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ABSTRACT

Post-traumatic stress disorder, which can occur when a person experiences a distressing event that falls outside the normal range of human experience, is the most-frequent psychiatric diagnosis made among patients who sustain a work-related injury. In a series of three studies, Grunert and associates evaluated patients' response to treatment following work-related upper extremity traumas. The first study examined the effectiveness of various strategies in reducing symptoms of the disorder. The second focused on graded return-to-work exposure as a desensitization technique. The third investigated onsite work evaluations as an environmental exposure strategy to facilitate return-to-work. Results indicate that use of a variety of approaches enables patients to relieve symptoms and return to the work setting and a normal pattern of life.

Psychological distress frequently follows serious work-related trauma. Post-traumatic stress disorder (PTSD) is the most-frequent psychiatric diagnosis made among patients who sustain work-related injuries (Grunert, Smith, Devine, Fehring, Sanger and Yousif, 1988).

PTSD is an affliction that occurs when a person has experienced an event that falls outside the range of normal human experience and that would be markedly distressing to most people. This event is persistently re-experienced in at least one of the following ways: 1) recurrent and intrusive distressing recollections of the event; 2) recurrent distressing dreams of the event; 3) suddenly feeling as if the traumatic event were recurring; 4) intense psychological distress in response to events that symbolize/resemble an aspect of the traumatic event.

Persistent avoidance of stimuli associated with the trauma or the numbing of general responsiveness is indicated by three of the following: 1) efforts to avoid thoughts or feeling associated with the trauma; 2) efforts to avoid activities or situations that arouse recollections of the trauma; 3) inability to recall a key aspect of the trauma (psychogenic amnesia); 4) markedly diminished interest in significant activities; 5) feeling of detachment or estrangement from others; 6) restricted range of affect; or 7) sense of a foreshortened future. Persistent symptoms of increased arousal are indicated by at least two of the following: 1) difficulty falling or staying asleep; 2) irritability or outbursts of anger; 3) inability to concentrate; 4) hypervigilance; 5) exaggerated startle response; 6) physiologic reactivity in response to events that symbolize or resemble some aspect of the event. In addition, the disturbance must persist for at least one month (Diagnostic and Statistical Manual of Mental Disorder).

THERAPEUTIC IMPLICATIONS

Due to the heightened interest in PTSD, patients are being diagnosed earlier and treated more aggressively. Researchers have suggested general considerations for therapeutic intervention:

1) Therapy should be instituted as soon as possible.
2) Therapy may be brief.
3) Ego-supportive interventions should be included.
4) Interventions should be aimed at decreasing specific avoidance behavior.
5) An effort should be made to normalize the abnormal.
6) Appropriate attributional changes should be considered (Peterson, et al).
Treatment may be hindered by the patient’s reluctance to communicate with the therapist; his/her fearfulness that no one will truly understand the traumatic experience; substance abuse; intense psychological numbing; impaired self-concept; and fear of losing control.

Behavioral treatment of this disorder is widely considered the treatment of choice, particularly when a patient manifests the delayed or chronic form of PTSD (Peterson, et al). Such treatment focuses on the patient’s response to those memories that produce the primary manifestations of PTSD (Keane, et al). Since this approach assumes that secondary features of the disorder are directly or indirectly caused by these memories, the patient’s memory of the original trauma is a focus of behavior therapy.

Four primary methods for individual treatment of PTSD have emerged in the literature: 1) implosive therapy/imaginal flooding; 2) systematic desensitization; 3) behavioral rehearsal; and 4) stress inoculation training (Keane, et al). Implosive therapy/imaginal flooding is the most common form of behavioral treatment described in the PTSD literature. It involves repeated imaginal presentation of the traumatic event until the scenes no longer elicit high levels of anxiety. The primary goal is to reduce the avoidance of traumatic memories and alleviate anxiety associated with recall of the event.

Systematic desensitization is used to treat several PTSD symptoms. Via this intervention, the patient is taught a method of relaxation that is later used to combat the anxiety response. Behavioral rehearsal is a two-phase treatment plan that involves relaxation training followed by a period of behavioral rehearsal. Stress inoculation training, an integrated approach used in cognitive behavioral therapy, consists of a period of conceptionalization, followed by the acquisition of skills, then behavioral rehearsal in preparation for application and follow-through (Peterson, et al; Meichenbaum; Birke).

One model for PTSD treatment considers symptoms as conditioned responses to a traumatic event (Foy, et al). Everyday objects become associated with a traumatic event and, thus, become conditioned stimuli that provoke an anxiety response. This response typically leads to avoidance of the memory, which, in turn, reduces the opportunity for exposure to emotions. This leads to continued symptomatology.

Most therapeutic approaches to treatment of PTSD use some variation of event review/reprocessing. In addition, drop-out rates for treatment are historically high due to avoidance behaviors that typically characterize a patient’s response to cues associated with the trauma (Peterson, et al).

PTSD FOLLOWING WORK-RELATED TRAUMA

Severe work-related hand injuries are often accompanied by significant psychological symptoms associated with PTSD. These symptoms generally cross four domains of psychological functioning: the behavioral domain, cognitive domain, affective domain and physiological domain.

Flashbacks are one typical symptom displayed during the period immediately following work-related trauma. These episodes are often associated with nightmares and severe affective disturbances such as anxiety and depression. In addition, concentration or attention problems and cosmetic concerns are common (Grunert, Devine, Matloub, Sanger, Yousif, Anderson and Roell, 1992).

In 1988, Grunert, et al reported that during the first two months following trauma, flashbacks and nightmares remained pronounced while concentration and attention problems diminished significantly. However, cosmetic concerns seemed to increase. These researchers also examined the role of flashbacks as a prognostic indicator for
return-to-work following work-related hand trauma. They identified three key components of flashbacks:

1) replay, in which the patient re-experiences events surrounding the trauma;
2) appraisal, in which the patient sees an image of the hand initially following the accident;
3) projected, in which the individual sees him/herself experiencing a more-severe injury than what actually occurred.

The replay component was the most amenable to treatment via an early return to the workplace, while the appraisal or projective components were generally more difficult to treat due to attributions that accompanied the flashbacks. Typically, the replay component enhanced the individual’s belief that s/he could protect him/herself in a future similar situation. Conversely, the appraisal or projective flashbacks emphasized (to the patient) that s/he had little control over the accident and that it could have been worse; this enhanced the perception of the workplace as a dangerous environment.

Workers who incur severe hand injuries often avoid the environment where the injury occurred. Despite optimal hand rehabilitation, many of these patients are unable to return to gainful employment due to psychological factors. The literature indicates the importance of direct exposure to either real or imagined cues (which trigger thoughts of the trauma) and coping skills in treating PTSD (Peterson, et al; Keane, et al).

With this in mind, Grunert and associates initiated research to evaluate the response to treatment following work-related upper extremity traumas. The goal of treatment (in these studies) was to alleviate PTSD symptoms and facilitate the patient’s return to work.

The researchers assessed several intervention strategies and their effect on PTSD symptoms. Although this research showed that specific strategies were quite beneficial, it also found that these strategies alone did not yield a high return to work. Additional strategies—such as early return to the worksite, graded return-to-work and onsite job evaluation—produced a much higher rate.

Onsite work evaluation involved accompanying the patient to the actual worksite and providing desensitization as well as supportive psychotherapy. Graded return-to-work involved an in situ desensitization program through which the employee gradually increased his/her exposure to the workplace where the injury was sustained; supportive psychotherapy was provided during the return process. As the following discussion shows, these studies demonstrated that such interventions can provide symptomatic relief and facilitate return to work.

VARIOUS INTERVENTION STRATEGIES

This study examined various intervention strategies and their effect on PTSD symptoms.

METHODS

This study involved 122 subjects (21 females, 101 males) with work-related upper extremity trauma. Of these, 90 were white, 23 were African-American and 9 were Hispanic. Age ranged between 18 and 63, with a mean age of 31.7. Each subject received a psychological evaluation within five days of the injury, and treatment was initiated with all subjects who met the criteria of acute reaction to stress within the 30-day time criteria for PTSD.

During the initial intervention, each patient was helped to confront and reprocess intrusive thoughts; in addition, each received training in stress management and coping skills in order to reduce physiological reactions to the images. Each individual was encouraged to allow flashbacks to occur and to view them as a means of validating
his/her adjustment. The patient was also reminded that 1) this was not unusual given the circumstance; 2) the accident itself was over; and 3) flashbacks were a memory which could be used to improve adjustment.

The confronting/reprocessing intervention was used with 39 patients, who also received additional treatment that included an early return to the worksite—a strategy believed to help desensitize the patient to the work setting. Graded work exposure was employed with 27 patients. Via this procedure, the employer allowed the patient to return to work on a gradual basis. For example, during the first week of a five-week program, the employee observed the work area for one hour each day. During the second week, the employee worked for one hour per day. Work time increased to two hours per day during the third week and to four hours during the fourth week. At week five, the patient returned to full-time employment. This strategy allowed the individual to become desensitized to the work setting and the demands associated with it.

Eighteen subjects required onsite job evaluations. During this process, a psychologist coached the patient to use coping strategies while in the workplace. An employer representative and an occupational therapist participated as well. In addition, the patient’s work restrictions were discussed and attempts were made to determine appropriate guidance and placement.

RESULTS

Of the 122 subjects, 74 (61 percent) returned to work and remained with that employer for at least six months. Although the combined intervention (event confronting/reprocessing and training in coping skills) was effective in reducing PTSD symptoms, these strategies alone produced a low rate-of-return to work (9.8 percent). Adding the early-return-to-the-worksuite strategy increased this rate to 28 percent. The two structured exposure treatments (graded work exposure and onsite job evaluation) produced an even higher rate—90 percent and 83 percent, respectively. However, both treatments resulted in a temporary recurrence of previous psychological symptoms, particularly flashbacks. As a result, all these patients required further psychotherapy before a full return to work.

CONCLUSIONS

Symptoms associated with PTSD have responded to various interventions. In this study, confronting and reprocessing intrusive thoughts related to the trauma reduced both the frequency and severity of those thoughts. Training in stress management and coping skills also helped the patient manage the affective and physiological reactions to these images.

A primary goal of this study was to evaluate the effect of various interventions on a subject’s return-to-work. Most PTSD symptoms were reduced via reprocessing, stress management and coping skills training. This study also demonstrated that a graded work exposure is a successful technique for returning an individual to his/her former employment. As noted, this approach involved significant psychological support, since each patient had weekly psychotherapy sessions throughout the rehabilitation process.

Onsite job evaluations were employed with those who experienced the most-severe avoidance reactions. This intervention allowed patients to benefit from coaching for symptom management in the actual work setting. Unfortunately, this process can be expensive—the patient was accompanied by a psychologist, an occupational therapist and employer representative. In addition, the patient typically required one to three months of additional psychotherapy before returning to work. Those who were unable to return to work also faced a certain amount of risk in that returning to the work setting may produce anxiety and/or depression.

Based on these results, the researchers recommend an intervention that combines event review and reprocessing with training in stress management/coping skills. Early
return to the worksite is an economical approach that can be used to screen patients with severe avoidance reactions. For those still unable to return to work, onsite job evaluation has proven beneficial. Based on data obtained, use of these techniques provides useful clinical application for psychological rehabilitation of work-related trauma patients (Grunert, Matloub, Sanger and Yousif, 1990).

GRADED WORK EXPOSURE

In an effort to replicate a previous study, Grunert and associates proposed this study to examine the effect of a graded work exposure program among a group of employees who had sustained traumatic hand injuries. An in situ desensitization program was developed as the terminal psychological intervention to alleviate PTSD symptoms and facilitate return to work.

METHOD

This study’s 51 patients ranged in age from 19 to 58, with an average age of 32.3. The sample included 14 females and 37 males; of these, 39 were white, 8 were African-American and 4 were Hispanic. Beginning in the first week after injury, all patients received psychological intervention designed to help them manage symptoms and adjust. Three patients were dropped from the study, as their employers would not agree to implement a graded work exposure program.

All subjects were diagnosed with PTSD and all underwent at least one operation to repair their injuries. Due to severe avoidance reactions, none felt able to return to work despite being physically able to do so. At that time, a graded work exposure protocol was introduced. Prior to program initiation, each patient met with his/her physical therapist, physician and psychologist to discuss the patient’s status as well as the program’s rationale. The intervention was presented as a means of allowing each patient time to re-adjust to work demands while dealing with anxiety and avoidance reactions associated with the work setting. It also provided a transition period—each patient continued to have contact with healthcare professionals, which helped minimize feelings of abandonment upon being released to return to work on a full-time basis.

The program encompassed the following steps. 1) During the first week, the employee observed the work area for one hour per day. 2) During week two, s/he worked one hour per day. 3) Work time was increased to three hours per day during week three and to four hours per day during week four. 4) Finally, the employee returned to an eight-hour work day at week five. While in the program, a psychologist monitored the employee’s progress, reinforced the positive aspects of return-to-work and helped the individual address any increase in psychological response to the therapy.

During the observation week, each patient was reminded to use controlled breathing and relaxation techniques in order to reduce anxiety and psychological arousal. In addition, imaginal exposure to the intrusive thoughts and images associated with the injury was used in conjunction with self-statements designed to improve coping and reduce flashbacks.

RESULTS

This study demonstrated that graded work exposure is an effective in situ desensitization technique for returning an injured worker to gainful employment. Some 92 percent of the subjects successfully completed the program. At a six-month follow-up study, 88 percent of these patients remained employed at the same job. One patient had relapsed and experienced a significant increase in psychological symptoms. Two patients did not complete the program. One completed the initial observation phase but failed to return for week two. The other finished week four but had to
discontinue due to severe depression. (This patient had been advised by his psychologist to discontinue the program but disregarded the advice.)

Results of this replication group are comparable in that 80 percent of the subjects remained employed with their previous employer at the six-month follow-up. The two patients who completed the desensitization program but were not employed found alternative work later. In addition, patients reported a decreased frequency of flashbacks following return to full-time employment and at the follow-up, which supports the use of desensitization as a means to reduce PTSD symptoms.

CONCLUSIONS

This study evaluated the effect of graded work exposure as a means of returning hand-injured patients to their previous work setting. In explaining the rationale for the program to patients, the researchers discussed the last time the subjects had been in the work setting and noted the fact that a significant physical trauma had occurred—which led to patients’ feelings that the work environment was unsafe.

Thus, the first week of observation allowed the injured employees to return to the environment in a safe capacity and perceive the workplace as a non-threatening environment. In addition, they were able to implement coping skills within that environment. Based on results, the researchers feel the graded work exposure, as an in situ desensitization treatment for patients with significant psychological symptoms, was beneficial (Grunert, Devine, Smith, Matloub, Sanger and Yousef, 1992).

ONSITE WORK EVALUATIONS

The third study was designed to assess onsite work evaluations as an environmental exposure strategy to facilitate return to work. Patients who had failed to benefit from established methods of behavioral therapy in reducing PTSD symptoms were treated.

METHOD

This study involved 15 patients who had sustained severe work-related hand trauma. Following complaints of severe flashbacks and pronounced anxiety, all patients were evaluated by a psychologist. The subjects, selected from 170 individuals who required psychological intervention during the 24-month study period, were those who had experienced the most-profound avoidance reactions. The sample included 3 females and 12 males, of which 10 were white, 4 were African-American and 1 was Hispanic. They ranged in age from 21 to 53, with a mean age of 33.4.

Initial treatment consisted of learning about and discussing PTSD symptoms. Each patient was also encouraged to return to the workplace as a means to discourage marked avoidance reactions. For those who retained symptoms for two to three months, a review of the injury through guided recall was initiated in an effort to desensitize the patient to anxiety-provoking cues related to the trauma. As a supplement to this therapy, each patient received training in coping skills as a means to reduce emotional distress and physiological arousal. This encompassed relaxation training as well as statements designed to promote more-effective coping (rather than avoidance).

Those with severe avoidance reactions often required more-intensive treatment. First, they participated in a graded work exposure program, which was designed to help each individual overcome avoidance reactions in order to enter the workplace on a regular basis. Those unable to complete such a program participated in an onsite job evaluation. This strategy was developed as a means to expose the patient to anxiety-provoking aspects of the job while accompanied by a psychologist, physical therapist and employer representative. During this process, the patient was supported and coached to implement coping skills in response to any emotional reactions.
RESULTS

All 15 patients were able to remain in the work setting for 60 to 90 minutes in order to complete the evaluation. Following the evaluation, 87 percent (13 patients) were able to use coping skills and desensitize themselves to the work setting. All 13 were able to return to their previous employment within eight weeks and continued to be employed at six- and 12-month follow-ups. Of the remaining two employees, one returned to work (at his own request) on two separate days for less than one hour each time. Following these attempts, previous symptoms recurred, resulting in two inpatient psychiatric treatment interventions. The other patient declined to return to work and chose to pursue her college education on a full-time basis.

CONCLUSIONS

PTSD often follows severe hand trauma and can be debilitating in and of itself. Behavioral interventions that have shown promise in treatment were utilized in this study. All subjects were initially treated with guided recollections of their trauma and provided coping skills training—without success.

Environmental exposure via an onsite job evaluation was successful for 87 percent of the most-difficult patients. This intervention fostered desensitization and helped patients return to the workplace where the injury occurred. The researchers feel that re-exposure to the place of injury, conducted in a supportive environment, helped these employees overcome initial avoidance anxiety. On-the-spot coaching of previously acquired techniques helped the injured employees control symptoms and learn to manage reactions to traumatic cues. Such exposure reduced avoidance enough to allow most patients to use recollections of the injury and desensitize themselves to cues associated with the trauma. This reduced the frequency of flashbacks and helped the employees deal more effectively with anxiety.

One risk associated with this procedure is that it may result in severe emotional distress leading to psychiatric disturbance. This effect was minimized by accompanying and supporting the patients when they first returned to the work environment. The researchers feel this success rate offers a positive adjunct to current treatment approaches for work-related trauma (Grunert, Devine, McCallum-Burke, Matloub, Sanger and Yousif, 1989).

SUMMARY AND CONCLUSION

While most research on PTSD and effective treatment modalities has been confined to combat veterans, victims of natural disasters and survivors of sexual trauma, a unique need exists to address those patients who experience the disorder following work-related trauma. Treatment modalities found to be most successful in treating PTSD can be adapted to the unique needs of such individuals.

Research has shown that behavioral approaches that focus on coping strategies and symptom reduction can also facilitate return to work in the setting where the trauma occurred. To promote this, it was suggested that a hierarchy of exposure techniques be used.

As with other precipitating stressors, work-related job trauma also produces the potential for avoidance reactions. Grunert and associates have repeatedly demonstrated that early intervention and follow-up have a beneficial impact on dealing with avoidance reactions and allowing the individual to be channeled through the stages of treatment leading to re-exposure to the work environment (i.e., graded work exposure or onsite job evaluation). As these studies demonstrate, employing a combination of approaches helps relieve PTSD symptoms and facilitates the injured employee’s return to the work setting and a normal pattern of life.

Added material
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