiatric disturbance or clear evidence of cognitive dysfunction (determined through neuropsychological screening) were excluded from participation. Physical evaluations conducted by board-certified physiatrists indicated that 24 of the study participants had complete spinal cord lesions, 4 had preserved sensation only, 10 had preserved nonfunctional motor ability, and 1 had preserved functional motor ability after SCI.

Procedure

Participants were visited at their home 3 weeks following discharge from inpatient hospitalization. A trained examiner—who also had an SCI—conducted all interviews. Informed consent was obtained; confidentiality and anonymity were assured for each patient. In situations in which participants had insufficient hand function to complete forms independently, questionnaires were set on a reading stand, and participants read items silently and dictated simple responses to the interviewer. The interviewer returned to the home of each participant 3 months following discharge from the hospital and again at 1 year following discharge. Thus, three administrations of all instruments and questionnaires were conducted.

Measures

Unrealistic Beliefs

Two scales were used to assess unrealistic beliefs that could represent “denial of implication” of the injury as described by Lazarus (1983). Three items were administered at each assessment to obtain an index of overly optimistic beliefs about the injury and possible recovery: “Do you believe your spinal cord injury is permanent?” “Do you believe your SCI will heal itself?” and “Do you believe you will walk again?” Each item was answered in a yes/no format (yes = 1, no = 2 [with the order of scoring reversed for the first item]). Alpha coefficients obtained for this measure indicated sufficient internal consistency at each assessment for use in data analysis (.55, .58, and .74, respectively). A total score for
unrealistic beliefs was calculated by summarizing the results of the three items. Lower scores on this measure indicate more unrealistic beliefs about the injury. A second indicator of unrealistic beliefs was obtained by the following probe: "What is the probability that you will walk again in the future?" Respondents were required to report the percentage to which they believed they would definitely walk again in the future (0% to 100%). This was assessed at each interview.

**Denial**

A denial scale, composed of 33 items from the Minnesota Multiphasic Personality Inventory (MMPI), was used to assess pathological denial among participants at each evaluation (Haan, 1965). Each item was answered in a true/false format. Sample items on this scale include "Criticism or scolding hurts me terribly," "I never worry about my looks," "I almost never dream," and "I do not always tell the truth." Higher scores on this scale indicate a greater degree of pathological denial, which presumably reflects inadequate defense mechanisms (Haan, 1965).

**Defensiveness**

The 30 items that composed the K scale of the original MMPI were used to assess defensiveness at each time period. The scale reflects a tendency to deny psychological problems that are often apparent to objective observers (Greene, 1991). Sample items on this scale are "At times I feel like swearing," "At times I feel like smashing things," "I have never felt better in my life than I do now," and "I think nearly anyone would tell a lie to get out of trouble." Higher scores on the K scale indicate a greater degree of defensiveness that could reflect both the general attitude toward assessment and the probable orientation toward psychological content in general.

**Hostility**

The 27 items from the original MMPI that assess manifest hostility were also administered at each time period (Wiggins, 1966). All of these items were answered in a true/false format. Sample items on this scale are "Once in a while I feel hate toward
members of my family whom I usually love,” “I sometimes tease animals,” "Sometimes I feel as if I must injure either myself or someone else,” and “At times I feel like picking a fist fight with someone.” Higher scores on this scale indicate greater hostility.

**Personal Handicap**

The Personal subscale of the Handicap Problems Inventory (Wright & Remmers, 1960) was used to assess personal difficulties at each assessment. All 96 items on the subscale are disability specific and address concerns unique to these individuals (e.g., “want to be normal,” “act as if not handicapped”). The test manual reports adequate internal consistency (.95; Wright & Remmers, 1960). Higher scores on the scale indicate a greater degree of perceived personal handicap.

**Distress**

The Beck Depression Inventory (BDI) was used as a self-report measure of distress (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961). Four items that assess physical appearance, ability to work, weight loss, and experience of physical problems (such as constipation) were deleted from the scale because of the possibility of these items being confounded by the physical concomitants of SCI. Higher scores on the BDI reflect greater distress; recent caveats urge caution in associating scores on the BDI with depression per se among persons with physical disability (Elliott & Frank, 1996).

**Social Activities**

Eleven items were imbedded in the questionnaire to assess social activities in the community indicative of mobility and social reintegration. These items assessed such activities as riding in a car, shopping for groceries or clothing, visiting friends, and visiting restaurants, theaters, or the residence of a friend or family member. All items had a yes/no response format. A total score was derived by summing responses to these items. Lower scores indicate a greater degree of social activity. Alpha coefficients computed at each assessment indicated a sufficient degree of internal consistency for data analysis (.80, .78, and .77, respectively).
In addition, persons with severe physical disability are often at risk for becoming immobile since they have difficulty making transfers from bed to wheelchair. Some persons may be physically unable to perform this activity on their own and must rely on another for transfers. Others may lack initiative or goals or have adjustment problems and opt to stay in bed. Persons who spend more time in bed are at risk for further disability associated with muscle contractions, lack of involvement with others, and restricted social mobility. Thus, each participant was asked the average number of hours spent in bed during the week prior to the assessment. This provided a second—albeit indirect—measure of social activity. Higher scores indicate a greater percentage of time spent in bed.

**Secondary Complications**

Pressure sores are considered preventable complications among persons with paralysis, since individuals who develop these sores are often noncompliant with recommended self-care regimens, engage in a variety of health-compromising behaviors, and lack active coping skills (Yarkony, 1994). Persons who develop decubitus ulcers (i.e., pressure sores) often require expensive and intensive medical intervention for repair, rehabilitation, and management of the ulcer (Stover et al., 1995). Skin deterioration at the annual medical evaluation 1 year following discharge from the unit was determined via observational procedures used by physiatrists or nurses conducting these evaluations. Pressure sores are routinely assessed for severity; for our purposes, however, it was sufficient to categorize individuals who were diagnosed with one or more pressure sores at the evaluation (coded as 1) and those who were determined to have no pressure sores at this time (coded as 0).

**Data Analysis**

Pearson correlations were computed between variables and analyzed separately for each time period. This allowed interpretation between the belief, denial, and defensiveness variables with the
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indices of adjustment (distress, hostility, social activity, and handicap).\(^1\) In some cases, participants were unable to complete all measures. This resulted in an inconsistent number of participants for certain statistical procedures. Therefore, the degrees of freedom are reported for each significant statistical finding.

Results

Assessment at 3 Weeks Postdischarge

Means, standard deviations, and correlations between variables at 3 weeks postdischarge are shown in Table 1. Inspection of Pearson correlations indicates that unrealistic beliefs were not significantly associated with any index of psychosocial adjustment. In contrast, higher denial scores were significantly associated with lower levels of distress (\(-0.64, n = 39\)), perceived handicap (\(-0.61, n = 35\)), and hostility (\(-0.71, n = 38\)). Greater defensiveness was also significantly correlated with these variables (\(-0.46, n = 39; -0.53, n = 35\); and \(-0.55, n = 38\), respectively). However, none of these psychosocial variables were associated with social activities, hours spent in bed, or believed probability of walking. Interestingly, older age was significantly associated with more hours spent in bed (\(0.33, n = 36\)) and fewer social activities (\(0.34, n = 38\)). A greater belief in the probability of walking again in the future was significantly associated with an increased number of social activities at this assessment (\(-0.47, n = 28\)). Thus, these correlations suggest that unrealistic beliefs about the implications of one's injury may be unrelated to distress soon after discharge into the community. In contrast, denial and defensive mechanisms were associated with less distress, handicap, and hostility in a fashion often observed in

\(^1\) A previous study (Richards, 1986) examined changes in scores on the BDI, the Wiggins hostility measure, and the Handicapped Problems Inventory over these three periods and in comparison with nondisabled community-residing adults. There were moderate increases on the BDI and the hostility measures at the first two assessments, but these increases were not significantly different from those of the comparison group at the 1-year assessment. Readers interested in these patterns over time are referred to this study; note that the denial and social-cognitive variables reported here were not included in the Richards (1986) report.
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* $p<.05$. 
Denial and Adjustment

clinical assessment with measures designed to detect psychopathology (e.g., the MMPI). Thus, individuals who were less defensive and who apparently did not rely on denial as a coping mechanism had a tendency to report greater levels of personal handicap associated with SCI and were also experiencing higher levels of hostility and distress.

Assessment at 3 Months Postdischarge

Inspection of means and correlations among variables measured 3 months postdischarge revealed a pattern similar to that observed at the first assessment (see Table 2). Notably, unrealistic beliefs were not significantly correlated with any functional outcome or with any index of psychosocial adjustment. Furthermore, fewer social activities were again significantly correlated with older age (.55, n = 38), but a significant association was also observed at this assessment between fewer social activities and higher levels of distress, as measured by the BDI (.38, n = 38). As observed at the first assessment, denial and defensiveness were significantly associated with distress, perceived handicap, and hostility. This pattern again suggests a palliative effect of denial and defense mechanisms on levels of personal distress, handicap, and hostility. Nevertheless, these associations are not surprising in light of clinical literature concerning these variables in general, and none of these MMPI variables were associated with measures of psychosocial and community adjustment specific to disability (e.g., social activities, hours spent in bed).

Assessment at 1 Year Postdischarge

Inspection of correlations in Table 3 indicates that unrealistic beliefs were significantly associated with indices of adjustment 1 year postinjury. Optimistic beliefs were significantly related to greater distress ( — .36, n = 37) and greater self-reported personal handicap ( — .39, n = 37). As observed at the previous assessments, denial and defensiveness were significantly associated in the same directions with distress, handicap, and hostility. Yet, higher denial and defensiveness were not significantly associated with either unrealistic beliefs or social activities. Consistent with previous
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<td>25.67</td>
<td>15.08</td>
<td>39</td>
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<tr>
<td>9. Hours in bed</td>
<td></td>
<td>-.29</td>
<td>11.17</td>
<td>3.06</td>
<td>35</td>
<td></td>
<td></td>
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<td>10. Probability of walking</td>
<td></td>
<td></td>
<td></td>
<td>68.93</td>
<td>26.32</td>
<td>28</td>
<td></td>
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* p < .05.
results, older age was again significantly correlated with fewer social activities (.68, n = 38), and it was also associated with more hours spent in bed (.44, n = 35). It should be noted that increased social activities were also associated with a greater belief in increased probability of walking (—.52, n = 28) and with fewer hours spent in bed (.61, n = 35).

Secondary Complications

Records were available for 33 participants at the end of the first year postdischarge to determine presence of pressure sores. Fifteen of these individuals were diagnosed as having a pressure sore. A series of one-way analyses of variance (ANOVAs) revealed no significant differences between persons with and without pressure sores on any of the self-report variables at any time during the year.

Post Hoc Analyses

The majority of participants at each assessment expressed a belief that they would walk again in the future (ns = 26, 28, and 25, respectively). A series of one-way ANOVAs revealed no significant differences between those who expressed a belief in walking again and those who did not on measures of denial, defensiveness, distress, or handicap at any assessment. However, individuals who believed they would walk again reported spending significantly fewer hours in bed at the first assessment (M = 12.96, SD = 2.87, n = 24) than those who did not think they would walk again in the future (M = 16.83, SD = 3.6, n = 6). This finding should be interpreted with caution in light of the high number of statistical tests and the relatively low number of participants in the latter cell. No other significant effects were found.

Differences by Type of Lesion

In retrospect, we noted that individuals who incurred Frankel grade injuries rated as B, C, or D typically experienced some type of sensory or motor feedback that might be interpreted by the
person as an indication of return of functional ability. In some cases, such “return” is observed to the extent that a person may regain partial function of an affected body area or part. In contrast, persons with a Frankel grade injury of A are considered sensory and motorically “complete,” and return of function in affected areas is considered neurologically unlikely. Thus, we reasoned that differences may exist between participants who sustained a complete lesion and those who had some type of sensory or motor sparing after SCI.

A series of one-way ANOVAs comparing responses on the self-report measures between those with complete lesions and those with some sensory/motor sparing yielded a few significant differences. Persons with some sensory/motor sparing reported a greater probability ($p = .01$) of walking at the second assessment ($M = 86.11$, $SD = 18.33$, $n = 9$) than those with complete lesions ($M = 60.79$, $SD = 25.78$, $n = 19$). Individuals with incomplete lesions also had higher hostility scores ($M = 8.93$, $SD = 4.11$, $n = 15$) than those with complete lesions ($M = 6.21$, $SD = 4.12$, $n = 24$; $p = .05$) at this administration. No other significant differences were observed.

Discussion

Despite previous literature suggesting that optimistic beliefs about recovery would be related to psychological adjustment following the onset of severe physical disability, our data revealed no association between specific beliefs of recovery following the onset of SCI and subsequent psychological adjustment following discharge and after a few months in the community. However, 1 year following discharge from inpatient SCI rehabilitation, specific beliefs were associated with higher levels of psychological distress among our participants. In contrast, general tendencies to deny negative information about the self were consistently associated with less distress, less hostility, and fewer problems associated with disability. This latter finding suggests that an overall “optimism”—or, alternatively, defensiveness—may be consistently related to self-reports of distress, but this association may occur independently of unrealistic
beliefs about the condition or one's projected outcomes for recovery.

Nevertheless, it should be emphasized that the lack of association between unrealistic beliefs and psychosocial adjustments at the first two assessments indicates that such beliefs are not indicative of maladjustment per se, contrary to clinical lore regarding acceptance of disability. Individuals appear to maintain an optimistic view of their injury and potential for recovery, and such beliefs may be independent of any self-reported index of adjustment. The notable exception occurred 1 year postinjury, when unrealistic beliefs were associated with increased levels of hostility, distress, and perceived handicap. This would suggest that unrealistic beliefs may lead one to become more frustrated and disappointed as time passes and anticipated recovery does not occur. Acceptance of disability, then, appears to be a dynamic process in which individuals come to terms with their hopes for the future and the realities of their condition (Keany & Glueckauf, 1993; Wright, 1983).

The significant correlations among distress, perceived handicap, and hostility were observed at each assessment. Furthermore, these indices of maladjustment were consistently and inversely correlated with denial and defensiveness scales from the MMPI. Scores on the MMPI denial and $K$ scales did not change substantially over time, indicating a relative stability in responses across time. These self-report variables were not associated with the functional outcome variables (e.g., hours spent in bed, social activities). BDI scores were associated with social activities in a meaningful fashion at the second assessment; this relationship was not evident at the first or last administration. These self-report measures of psychological adjustment were also unrelated to the occurrence of pressure sores in our sample.

This pattern suggests that a generalized factor may underlie the psychological distress associated with SCI in the first year postinjury, and these issues may be directly associated with some underlying individual difference characteristic. Considerable evidence indicates that individual differences consistently predict psychological adjustment following SCI regardless of time since injury onset (Elliott & Frank, 1996; Elliott & Umlauf, 1995). Although elevations on the MMPI denial and $K$ scales are typically considered
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maladaptive in many clinical settings, it seems that individuals who lack these characteristics may in fact experience more psychological dysfunction throughout the first year postinjury. Alternatively, it is possible that individuals with lower scores on the denial and K scales are simply more willing to admit the occurrence of these psychological problems.

Post hoc analyses revealed that most persons in our sample maintained a belief in the probability of walking throughout the year following the onset of SCI. This particular belief did not appear maladaptive and was at no time associated with any self-report index of maladjustment. Our sample also revealed a trend toward more social activities over time and less time spent in bed over the course of a year. This pattern suggests that individuals in our sample assumed more activities over time.

However, older age was associated with fewer social activities at each assessment. We are beginning to appreciate the impact of age-related differences on adjustment following disability, but this has yet to be addressed in any meaningful way in the extant literature. Available research indicates that age might interact with—or be mediated by—certain personal (e.g., goal-setting; Kemp & Vash, 1971) or environmental (e.g., life stress; Frank, Elliott, Buckelew, & Haut, 1988) conditions.

It appears that the dynamic process of adjustment following the onset of severe physical disability is characterized by specific beliefs about the implications of the condition and ongoing characteristics of the individual. In our study, overly optimistic beliefs about the permanence of the condition and probability of walking again were inconsistently related to indices of adjustment. Post hoc analyses revealed that the dichotomous measure of belief in walking again was not associated with any pathological indicator of adjustment at any time. Unrealistic beliefs probably reflect favorable biases individuals maintain in the face of contradictory, objective evidence, and they likely serve an insulating function to preserve a sense of self under harsh conditions (Snyder, 1989). The degree to which these beliefs relate to adjustment appears to be highly variable; yet, our data imply that those who persist in such beliefs may eventually develop difficulties with distress and personal problems a year after the event. These individuals may be preoccupied with "cognitively undoing" the negative ramifications of their condition
at the expense of more adaptive behaviors (Davis, Lehman, Wortman, Silver, & Thompson, 1995). Those with a more flexible repertoire of situation-specific coping skills and personal beliefs about the self and the condition may be able to adapt over time to the unrelenting, objective concomitants of a permanent SCI (Hanson et al., 1993; Heinemann, Bulka, & Smetak, 1988; Reidy & Caplan, 1994; Richards et al., 1997).

Those who possess a general predisposition to favorably regard the self, and to harbor positive beliefs about the self in general, may be predisposed to experience fewer negative emotions and psychological problems regardless of the condition or time since the onset of the condition (Elliott et al., 1991; Snyder, 1989; Taylor & Gollwitzer, 1995). The tendency to disregard negative information about the self among persons with severe physical disability may serve to wrest a sense of control over the environment and the condition (Rosenbaum & Raz, 1977); those lacking these beliefs may then be susceptible to ongoing problems with adjustment.

The lack of strong and consistent relationships among unrealistic beliefs, self-perceived probability of walking, and measures of distress has implications for practitioners. It may be counterproductive from a clinical standpoint to challenge unrealistic beliefs about recovery. Such beliefs probably foster hope, and there is no consistent evidence from our data that there is any substantive downside to this approach to reality negotiation. The exception to that trend occurred at 1 year. Clinicians again may need to pay particular attention to that time period in order to monitor potential increases in distress that may reflect an "anniversary reaction" or a self- or other-imposed milestone by which time significant recovery was expected to have occurred.

The present study is limited by the relatively small number of participants, the reliance on self-report measures of adjustment, the use of correlational techniques, and the high number of statistical tests in relation to the number of participants in the study. Furthermore, longitudinal studies that use more sophisticated procedures such as hierarchical linear modeling (Clay, Wood, Frank, Hagglund, & Johnson, 1995) will probably yield more enlightening information about individual differences and corresponding trajectories in the dynamic process of adjustment following the onset of physical disability.
References


Denial and Adjustment


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