

Stress Reduction Treatment of Severe Recurrent Genital Herpes Virus¹

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Four individuals with high-frequency recurrences of genital herpes virus of at least 2 years' duration were treated with two behavioral stress-reduction treatments. Subjects were given 10 weekly sessions of frontalis EMG biofeedback (2 subjects) or progressive muscle relaxation treatment (2 subjects). Pre-session and post-session frontalis EMG measures were recorded for all subjects across treatment. Outcome was measured by daily and weekly symptom charting mailed in weekly over 6 months, or by telephone interview after 6 months. Results demonstrated substantial improvement in reported symptoms with both treatments. Relaxation treatment resulted in a 66% and 100% reduction in frequency of recurrences. Frontalis EMG biofeedback resulted in a 72% and 7% reduction in frequency of recurrences. Follow-up at 1-year posttreatment showed that treatment effects were maintained by one subject, partially maintained by two, and reversed in one subject. The need for controlled investigation is emphasized.

Descriptor Key Words: genital herpes; recurrences; stress reduction; EMG biofeedback; relaxation training.

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Genital herpes is a common sexually transmitted virus that infects an estimated 300,000 new cases each year (Centers for Disease Control, 1980). The virus typically produces small grouped lesions, on and surrounding the genital area, that become ulcerative, frequently resulting in pain, itching, muscle aches, fever, swollen lymph glands, dysuria, vaginal discharge, and malaise (Freudberg, 1982). There is currently no cure for the virus, and little effective symptomatic treatment is available beyond the initial outbreak. Once contracted, the virus remains dormant in the nerve cells of the sacral ganglia from where it can activate recurrence of lesions at any time (Juel-Jensen, 1973). Recurrences may be frequent or may not occur. It has been estimated that most individuals who contract the virus experience an average of four recurrences a year (Himell, 1981). Recurrences are thought to be activated by a variety of physical and biochemical stresses such as menstruation, coital friction, chafing, illness, overexertion, and fatigue (Bierman, 1983; Lynch, 1982). Many have viewed psychosocial stress as the primary or significant factor in triggering of recurrences (Freudberg, 1982; Hamilton, 1980; Hutfield, 1968; Juel-Jensen, 1973; Marks & Patrick, 1983; Wickett, 1982). Although inconclusive, data tend to support the relationship between psychosocial stress and recurrence of genital herpes (Goldmeier & Johnson, 1982; Taylor, 1978; Weichselbaum, 1956).

The purpose of this investigation was to assess the efficacy of behavioral stress reduction interventions in decreasing the frequency of recurrences of genital herpes. Previous authors have reported a positive effect for hypnosis in recurrence rate reduction of oral herpes (Ambrose & Newbold, 1958; McDowell, 1959) and genital herpes (Freudberg, 1982). However, no other behavioral interventions have as yet been reported in the psychological literature. If psychosocial stress indeed triggers recurrences of genital herpes, it was hypothesized that EMG biofeedback and progressive muscle relaxation treatments might reduce the frequency of recurrences and offer its sufferers some degree of symptomatic control.

METHOD

Subjects

Subjects for this case report were four unsolicited volunteers who had contacted a university-based herpes research center to inquire about ongoing research. All subjects were single females between the ages of 23 and 33 years ($\bar{X} = 29.3$). Each had been diagnosed with genital herpes both by a physician and by positive laboratory culture (Nahmias, Wickliffe,

Pipkin, Leibovitz, & Hutton, 1971) conducted for this study. Each had contracted the virus at least 2 years prior to the study ($\bar{X} = 5$ years) and had experienced an unusually high frequency of recurrences. Self-report of the number of recurrences in the preceding 12 months ranged from 12 to 15 recurrences ($\bar{X} = 13.8$). On the basis of self-report of recurrences since contracting the virus, all subjects ostensibly experienced a high frequency of recurrences in the years subsequent to contracting the virus ($\bar{X} = 12.7$ recurrences per year). In addition to genital herpes, two subjects also experienced oral herpes virus recurrences (Table I).

Procedure

Subjects of this case study were contacted by the senior investigator after each had volunteered for research participation. All subjects were informed that this study would investigate the effectiveness of a stress reduction treatment in the control of genital herpes recurrences. It was explained that no evidence was currently available that such treatment would reduce or alleviate recurrences. Instead, the treatment was experimental and would be provided at no cost to subjects. All subjects were seen individually by the senior investigator for interview and administration of a brief psychometric battery. Next, subjects received a 10-week package of either relaxation training (RT) or frontalis EMG biofeedback training (BT). All training was provided by clinical psychology graduate students who received at least 4 hours of training in technique and 10 hours of individual supervision with the senior investigator.

Baseline and postsession EMG measurement were recorded for all RT and BT subjects. Equipment used was the Autogenic 1500c Myograph and the Autogenic 5100 Digital Integrator. EMG measurements were recorded from surface electrodes attached to the frontalis area.

Relaxation Treatment. Cases I and II received 10 weekly sessions of relaxation training following the program of Bernstein and Borkevec (1973). Each session consisted of a 5-minute resting adaptation period during which no measures were taken. Next, electrodes were attached and five 1-minute pre-session baseline EMG measures were recorded for each session. Relaxation training was then provided, followed by five 1-minute postsession EMG measurements. Following the first training session, subjects were instructed to begin home practice on a daily basis.

Biofeedback Treatment. Case III and IV received 10 weekly training sessions of frontalis EMG biofeedback treatment. Each session consisted of a five-minute resting adaptation period followed by five 1-minute pre-session baseline recordings. Biofeedback training was then provided, consisting of auditory "click"

Table I. Symptom History and Treatment Outcome

Subject	Age	Symptoms	Duration (years)	Recurrences (previous 12 mo.)	Total recurrences	Treatment	% symptom reduction
Case I	30	Genital, oral	10	14	150	Relaxation	100%
Case II	31	Genital	5	12	50	Relaxation	66%
Case III	23	Genital	2	14	25	Biofeedback	72%
Case IV	33	Genital, oral	3	15	40	Biofeedback	7%

or “pulsating tone” feedback heard through an external speaker. Each session was about 40 minutes in length and typically was divided into two or three training periods separated by brief rest periods to avoid fatigue. Following each session, five 1-minute postsession EMG measurements were recorded. After the first session, subjects were instructed to begin home practice on a daily basis.

Outcome Measurement. After completion of training, RT subjects were given packets containing daily logs and weekly logs, which measured genital herpes recurrences and other physical illnesses experienced. Subjects were instructed to complete daily logs each day before retiring, and weekly logs once per week for a 6-month period. Each subject was given stamped, addressed envelopes in which to mail the logs to the investigator. Both subjects complied fully for the 6-month measurement period.

BT subjects were each contacted by telephone 6 months after completion of training by a research assistant not involved in the study. At this time, they were questioned concerning the number of genital herpes recurrences in the past 6 months.

In addition, at least 1 year after treatment was completed, all RT and BT subjects were contacted by telephone by the same research assistant and questioned regarding number of recurrences in the past year.

As the form of measurement in the 6-month outcome differed for RT and BT subjects, comparisons between these two types of treatments are not possible in this study.

RESULTS

Results of EMG measurement are provided in Figure 1. All subjects began treatment with relatively low EMG microvolt resting levels. It appears that all subjects did demonstrate a decrease in muscle activity for each session. Despite this within-session EMG decrease, there is little or no indication of EMG decreases across training for three cases. Only Case IV showed any apparent acquisition of lowered EMG level.

Table I shows pretreatment (12 months) frequency and posttreatment report for RT and BT subjects. In the 6-month outcome period following treatment, RT subjects reported a 100% and 66% reduction in recurrence frequency ($\bar{X} = 83\%$). BT subjects reported a 72% and 7% reduction ($\bar{X} = 40\%$). The subject who showed little or no clinical improvement (Case IV) was also the one who apparently demonstrated some acquisition of lowered frontalis EMG level.

At one year posttreatment, all four subjects were contacted for follow-up. At this time, reported overall recurrence reduction for the 1-year

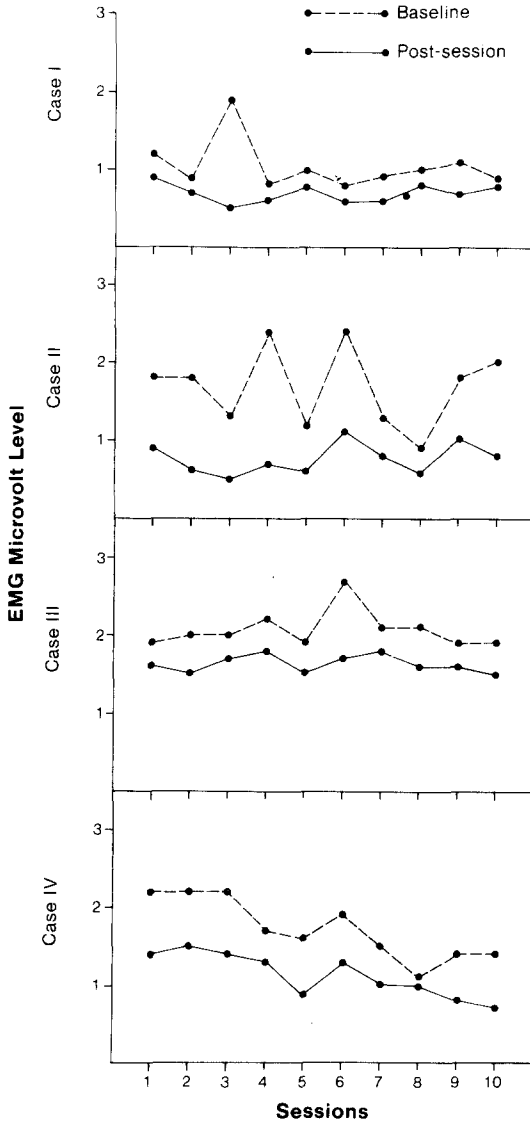


Fig. 1. Measurement of pre-session baseline and postsession EMG level for each subject across training.

posttreatment period for Cases I through IV was 100%, 0%, 29%, and 38%, respectively. Two subjects (Cases I and IV) reported continued success or further improvement. Case I had experienced no recurrences at 6 months posttreatment and reported no recurrences at 1-year follow-up (resulting in an overall 100% reduction in recurrences). Case IV had experienced seven recurrences at six months posttreatment but reported only an additional three recurrences at 1-year follow-up (resulting in an overall 38% reduction in recurrence frequency at 1-year follow-up).

Two subjects (Cases II and III) reported a rise during follow-up in recurrence frequency. Case II reported 10 recurrences during the follow-up period (resulting in no change in symptom frequency compared with pretreatment). Likewise, Case III reported eight recurrences during the follow-up period (resulting in an overall 29% reduction in recurrence frequency compared with pretreatment).

DISCUSSION

This case study has examined the efficacy of behavioral stress reduction treatments for individuals with severe, frequently recurring genital herpes virus infection. Case findings suggest that such treatments may be helpful in reducing or controlling recurrences. Both subjects receiving relaxation training demonstrated improvement, while one subject receiving EMG biofeedback training showed improvement. At follow-up, a substantial treatment effect was maintained by one subject, while two subjects showed a more moderate effect.

As a consequence of the different outcome measurements used for the two forms of stress reduction treatment, outcomes are not comparable across treatments. No conclusions can be drawn concerning relative efficacy of relaxation versus biofeedback treatments.

From this case study it is not possible to determine factors responsible for improvement. Reduction in recurrence frequency cannot be clearly attributed to treatment-specific effects. Instead, improvement could be explained as a consequence of nonspecific effects of treatment such as supportive contact with the experimenters; effects of impressive, sophisticated instrumentation; or demand characteristics and placebo. Several authors (Blank & Jarratt, 1979; Kern, 1979) have reported a substantial placebo effect in as many as 40% of individuals with genital herpes.

Furthermore, it is possible that disease-related factors were responsible for improvement. Frequency of recurrences generally tends to decrease over time following the 1st year of infection, and may be quite

variable. Since all subjects reportedly experienced high levels of recurrences for several years prior to treatment, it appears unlikely that improvement in this study was due to disease-related factors alone. Nevertheless, there was considerable variability in subjects' responses to treatments. A control group would be required before changes due to the course of the disease could be ruled out.

While these case study findings are encouraging, further research will be required to determine whether behavioral stress-reduction treatments are of therapeutic value for individuals with recurrent genital herpes. Future research should control for nonspecific effects of behavioral treatments as well as disease-related decreases in recurrences. Since treatment effects were not maintained for all subjects at follow-up, future research should also examine individual differences that may be associated with success such as coping strategies and the like. A controlled study to assess the efficiency of relaxation training with severe recurrent genital herpes virus is currently in progress.

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