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ABSTRACT The large number of college students suffering from depression and the undesirable aspects of current treatment practices suggest a need for new methods of treatment and prevention. Physical exercise has been suggested as an easily administered therapy which does not require close professional supervision. College students (N=18) who had sought professional help for depression participated in a study which compared the effectiveness of counseling therapy and running to counseling therapy alone. Subjects were classified as moderately to severely depressed on the Beck Depression Inventory (BDI). The runners (N=9) ran three times a week for 10 weeks while engaging in therapeutic counseling. Non-runners (N=9) received only therapeutic counseling. Running combined with counseling therapy produced significantly greater decreases in depression than counseling therapy. The difference between the pre- and post-BDI scores and the counseling-only group was nonsignificant, indicating that the significant main effect for the treatment factor was due primarily to the difference between the pre- and post-BDI scores for the combined running and therapy group. (Author/NRB)

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The Effects of Running on Individuals
Who are Clinically Depressed*

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Running Head: Running as Treatment for Depression

*Paper presented at the American Psychological Association Convention,
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The Effects of Running on Individuals Who are Clinically Depressed

Depression is a major psychiatric problem on college campuses today. It has been reported that up to 78% of American college students may suffer some degree of depression. Of these, 46% will require professional help; as many as 500 of them may commit suicide.

The treatments of depression most used today include drug therapy, electroconvulsive shock (ECT), and counseling therapy. While these treatments are the best available at this time, together and individually they possess some undesirable aspects. For example, each involves professional supervision which is costly and often difficult to adequately obtain due to a high patient to doctor ratio. Drug therapy may result in an unhealthy dependence upon the drug itself as well as side effects which are sometimes drastic. The nature of ECT makes both patients and professionals reluctant to use it. Finally, the success of counseling therapy depends to a great extent upon situational factors (i.e. the personalities of both patient and counselor, therapeutic method used, motivation of the patient, etc.).

In view of these factors and the tremendous number of people who suffer from depression, it is evident that a continued search for methods to treat and prevent it is in order. What is needed is a therapy which is easily administered to a group of people and does not require close professional supervision. Physical exercise has been suggested as a possible answer to these needs. Three major studies have used running as

the primary treatment for mildly depressed college students (Brown, Ramirez, & Taub, 1978; Folkins, Lynch, & Gardner, 1972) as well as more severely depressed individuals (Greist, Klein, Eischens, & Faris, 1978). The present study investigated the effects of running paired with counseling therapy on college students who had sought professional help for feelings of depression.

METHOD

The participants were recruited from the Mental Health Center and the Psychology Clinic at The Pennsylvania State University. They were four male and eighteen female undergraduate college students, ages 18 to 30, who had been diagnosed as being moderately depressed.

Two types of therapy were used in this study: running therapy and counseling therapy. The running therapy lasted ten weeks. Each student participating in the running therapy ran with the investigator for at least 20 minutes three times a week. No criterion levels for distance or speed were set. Each person ran at a rate which allowed him/her to carry on a comfortable conversation. The amount of running was determined by each subject's physical condition.

Throughout the running sessions, proper methods of warming up and noncompetitive running were emphasized. All runners were told that the exercise was to be undertaken for personal gain. It was not a means of comparing one's self to others.

The counseling therapy took place at either the Mental Health Center or the Psychology Clinic. The Mental Health Center is staffed by professional psychiatrists, psychologists, and interns. The Psychology Clinic is staffed with advanced graduate students in psychology. These

centers serve people complaining of many different psychological problems. Clients are either self-referred or referred from some other agency on campus. This study was solely concerned with those individuals suffering from depression.

After an initial intake interview, clients were assigned to a therapist. They met with their counseling therapist for at least 30 minutes once a week. Both individual and group counseling took place at the counseling centers so subjects could have been involved in either or both forms of therapy. The number of weeks each subject spent in counseling was individually determined, therefore, subjects may have received varying amounts of therapy.

Procedures

During the first visit to the Psychology Clinic or Mental Health Center, all students were asked to fill out the Beck Depression Inventory (BDI) (Beck, Ward, Mendelson, Mack, & Erbaugh, 1961). Those who scored above 15 on the BDI were asked if they would like to participate in the running program.

All volunteers were randomly divided into two groups. Those in the experimental group, the running group (n=11), were asked to begin running therapy as well as counseling therapy. After ten weeks of running therapy, they retook the BDI.

Students in the control group, the non-running group (n=11) did not participate in the running therapy. They were told that at the present time the number of runners the investigator could handle had been exceeded. This meant that they would have to wait until the

number of runners was reduced. When ten weeks had passed, all non-runners were contacted by letter. They retook the BDI and began running therapy similar to that of the running group.

Four people dropped from the study. Two were dropped from the running group. One withdrew from school and subsequently left the area and the other became ill during his sixth week and did not recover in sufficient time to complete the study. Two were also dropped from the non-running group. One refused to retake the BDI after ten weeks and the other initiated her own running program after learning about this study. There were nine subjects in each group for the final analysis.

RESULTS

Table 1 shows the pre- and post-BDI scores for running and non-running groups. The pre-BDI scores did not differ significantly prior to the running intervention. The post-BDI mean for the running group (5.1) was well within the normal range on the BDI. (Scores of 0-9 considered normal.) The non-running group mean was 18.56 on the post-BDI, indicating they were still moderately depressed. (Scores of 16-22 considered moderately depressed; scores above 22, severely depressed.)

Insert Table 1 About Here

The results of a two-way ANOVA showed significant main effect for the treatment factor, $F(1,16) = 4.720, p .05$, and a significant interaction effect, $F(1,16) = 9.322, p .01$. Post hoc analysis using the Tukey method showed that the difference between the pre- and post-mean scores on the BDI for the non-running, counseling only group was nonsignificant. This indicated that the significant main effect for the treatment factor

was primarily due to the difference between the pre- and post-mean scores on the BDI for the group receiving both running and counseling therapies.

Insert Figure 1 About Here

Discussion

The results of this study indicate that running plus counseling have a more beneficial effect than counseling therapy alone on persons who are feeling depressed. These results concur with those of previous studies (Brown et al., 1978; Folkins et al., 1972; & Greist et al., 1978). In addition, the findings of this study provide some support to the hypothesis that running combined with counseling may be more helpful than running alone. Three factors contribute to this observation.

(a) First, Greist et al. (1978) found psychotherapy and running to be equally effective depression treatments, as opposed to this study's finding that the group receiving both running and counseling therapies improved much more than the group engaged only in counseling. (b) Two students (F and G on Table 1) were forced to end counseling therapy after only one or two sessions. While both of these people did reduce their depression scores over the ten-week running period, they represent the two highest post-scores in the running group and were the only ones in the running group to maintain a mildly depressed rating on the BDI. (c) The running group recovered more quickly than the non-runners. By the end of ten weeks, only one runner remained in counseling while four of the non-runners continued beyond ten weeks. Thus, while running alone helps to alleviate depression, it appears that the help of a

therapist may bring about even more relief from depression.

There may be the possibility that the results of this investigation are due to the increased attention the running group received rather than the addition of running to the usual counseling format. This claim can be disputed in two ways. (a) First, all but one of the runners in this study reported that, if given the choice, they would have preferred to run more on their own. One person even asked to run entirely alone. This type of feedback makes it appear that companionship was not what these people found helpful. Something about the running itself was motivating them to continue. (b) There is also the case of the student in the non-running group who began running on her own. Her self-made running program was similar to that of the running group's except that she ran by herself. Her improvement, as measured by the difference in her pre- and post-BDI scores (26 and 0 respectively), is at least as much as that experienced by the running group members.

Contrary to many lay as well as professional impressions, the findings of this investigation indicate that people suffering from depression are willing to engage in physical activity. This statement is based on three observations: (a) first, only one person who was asked to participate in this investigation declined; (b) no one in the running group dropped out because he/she no longer wanted to run; and (c) all of those in the running group indicated that they intended to continue running after completing participation in the study.

In many ways, running is unlike other treatments now used for depression. For example, running needs little professional supervision.

Once a person has learned the correct procedures for warming up and cooling down and to listen to feedback from his/her body, he/she can run alone. The treatment is very inexpensive and the running can be undertaken at anytime and in any "dosage" the patient finds appropriate. After initial direction, students can continue to use running to treat both severe and mild feelings of depression at no expense, at a time which is convenient for them, and at their own level of fitness.

Another way in which running is unlike other depression treatments is in its positive side effects. Running results in increased physical fitness while other therapies, drug therapy and ECT for example, produce negative physical side effects (Davison & Neale, 1974).

Running therapy has also been shown to be effective under many different conditions. As stated earlier, running has been used alone or in conjunction with counseling therapy, with individual as well as group therapy, and for levels of depression ranging from mild to severe.

CONCLUSION

With depression as prevalent as it is on college campuses today, inexpensive, easily administered, effective therapies are needed. It appears that running therapy may meet these needs.

TABLE 1

PRE- AND POST- SCORES ON THE BECK DEPRESSION INVENTORY

SUBJECTS											TOTALS	MEANS	SD
RUNNING	A	B	C	D	E	F	G	H	I				
GROUP (N = 9)													
Pre-BDI	19	21	17	16	19	22	23	40	30	207	23.0	7.58	
Post-BDI	3	2	1	4	5	10	15	6	0	46	5.1	4.75	
NON-RUNNING	J	K	L	M	N	O	P	Q	R				
GROUP (N = 9)													
Pre-BDI	30	21	50	17	21	16	16	21	16	208	23.10	11.02	
Post-BDI	33	8	23	14	26	15	17	19	12	167	18.56	7.70	

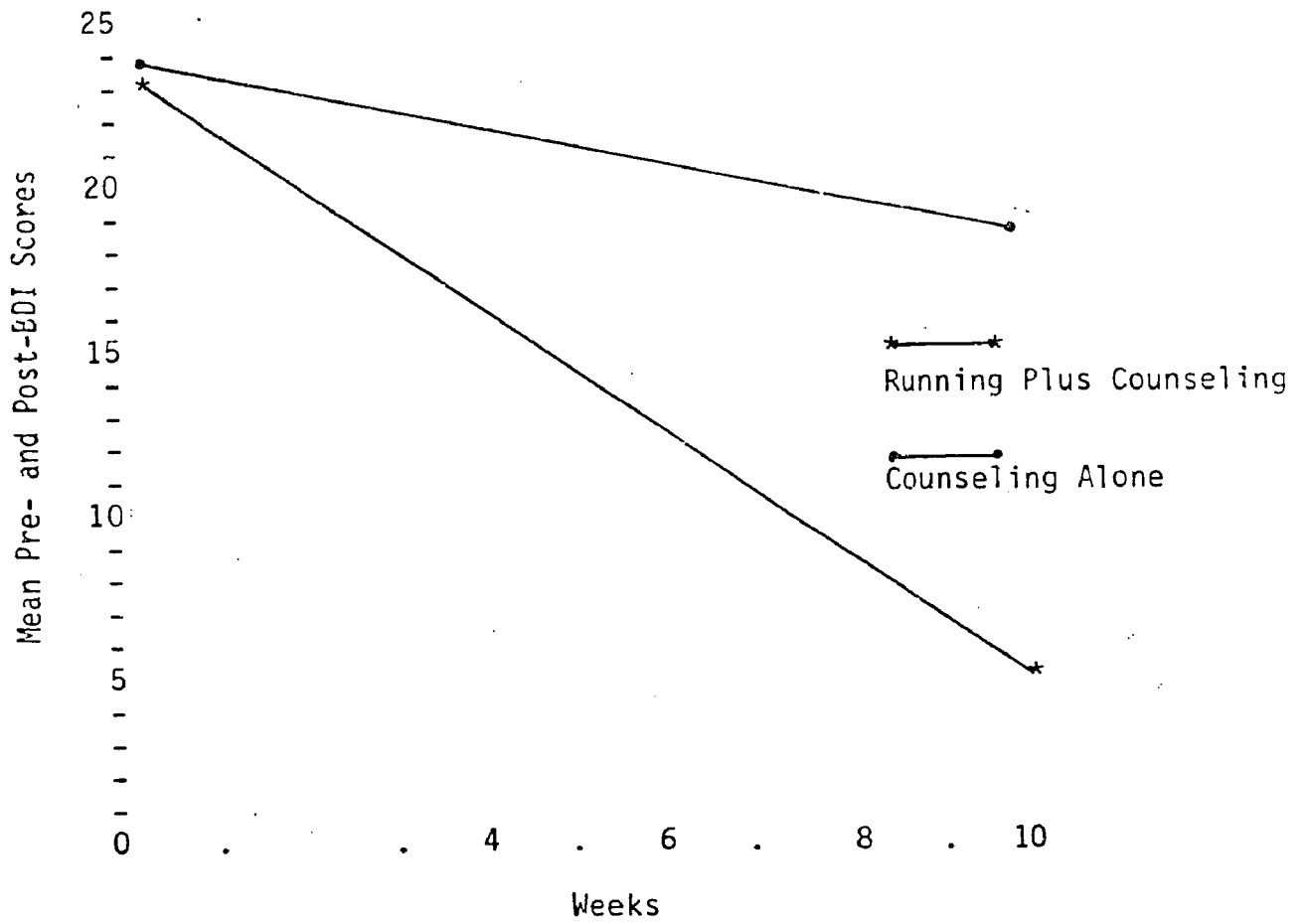


Figure 1--Running counseling therapy versus counseling alone

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