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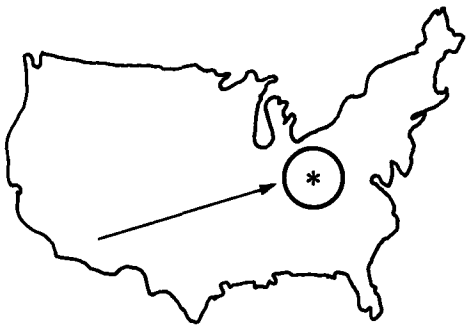

The Atwood Hall Health Promotion Program, Federal Medical Center, Lexington, KY

Effects on Drug-Involved Federal Offenders

LEXINGTON, KENTUCKY

Abstract—*There is a critical need for the development of effective substance abuse and dependence treatment programs in prisons and jails. One aspect of treatment provision within this population that has received insufficient research attention is the inclusion of health promotion or wellness programs, including exercise and other health-related lifestyle modification training. Little is known about either the physiological or psychological consequences of such lifestyle modification programs among prisoners with substance use disorders. This study reports the effectiveness of an experimental wellness program included as part of a residential treatment unit in a federal correctional institute in the United States. A sample of 43 female offenders with a history of polysubstance abuse or dependence, who had volunteered to be part of a residential drug treatment program, were evaluated. Changes in health status and perceived psychological well-being between entry into the program and exit after maintaining participation for a minimum of 9 months were assessed. Pretest–posttest comparisons on a variety of physiological parameters indicated that significant improvements had occurred in the physical fitness of the group. Thematic analysis of qualitative self-reports by inmates exiting the program suggested that participants had also experienced significant enhancements in a number of areas pertaining to psychological well-being, including self-esteem, health awareness and concerns, healthy lifestyle adoption, and relapse prevention skills. These results suggest that including health promotion training in drug treatment programs for incarcerated offenders may have beneficial results.*

Keywords—health promotion; prison; substance abuse.

INTRODUCTION

SIGNIFICANT PROPORTIONS of the prison population in the United States and elsewhere are characterized by serious substance abuse or dependence problems. Murray (1991), reporting results from a survey of an ad-

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Requests for reprints should be addressed to Michael Peterson, EdD, 106 Lee Hall, SUNY-Oswego, Oswego, New York 13126.

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missions cohort of 1,165 federal offenders, estimated that more than 50% of the sample met *Diagnostic and Statistical Manual of Mental Disorders*, third edition, revised (*DSM-III-R*; American Psychiatric Association, 1987) criteria for a diagnosis of either psychoactive substance abuse or dependence in the 6-month period immediately preceding their arrest. Other recent studies have reported similar prevalence estimates (Bureau of Justice Statistics, 1992; Wish & O'Neil, 1989). The frequency of substance abuse and dependence problems is high among female offenders as well as males. Recent reports from the United States estimate that 30% to 47% of women inmates are experiencing such problems at the time of arrest (Bureau of Justice Statistics, 1992; Murray, 1992). Similarly, in a survey of female offenders from Australia, Hurley and Dunne (1991) reported that the lifetime prevalence of psychoactive substance use disorders was 54%. Not surprisingly, the sequelae of alcohol and other drug abuse or dependence, including HIV seropositivity, rank as the most frequently reported medical problems among incarcerated women (Smith et al., 1991).

One aspect of substance abuse treatment in prisons that has received insufficient attention to date is the inclusion of health promotion or "wellness" programs as a component of the treatment process. Very little is known about either the physiological or psychological consequences of such lifestyle modification programs among prisoners with substance use disorders. To fill this gap, a health promotion program was included as part of the Atwood Hall residential treatment unit within the Federal Medical Center in Lexington, Kentucky, for a population of female offenders with a history of polysubstance abuse or dependence.

PROGRAM PHILOSOPHY

The inclusion of a health promotion program as part of the overall drug treatment regimen was intended to provide a more holistic approach that complements and enhances conventional residential treatment approaches. The program philosophy falls within the broad purview of the cognitive-behavioral approach to relapse prevention (Marlatt & Gordon, 1985; T.J. Murphy, Pagano, & Marlatt, 1986). The expectation is that successful health-related lifestyle modifications such as exercise intervention may help individuals to develop heightened self-efficacy and self-control strategies to cope with stressful situations ordinarily associated with relapse to substance use. Additionally, lifestyle modification may provide individuals with positive behavioral alternatives to substance use. Improvements in physical fitness and overall health status may also potentially promote successful relapse prevention. Finally, the successful maintenance of health promotion programs may significantly reduce morbidity and premature mortality in this population (Rehm, Fichter, & Elton, 1993).

PROGRAM RATIONALE

The physiological and psychological benefits of habitual exercise and other health-related lifestyle modifications have been well-documented in studies of the general population (Anthony, 1991; Hughes, 1984; Martin & Dubbert, 1982). A limited body of research has also evaluated the effectiveness of health promotion programs among alcohol dependent and abusive drinkers outside correctional institutional contexts. For example, J.B. Murphy (1970) and Tsukue and Shohoji (1981) reported significant improvements in physical fitness among inpatient alcoholics after participation in health promotion programs. Whiting (1981) and Palmer, Vacc, and Epstein (1988) observed enhancement in a variety of indicators of psychological well-being among inpatient alcoholics after completion of treatment programs that included exercise interventions. T.J. Murphy et al. (1986) reported both enhanced fitness and significant reductions in alcohol consumption among a sample of heavier drinkers taking part in an aerobic exercise program. Although incomplete, these results are encouraging and suggest that health promotion programs may also have beneficial results among other groups of substance dependent individuals, including prison populations (Walters, Heffron, Whitaker, & Dial, 1992).

In the health promotion model, the first step to change is to create health awareness or consciousness. This phase is considered to be crucial, in that participants must understand and acknowledge that their health needs improvement (O'Donnell, 1992). The difference between "knowing" one needs to change and thinking one "might" need to change may determine whether or not any change is actually effected. In the present context, this first objective was addressed through baseline health and fitness assessments and by completion of the Lifestyle Assessment Questionnaire. The second step is to provide a means for addressing health issues of greatest concern. It is important in administering a program of this kind that the participants do not become dependent upon the instructor and can still function independently after the instructor departs. In the prison context, there was also special emphasis on the enhancement of self-efficacy and the promotion of "health empowerment" through a combination of aerobics classes, health education lectures, and exercise sessions. Inmates were taught how to exercise, how to prevent certain lifestyle-related diseases, and how to confront health issues made evident during the fitness assessment (e.g., obesity, cardiovascular function, and musculoskeleton function). It was hoped that by providing them with information on what physical changes were needed, and the means to

exact that change, enhanced health empowerment, self-efficacy, and self-esteem would occur. Consistent with the expectations of the cognitive-behavioral approach, it was also hoped that these psychological benefits from the health promotion program might serve to enhance individuals' ability to confront and address the psychological issues associated with substance abuse and dependence. That is, the health promotion aspect of the drug rehabilitation program was designed to complement and reinforce the psychological and sociological components of the general treatment regimen.

POPULATION CHARACTERISTICS

Participants had volunteered to be involved in a residential drug treatment program. All subjects were characterized by a history of moderate-to-severe polysubstance abuse or dependence as determined by self-reported substance use patterns, record review, and clinical assessment utilizing *DSM–III–R* criteria. Additional selection criteria for participation in the program included length of time remaining before projected release (a minimum of 18 months); no serious current medical, psychiatric, or psychological problems that would limit participation; no recent history of violent institutional infractions; and fluency in spoken and written English. The sample for the present report included 43 women, ages 24 to 63 (M = 35.0 years). Forty-two percent of subjects were White (non-Hispanic), 28% were African American, and 30% were Hispanic. Fifty-five percent of subjects reported a legal income of less than $12,000 prior to incarceration, and an additional 20% reported incomes of less than $20,000. Thirty-eight percent had a high school education, 20% had never completed high school, and 40% had some college or technical school training. Only one subject was a college graduate.

PROGRAM STRUCTURE

The program was housed in an independent facility (Atwood Hall) within a security-level-two Federal Medical Center for women located in Lexington, Kentucky. A detailed description of the overall program procedures and rationale is included in Murray (1992). Briefly, major components of the 12-month treatment regimen included a reduced staff-to-inmate ratio (1:12), intensive treatment delivery (10.5 hr per day) with individualized treatment plans, strong emphasis on training in general social skills and relapse prevention techniques, and comprehensive transitional services. Treatment for alcohol, illicit and other drug dependencies included intensive therapy in residential meetings, small groups, and individual sessions. The dual objectives of treatment were to provide skills for individuals to remain abstinent from psychoactive substances and to lead productive lives.

In October of 1991, an outside consultant was hired to administer a wellness or health promotion component to the general treatment program. Specifically, the health promotion program included an initial health and fitness assessment, completion of a Lifestyle Assessment Questionnaire, a weekly 2-hr lecture/exercise session, and an exiting health and fitness assessment. Results of the initial measurements were returned to the subject in a report format that assessed their health status in comparison to others of similar age and sex. The exiting report served as an indication to subjects of their progress and change in health over the period of participation in the health promotion program. Lectures were presented on a variety of topics incorporating Hettler's (1984) six dimensions of wellness: physical, occupational, spiritual, intellectual, emotional, and social. Specific topics included reduction of fat intake, weight management, reduction of the risk of osteoporosis/arthritis, financial management, stress management techniques, and educational improvement.

Group exercise programs were initiated via the development of peer-led aerobic dance classes, and individualized exercise programs were established through education on how to exercise, the benefits of exercise, and instructor-led classes. Subjects were required to participate in at least two formal exercise sessions per week and were also encouraged to exercise independently on their own time.

PROGRAM EVALUATION

Health and fitness assessments available to the researchers were constrained by strict security rules limiting the types of equipment that could be brought into the facility and a lack of available equipment on prison grounds. Assessments obtained consisted of resting heart rate, resting blood pressure, body composition, aerobic capacity, muscular endurance, flexibility, and weight. Resting heart rate was measured using a 15-sec pulse rate check via palpation of the wrist while the subject was resting comfortably in a sitting position. Resting blood pressure was evaluated through the use of a stethoscope and sphygmomanometer. Body composition was analyzed through skinfold measures using Jackson and Pollock's (1985) three-site caliper test: triceps, suprailiac, and abdomen. Aerobic capacity consisted of a 3-min step test at a metronome pace of 92 beats per minute, at a step height of 12 inches. Aerobic capacity was determined by the heart rate taken for 10 sec immediately following the test. Flexibility was measured by a standard sit-and-reach test. Muscle strength evaluation involved a push-up test to fatigue and a 1-min timed bent-knee sit-up test. Weight was assessed through the use of a standard calibrated weight scale.

To evaluate the behavioral and psychological impact of the health promotion program, a focus group analysis involving subjects ($n = 22$) who were exiting the drug treatment program and had been involved in the health promotion programming for a minimum of 9 months was conducted. The analysis consisted of a discussion of the following five open-ended questions posed by the researcher:

1. What did you find most helpful or beneficial from the wellness program and classes?
2. From your observations of other inmates in the program, what issues/classes were important/helpful?
3. What has changed for you in your quality of life, health, and wellness?
4. How have the wellness classes helped you in your drug rehabilitation and recovery?
5. What recommendations or ideas do you think would be helpful in making this program better?

The researcher immediately recorded comments made by the subjects in written form during the course of the group discussion. Only inmates exiting the program were used in the focus group analysis to prevent any fear of reprisal for negative comments made about the program to interfere with their comments and to promote honesty about their perceptions of the program.

Based upon pretest–posttest comparisons, positive changes in health and fitness parameters were observed after participation in the health promotion program (Table 1). Significant changes were seen in aerobic capacity, muscular strength, and diastolic blood pressure, and positive trends were observed in flexibility and percent body fat. No significant changes were seen in systolic blood pressure measures or resting heart rate. However, both pretest and posttest measures were within acceptable boundaries, so significant shifts in these outcomes were not anticipated.

Responses to the five questions presented in the focus group analysis are discussed in the context of three general themes: health awareness and consciousness, self-esteem, and relapse prevention and healthy lifestyle adoption.

Health Awareness and Consciousness

Consistent with other reports (Walters et al., 1992), this population group exhibited a lack of understanding about personal health and a lack of concern about personal health as observed through interaction and behavior of the subjects by the principal investigator and indicated by the drug treatment program director. Consequently, it was important to address this circumstance through health education and awareness counseling. When this programming was completed, inmates conveyed that they had learned. For example, one inmate reported that "the educational part of the Wellness Class was very important to enhancing my understanding and pointing out errors in my thinking about health." Another stated, "All of the issues presented in the lecture portion were helpful and informative. All of the issues were needed, since we did not have any previous knowledge about these issues." Others conveyed that they really did not understand the physical damage to their bodies resulting from substance abuse. As one inmate stated, "Our addiction hurt our bodies more than just emotionally and mentally. It hurt us physically. These classes helped us deal with the physical abuse."

The health and fitness assessments provided tangible results of participation in the wellness program for inmates. By undergoing a fitness test, they were able to obtain immediate results reflecting their health status. In addition, the fitness tests were designed to measure health parameters that were under the control of the individual. Thus, if an inmate's aerobic capacity was low, she had the power to improve it, and by providing the knowledge and skills to make that change, it was hoped that this would empower her to improve her health. This in turn may have positive psychological and emotional implications. Walters et al.

TABLE 1
Health Measure Change and Mean Scores

	n	Percent With Positive Change	Pretest *M*	Posttest *M*	Mean Change	*T*
Weight (lb)	43	44.2	161.7	161.3	−0.5	0.41
Resting heart rate (bpm)	42	47.6	71.4	71.0	−0.4	0.24
Systolic BP (mmHg)	42	54.8	112.2	110.7	−2.2	1.27
Diastolic BP (mmHg)	42	54.8	76.3	73.8	−2.9	2.18[a]
Aerobic capacity (bpm)	38	68.4	26.4	24.0	−2.3	3.56[a]
Percent body fat	39	61.5	34.6	33.6	−1.1	1.87
Flexibility (in.)	42	59.5	17.8	18.3	0.4	1.43
Push-ups (to fatigue)	38	78.9	13.7	20.4	8.0	6.03[a]
Sit-ups (per minute)	38	68.4	21.5	24.3	3.5	3.39[a]

[a]Significant at $p < .05$.

(1992) contended that for some individuals physical health may potentially be as important as psychological health in defining a drug-free lifestyle. Inmates also felt that the program did not just make them think that change was a good idea but that "I now know I need to change." Another stated, "It has made me more aware of my own health and given me an incentive to change." "It [the program] has made me more aware of what I need to do to keep off drugs and become healthy."

Self-Esteem

In the literature on health promotion programs in the general population, significant improvements in self-esteem are commonly reported among participants (Folkins & Sime, 1981; Hughes, 1984; Martin & Dubbert, 1982). Reported increases in self-esteem are also common among alcoholics and heavier drinkers in the general population who participate in health promotion efforts (T.J. Murphy et al., 1986; Palmer et al., 1988). Consistent with these results, the enhancement of self-esteem was reported by a number of inmates who participated in this program.

The implementation of peer-led aerobic classes, as well as the formal exercise classes conducted by the primary researcher, also provided a social atmosphere that may have indirectly enhanced social support among those in the program. As one inmate noted, "Exercising together builds camaraderie and enhances social support." The exercise sessions also may have helped some participants to improve their self-discipline: "Instruction on how to exercise, as well as the exercise sessions helped me with self-discipline."

Healthy Lifestyle Adoption and Relapse Prevention

The relationship between health-related lifestyle modification and reduced substance use and relapse prevention has only begun to be investigated among the general population of substance dependent individuals (T.J. Murphy et al., 1986). The efficacy of such approaches among substance dependent offenders is almost completely unknown (Walters et al., 1992). However, it is commonly hypothesized that successful lifestyle alterations may promote relapse prevention by providing dependent individuals with enhanced self-control and coping strategies to meet stressful situations and provide positive alternatives to substance use.

Throughout the course of this study, the adoption of healthy lifestyle behaviors was strongly encouraged, and inmates were generally successful in adopting healthy behaviors, at least in the short term. For example, focus group comments at exit from the program included the following statements: "I have started a regular exercise program." "Exercising in groups helped me to be more motivated to exercise. It gave me more initiative than I would have had if I had to do it on my own only." "Many inmates now exercise on their own." Emphasis on mandatory participation was also important at the beginning of the program because none of the inmates had been previously exposed to a health promotion program.

The positive changes in health may have helped to build a stronger foundation for relapse prevention. This was indicated by comments such as, "Because I feel better about myself, I am less likely to relapse." "Now we know that there are other alternatives to drugs than can be used to deal with stress." "Exercise helps me feel better about myself. It has given me goals that I can work towards, so that I will be less likely to use drugs." These comments provide preliminary evidence that drug treatment programs that utilize health promotion programming may complement and reinforce programs that make use of cognitive and psychotherapeutic models exclusively (Ross & Fabiano, 1985).

However, with that came a warning from one respondent. "Some inmates seemed to place more of an emphasis on the wellness component of the program rather than other aspects of the recovery process. It appears that the issue of balance should be stressed more. That is, to stress the idea that by just changing the outside does not mean that the inside (inner person) will change." This point is well taken. In that it is perhaps easier to address the physical aspects of health (because they are more tangible and measurable), some may center their efforts on the physical to the detriment of the psychological and emotional. It is important to address health promotion issues from a physical aspect; however, it must be done in conjunction with the psychological and emotional. Emphasis must be placed on all aspects of health in recovery. As one inmate stated, "The activities and wellness classes provided are needed *with* the support groups of the drug program."

DISCUSSION

This report holds promise that the integration of health promotion programs with traditional components of the therapeutic community approach to drug treatment in prisons may contribute to the enhancement of the physiological and psychological well-being of substance dependent offenders. In turn, this may increase the probability that individuals will maintain successful relapse prevention efforts after release and substantially reduce the likelihood of recidivism with respect to drug-related offenses. The successful maintenance of health promotion programs may also reduce morbidity and premature mortality in this population.

The inclusion of a health promotion component in a drug rehabilitation program permitted inmates to address the physical problems associated with abuse.

It also provided them with concrete ways of addressing health issues that are traditionally abstract in the arena of psychology. Physical health issues may be easier to identify and confront in the dependent individual's mind and may also be the first stepping stone to dealing with the weightier psychological and emotional issues that are associated with substance dependence.

*Michael Peterson, EdD**
Bryan M. Johnstone, PhD†
*Department of Health and Physical Education
State University of New York at Oswego
†Department of Behavioral Science
College of Medicine
University of Kentucky, Lexington

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