ASSERVIVENESS, SOCIAL SUPPORT, AND PSYCHOLOGICAL ADJUSTMENT FOLLOWING SPINAL CORD INJURY

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Summary—Tested predictions that assertiveness and social support would be significantly predictive of psychological adjustment. Furthermore, it was anticipated that assertiveness and certain types of social relationships would differentially interact to predict adjustment, since positive and negative effects of both variables have been noted in prior research. Trained raters interviewed 156 persons receiving either in-patient or out-patient care for cord injuries and administered measures of assertiveness, social support, depression and psychosocial impairment. Persons who reported a keen sense of responsibility for the welfare of another reported more depression and impairment. Persons reporting higher levels of support facilitating social integration and reassuring personal worth were less depressed. Several significant interactions between assertiveness and different social support relationships revealed beneficial and deleterious effects on depressive behavior and impairment secondary to the disability. Results are discussed as they advance theoretical understanding of the effects of assertiveness and social support. Implications for discriminate cue learning in assertion training for persons with physical disability are proposed.

The concept of social support has been useful in appreciating the effects of environmental resources and social relationships on psychological adjustment, particularly under stressful conditions. An impressive literature has documented the beneficial effects of social support across a variety of populations (Berkman, 1984; Cohen & Wills, 1985; Wallston, Alagna, DeVellis & DeVellis, 1983). It has been theorized that social support operates by buffering a person from the deleterious effects of stressful encounters (the ‘buffering’ hypothesis; Cassel, 1974) or by enhancing well-being in general, regardless of stress levels (the “relationship” hypothesis; Cutrona, 1984).

Unfortunately, research has also revealed social support to be associated with negative psychological effects without any clear theoretical explanation. Intimate interpersonal relationships are not uniformly “supportive”, and in fact can be the source of substantial stress (Fiore, Becker & Coppel, 1983; Fisher & Phillips, 1982; Hobfoll & London, 1986; Rook, 1984). Relationships characterized by overinvolvement, intrusiveness, and overprotectiveness can be very distressing (Coyne & DeLongis, 1986). Often people demonstrate difficulties in offering support to others by making rude or insensitive remarks, offering unsolicited advice, and assuming control of another’s affairs (Lehman, Ellard & Wortman, 1983, Suls, 1982). Persons who are distressed, depressed or in need of assistance often encounter negative reactions from those in a position to help including avoidance, devaluation and rejection (Coyne, 1976; Coates, Wortman & Abbey, 1979; Dunkel-Schetter & Wortman, 1982; Wills, 1978). Recipients of social support may display problematic behaviors, including inappropriate comments, increased interpersonal demands, and rude and/or unappreciated behaviors (Brown, 1978; Coyne, 1976). In addition, persons may prefer emotional rather than problem-oriented assistance (Coyne, Aldwin & Lazarus, 1981). Individuals who are low in social support are often socially alienated and report lower self-esteem (Dunkel-Schetter, Folkman & Lazarus, 1986; Jones, Freeman & Groswick, 1981; Sarason & Sarason, 1981).

Interpersonal skills such as assertiveness may play a critical role in social support exchanges. Persons who are assertive are believed to competently communicate their thoughts and feelings in a manner that respects the rights of others (Wolpe & Lazarus, 1966). Assertive individuals develop confidence and satisfaction in their ability to communicate with others (Masters, Burish, Hollon
& Rimm, 1987); those who are not assertive report more loneliness and dissatisfaction in social interactions, and less confidence in their beliefs and opinions (Gambrill, Florian & Splaver, 1986; Jakubowski-Spector, 1973; Pitcher & Meikle, 1980) Elliott and Gramling (1990) have found that assertive college students under stress are able to benefit from supportive relationships that provide a sense of social integration and personal worth. It is reasonable to expect assertive persons to be more effective in garnering and utilized support available in their interpersonal environment.

The interaction between assertion and social support may be particularly pronounced among persons who have acquired severe physical disabilities. These individuals routinely encounter stares, expressions of pity and disgust and unrealistic expectations that they are either sadly preoccupied with the condition or extraordinarily gifted in order to compensate (Wright, 1983). People often are behaviorally inhibited when interacting with persons with disability (Kleck, 1968; Kleck, Ono & Hastorf, 1966) and avoid social interaction with a person with disability if given opportunity (Snyder, Kleck, Strenta & Mentzer, 1979). Many people with disability are cognizant of these reactions, and this awareness contributes to the anxiety they exhibit and report in social and interpersonal interactions (Comer & Piliavin, 1972; Dunn, 1977). A person with disability who behaves in an assertive fashion receives more positive personal evaluations from observers, and also engenders more positive attitudes toward persons with disability in general (Elliott & Frank, 1990; Elliott, MacNair, Yoder & Byrne, 1991).

It is also plausible that assertiveness is associated with the negative effects of social support. Some individuals, particularly members of minorities, may be devalued and disliked for behaving in a manner inconsistent with stereotypic expectations (Kelly et al., 1980; Keins, Cavell & Beck, 1985, Wood & Mallinckrodt, 1990). Assertive persons may encounter an “escalation effect” in that others in the immediate environment may respond with increased attempts to control the assertive individual (Masters et al., 1987). This issue may be especially sensitive for persons with acquired disability receiving intensive treatment from professionals who often inadvertently reward dependent behaviors and exert control over many facets of a patients’ life (Dunn & Herman, 1982; Wills, 1978; Wright, 1983). Consequently, assertive persons may exhibit more psychological distress as they interact with institutionalized forms of social support. Available data also indicate that assertive persons under duress report more depressive behavior when they feel responsible for the welfare of others (Elliott & Gramling, 1990).

The present study was conducted to test the hypotheses that assertiveness and social support would be predictive of psychological adjustment among persons with acquired spinal cord injuries (SCI). In addition, the study tested the assumption that assertiveness would significantly interact with certain social support relationships towards the prediction of depression and psychosocial impairment of persons with SCI.

PARTICIPANTS

Participants were 156 persons receiving either in-patient or out-patient treatment for spinal cord injuries. Eighty-four patients were serviced by a Veteran’s Administration medical center, 44 were being treated at a general rehabilitation until in an urban medical school, 20 were receiving treatment in a rehabilitation facility in a rural area, and 8 were residing in an independent living complex. The total sample was comprised of 140 men and 16 women. The mean age for the sample was 39.12 (SD = 13.74, range 18–83 yr). Ninety-four patients were caucasian, 60 were African–American, and two patients were Asiatic–American. The average time since the onset of the injury was 84.82 months (SD = 123.96, range 1–490 months). Ninety-three patients were paraplegic, 61 were quadriplegic, and two patients had sustained other types of cord injuries. The average years of education for the sample was 12.07 (SD = 2.68, range of 4–21 yr of formal education). Patients were approached by a member of the research team and informed that the study examined the relationship between interpersonal behavior and adjustment to SCI. Informed consent was obtained from interested participants. The independent and dependent measures were administered in a random order. Trained interviewers verbally administered the measures to patients, since many patients with high-level injuries required assistance.
INDEPENDENT VARIABLES

Measurement of assertiveness

The Spinal Cord Injury Assertion Questionnaire (SCIQ; Dunn & Herman, 1982) was used to measure patient assertiveness. The SCIQ consists of 26 potentially sensitive social situations specific to spinal cord injury. A respondent is required to rate on a 1 (all of the time) to 5 (never) Likert scale the degree to which the person would likely respond assertively in specific social situations. Test-retest reliabilities over a 2-week period averaged 0.60 and odd-even reliability was 0.67 (Dunn & Herman, 1982). A total score is obtained by summing the responses, and this index denotes the likelihood the person would behave assertively. The total response likelihood score has been significantly correlated in predicted directions with the Gambrill Assertion Inventory (Gambrill & Richey, 1975), the Behavioural Assertiveness Tests (Eisler, Miller & Hersen, 1973), and with indices of social mobility (Dunn & Herman, 1982).

Measurement of social support

The Social Provisions Scale (SPS; Russell & Cutrona, 1984) is a measure of social support based on Weiss' (1974) typology. The 24-item questionnaire requires respondents to rate each item on a four-point Likert scale the degree to which a type of support is being provided by one of the theoretically-derived relationships. Separate subscale scores are computed for six subscales, each measuring a component of social support postulated by Weiss (1974). From this perspective, relationships that comprise social support systems can be categorized into the essential functions which they serve. Relationships that provide a sense of closeness and security, as exemplified in intimate relationships, are classified as Attachment (A) relationships. Social integration (SI) relationships are those that provide a sense of belonging, as exemplified in friendships. Relationships that provide Guidance (G) can be obtained from professional relationships that supply informed advice. Relationships that acknowledge and reinforce a person's sense of worth, as exemplified in relationships with co-workers and colleagues, are described as Reassurance of Worth (ROW) relationships. Tangible, noncontingent assistance from family members is described as Reliable Alliance (RA) supports. The sense of responsibility for the welfare of another, often derived from caring for one's own children, is defined as Opportunity for Nurturance (OFN) (cf. Cutrona & Russell, 1987). Social relationships have demonstrated differential effects on depression and other psychological symptoms across diverse populations such as postpartum women (Cutrona, 1984), elderly individuals (Cutrona et al., 1986), older retirees (Mallinckrodt & Fretz, 1988), and college students (Elliott & Gramling, 1990).

Reliability coefficients for the SPS have been quite high (0.84–0.92) and internal consistency for the total score has ranged from 0.85 to 0.92 across many different populations (Russell & Cutrona, 1984). Alpha coefficients for the individual subscales have ranged from 0.64 to 0.76 and factor analysis has confirmed a six factor structure corresponding to the six provision subscales (Cutrona & Russell, 1987). Test-retest reliability obtained among a sample of elderly adults for the total score on the SPS was 0.55 over a 6-month period (Cutrona et al., 1986). Validity studies comparing the scale scores to other self-report measures (Cutrona, 1984; Russell & Cutrona, 1984) and actual interactional behaviors in daily encounters (Cutrona, 1986) have also been supportive.

A third independent variable was derived from the number of months transpired since the onset of injury for each patient. Anecdotal models of adjustment following SCI maintain that the longer a person is injured, the more emotionally accustomed the person becomes to the injury. Subsequently, psychological problems such as depression are often expected by clinicians in the early months of injury (e.g. Siller, 1969). According to this line of reasoning, persons who have sustained recent injuries should evidence higher levels of depression and psychosocial impairment than those who have been injured for longer periods of time, and these differences should be detectable in cross-sectional analyses. Despite the lack of empirical support for the direct effects of time passage on psychological adjustment following SCI, stage models are widely employed by many clinicians, and some evidence suggests chronicity may moderate the effects of psychological variables among persons with severe disability (see Frank, Elliott, Corcoran & Wonderlich, 1987, for a review).
DEPENDENT MEASURES

The Inventory to Diagnose Depression (IDD; Zimmerman & Coryell, 1987), a 22-item self-report instrument, was used to measure depressive behavior. Test-retest reliabilities and internal consistency markers have been impressive in comparisons with interview systems and other self-report measures of depression (Zimmerman et al., 1986; Zimmerman, Coryell, Wilson & Corenthal, 1986; Zimmerman & Coryell, 1987). Each item requires a respondent to indicate the severity of a depressive behavior on a five-point Likert scale. The sum of these responses provides a total severity score that serves as a single index of depressive behavior. The severity score was used in this study.

The Sickness Impact Profile (SIP; Gilson et al., 1975) was used to measure psychosocial impairment. The SIP is a 136-item questionnaire measuring health-related impairment in physical and psychological dimensions. The psychosocial subscale was utilized in this study. Items on this subscale tap functioning across categories of social interaction (e.g. “I am doing fewer social activities with groups of people”), alertness (“I do not keep my attention on any activity for long”), emotional behavior (“I laugh or cry suddenly”), and communication (“I do not speak clearly when I am under stress”). Respondents are asked to endorse only those items that describe their personal experience within the preceding 24 hr. Test-retest correlations of the SIP across several studies and time intervals have been consistently high (0.75–0.92) for the total score, and moderate (0.45–0.60) for items endorsed (Bergner et al., 1981; Gilson et al., 1975). Validity coefficients resulting from comparisons with other measures of health-related dysfunction have ranged from 0.30 to 0.85 (Bergner et al., 1981).

STATISTICAL ANALYSIS

Pearson correlations were computed between the SCIQ, the SPS subscales, the dependent variables, and relevant demographic variables to examine possible relationships. To examine the predicted relationships between assertiveness, social relationships, and each dependent variable across all patients, separate multiple regression equations were computed. For each equation, a block of clinically relevant demographic variables was entered at the first step including age, race (coded as 1 = Caucasian, 2 = African–American, 3 = other), and level of injury (1 = quadriplegic, 2 = paraplegic, 3 = other). The number of months since the onset of disability was entered at the second step. The SCIQ total score was entered at the third step, followed by a block of SPS subscale scores at the fourth step. To test the interactions between assertiveness and social support a block of six two-way interactions (e.g. SCIQ × Guidance) was entered at the final step.

RESULTS

Means and standard deviations on the independent and dependent variables are displayed in Table 1. Correlations used in the subsequent correlational analyses are contained in Table 2.
Table 2. Correlations between demographic variables, independent variables, and dependent variables

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*P < 0.05; **P < 0.01; ***P < 0.001.

IDD = Inventory of Diagnosed Depression; TSI = Time Since Injury; ROW = Reassurance of Worth; RA = Reliable Alliance; SI = Social Integration; GUID = Guidance; SA = Social Attachment; NURT = Opportunities for Nurturance; SIP = Sickness Impact Profile; SCIQ = Spinal Cord Injury Questionnaire; LEVEL = Level of Spinal Cord Injury.

Both equations, the tolerance values for the independent variables were well above the accepted limits (all values >0.32), indicating that multicollinearity between the subscale scores did not adversely affect the results (Tabachnick & Fidell, 1989).

The first equation tested the hypotheses that assertiveness, social support and their interactions would be predictive of patient depression. The block of demographic variables entered at the initial step was not significant, \(F(3,152) = 0.45\), NS. Time since injury, entered next, was not significantly predictive of depression \(F_{inc}(1,151) = 2.87,\) NS. Patient assertiveness, entered third, was significantly predictive of depression scores \(F(1,150) = 3.95, P < 0.05, R^2 = 0.021\), indicating that patients who were assertive reported lower depression scores. The block of social support scores was entered at the fourth step and was significantly predictive of depression, \(F_{inc}(6,144) = 5.68, P < 0.0001, R^2 = 0.18\). Analysis of individual Beta weights for each subscale revealed nurturance \(\beta = 0.23, t(144) = 2.40\), social integration \(\beta = -0.24, t(144) = -1.97\), and reassurance of worth \(\beta = -0.28, t(144) = -2.60\) to be significantly predictive of depression \((P's < 0.05)\). Higher levels of social integration and reassurance of worth were associated with lower depression scores; higher levels of nurturance were associated with higher depression scores.

The block of SPS subscales × Assertiveness interactions was entered at the final step, and this was significantly predictive of depression, \(F_{inc}(6,144) = 5.37, P < 0.001, R^2 = 0.15\). Analysis of individual \(\beta\) weights revealed interactions between assertiveness and guidance \(\beta = -1.82, t(138) = -2.47\), nurturance \(\beta = 1.51, t(138) = 2.79\), and reassurance of worth \(\beta = -1.18, t(138) = -2.36\) to be predictive of depression \((P’s < 0.02)\). The final model accounted for 38% of the variance in depression scores.

The Assertion × Guidance interaction, displayed in Fig. 1, indicates that assertive patients were more depressed under conditions of high Guidance support. Assertive patients were less depressed under conditions of low Guidance support. Unassertive patients were less depressed when Reassurance of Worth support was high (see Fig. 2). Fewer assertions skills and low ROW support were predictive of higher depression scores. In contrast, the Assertion × Nurturance interaction (see Fig. 3) indicates that unassertive patients were less depressed when Nurturance support was low. Higher levels of Nurturance support and fewer assertion skills were predictive of higher depression scores. All interactions were computed following recommendations by Cohen and Cohen (1983).

The second regression equation tested the hypotheses that the independent variables and their interactions would be predictive of psychosocial impairment secondary to the disability. Neither the block of demographic variables \(F(3,152) = 0.58\) or time since injury \(F_{inc}(1,151) = 2.61\) was significantly predictive of impairment. Assertion scores, entered third, were significantly predictive of impairment \(F_{inc}(6,144) = 5.37, P < 0.001, R^2 = 0.18\). Analysis of individual \(\beta\) weights detected significant relationships \((P’s < 0.02)\) between impairment and Nurturance \(\beta = 0.21, t(144) = 2.32\) and Reassurance of Worth \(\beta = -0.36, t(144) = -3.47\). Persons high in Reassurance of Worth support reported lower impairment scores; those high in Nurturance support reported more impairment.
The block of six Assertiveness × SPS subscales interactions was entered at the final step, and this was significantly predictive of impairment. $F_{\text{inc}}(6,138) = 3.84, P < 0.002, R^2_{\text{inc}} = 0.10$. Analysis of individual $\beta$ weights revealed the Assertiveness × Guidance interaction to be significantly predictive of impairment, $\beta = -2.55, t(138) = -3.51, P < 0.002$. Consistent with the assertion Guidance interaction on depression, assertive patients were less impaired under conditions of low Guidance support (see Fig. 4). Fewer assertion skills and higher levels of Guidance were predictive of lower impairment scores.

DISCUSSION

Results of the present study confirmed the hypotheses under investigation: Assertiveness and social support were predictive of post-injury depression and psychosocial impairment. In addition, the relationship of social support to each dependent variable was moderated by patient assertion skills, indicating that the interpersonal behavior of an individual influences the outcome of social support exchanges. Interestingly, the interactions between assertion and social support accounted for a greater percentage of available variance in depression and impairment scores than assertiveness alone. Assertiveness moderated the effects of relationships offering guidance, opportunities for nurturing others, and reassuring the worth of the person. Those who reported greater willingness to be assertive in tense situations were more depressed and impaired when they also reported higher levels of Guidance, and unassertive persons benefitted more from high levels of Guidance and...
Reassurance of Worth support. Conceptually, Guidance support is provided by persons in professional help-offering roles who dispense advice, information and service (Cutrona & Russell, 1987). People in these institutional forms of support often try to control clientele behavior, and devalue their clients (Rosen, Tomarelli, Kidda & Medvin, 1986; Wills, 1978). The present results suggest that assertive persons with disability may find interaction with people in Guidance roles to be distressing. Guidance support, however, may be particularly helpful to those who lack the skills to assertively interact with professionals. It may be possible that persons in Guidance support roles respond to assertive patients with increased attempts to control patient behavior, and patient distress subsequently ensues. Future research should attend to the differential treatment of assertive and nonassertive medical patients by professional medical staff.

Negative effects of social support were apparent in the association between Nurturance, depression and psychosocial impairment. Patients who reported a keen sense of responsibility for the welfare of another also reported more depressive behaviors and impairment secondary to the disability. Other studies have found positive correlations between Nurturance support and distress among group therapy participants (Mallinckrodt, 1989) and assertive college students under stress (Elliott & Gramling, 1990). Individuals who feel personally responsible for others and who are concurrently coping with stressful circumstances may be overwhelmed by their situation. People in caregiving roles report higher levels of depression and anxiety, poorer health, and a greater number of medical visits than comparison groups (Kiecolt-Glaser et al., 1987; Haley et al., 1987). Presumably, the adverse effects of caregiving are thought to stem from chronic strain and a low sense of personal control over circumstances (Barnett & Baruch, 1987).

It has been long suspected that depressed persons are less assertive and socially skilled in general (Lea & Paquin, 1981), and empirical studies have consistently found moderate correlations between assertion skills and depression (e.g. -0.76; Pachman & Fay, 1978). Assertion scores in the present study accounted for a relatively small percentage of variance in depression (2%). However, the significant interactions between assertion and social support accounted for a substantial amount of variance in depression scores (15%), indicating that assertiveness has an indirect effect on depression. Other research has documented the problems experienced by depressed persons in social and interpersonal relationships (Coyne et al., 1987; Hokanson et al., 1989). Assertive persons may assume a proactive stance in terms of coping (Matheny et al., 1986). This approach may actually prove detrimental among certain types of social interactions when a person is concurrently trying to manage severe life stressors. The present study provides evidence that the impact of assertion skills on psychological adjustment may be best appreciated, then, in the context of specific social relationships.

The findings of the present study raise several issues pertinent to assertion training with persons who have acquired physical disabilities. It has been established that assertion training can generalize to a person's natural social environment (Wolff & Desiderato, 1980) and assertion training is more efficacious than relationship-oriented therapies in improving client interpersonal skills (Masters et al., 1987). Assertion training has been successfully employed to assist persons with disability in acquiring interpersonal skills, with noticeable improvements in skill and self-concept among participants (Morgan & Leung, 1980). Yet the negative interactions between assertiveness and social support suggest that persons in the immediate environment may have adverse reactions to an assertive person with disability. Future training programs should incorporate discriminate cue training to enhance interactions with professional help-providers and with peers. Additionally, attention should be given to possible deleterious effects of behaving assertively, particularly among those who must repeatedly interact with professionals. Empirical study of the actual impact of assertion training on social support interactions is warranted.

Several limitations of the study should be considered. The correlational and cross-sectional design of the study may not have adequately captured the actual effects of social support and assertiveness on psychological adjustment. The use of self-report measures also hinders conclusive interpretations regarding the relationship of the independent variables with behavioral outcomes, despite supportive psychometric data on all of the measures. It may be possible, for example, that the SCIQ does not discriminate between assertive and aggressive interpersonal behaviors, thus confounding the assertion-social support interactions. Longitudinal designs with observational measures may be best suited for further study of interpersonal behavior, social support and
psychological adjustment among persons with severe disability. Theoretical and clinical issues raised by the study can be addressed in future research and psychological interventions.

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REFERENCES


Assertiveness and social support


