Involvement in Leisure Activities by Mental Health Center Clients and Non-Clients

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ININVOLVEMENT IN LEISURE ACTIVITIES BY
MENTAL HEALTH CENTER CLIENTS AND NON-CLIENTS

BY

DAVID H. ROBY
B.A., State University College at Oswego, 1976

THESIS
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Abstract

A survey on the level and frequency of leisure activity in individuals getting clinical aid was compared with that of individuals not presently contemplating or receiving such help. The subjects, 26 females and 24 males in each group, responded to a questionnaire which requested information regarding demographics, and the rate (days per week), and duration (minutes per day), of participation in selected leisure activities. As was expected, based on Glasser's concept of Positive Addiction, the nonclinical group showed significantly more involvement in activities rated as possible Positive Addictions. No significant difference was found between groups on absolute numbers of leisure activities. The results seem to support a basic idea of Positive Addiction, that commitment to one or more activities is more important in gaining mental strength, than is diversity of interests. Alternate explanations of the results were presented, in light of possible demographic confounds.
Acknowledgement

To Candy, without whose love, patience, and common sense this would not have been accomplished.

And to David Allen, may you find this as interesting to read as I found it to write.
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Introduction

Positive Addiction – The Concept

Dr. William Glasser (1976) has in the past few years developed a new concept, Positive Addiction. This concept states that a person may become addicted to a behavior, such as jogging or meditating, which is constructive and beneficial for the body and character. "I call them positive addictions because they strengthen us and make our lives more satisfying" (p. 2). A major aspect of this concept is the strength a participant gains. "With this strength, they (positive addicts) live with more confidence, more creativity, and more happiness, and usually in much better health" (p. 2).

The presence of strength. Strength is defined in Webster's Third New International Dictionary (1971) as the "power residing in a thing as a result of qualities or properties (as health, or soundness in bodily condition) that enables it to exert force or manifest great energy as in resistance, attack, or endurance" (p. 1779). Glasser has pointed to some of these properties or characteristics, i.e. creativity, confidence, and several others. "They exercise an option...to be patient, to wait, to stand pain and frustration for as long as it takes, because they are confident that they will eventually be able to figure some way out of their difficulty" (p. 2). "They are able to create options in situations where none seem to exist" (p. 62). "They (positive addicts) also have a virtually
inexhaustable supply of options in their imaginations which come into play and sustain them when satisfactory behavior in the real world becomes impossible" (p. 64). "They have implicit faith in the power of their brains" (p. 64). These characteristics - creativity, confidence, imagination, patience, perseverance, adaptability, self-sufficiency, and an implied internal locus of control are the facets of strength that a positive addiction would influence. The following section will look at what happens when a person does not have the characteristics mentioned above.

The lack of strength. Glasser discusses the lack of strength or "What happens if you don't have the strength to begin to deal with the pain adequately?" (p. 7). The pain of which he speaks comes from not having love or a sense of accomplishment. Both, "loving and being loved, and...doing something one believes is worthwhile" (p. 3), require strength. Most people have an idea of what could make them happy, and usually they also have some idea of how to do it. What is usually lacking, is the strength to get it done. As discussed earlier, this means being persistent, patient, creative, etc., when these are needed to obtain that which we desire.

Without sufficient strength, people are forced to choose giving up or settling for less. This has the short-term effect of being less painful. Giving up also means choosing misery rather than a chance for happiness, misery which continues after the choice is made. In other words, it is less painful to settle for less or give up on what we want rather than to keep trying for it. Unfortunately, the pain of knowing we have given up can collect from choice to
choice and the accumulated pain of failure soon necessitates another
decision.

Eventually, giving up doesn't reduce the pain any more and
the decision is made to reduce the pain by choosing one of four
symptom categories. These categories include: acting-out - crime,
delinquence, tantrums; becoming involved in your own emotions -
depression, phobias, anxiety, hysterics; becoming crazy - paranoid,
psychotic, hallucinating; and psychosomatics - headaches, backaches,
migraine, ulcers, hypertension. This is not a conscious choice;
the awareness doesn't exist to see it as a decision. Being sick
allows a person not to face their giving up or lack of strength.
The first choice involved giving up responsibility, but the second
allows a person to turn to others for help. Who can ask a depressed
person to do much? In addition to reducing the pain, choosing a
symptom substitutes the symptom for the love and worth that seemed
unobtainable in the first place. Instead of trying for these, a
person gets involved in their symptom and seeks to have it fulfilled,
usually by someone other than themselves. Attention-getting games
and rejection-games often become the focus, rather than working
toward love and worth.

Most everyone suffers from both of these decisions, giving up
or symptoms, at one time or another. Brief, temporary episodes
occur when we are frustrated or rejected. The difference between
those who have strength and those who do not is that without
strength, the latter continue to stay with these choices, while
stronger people return their attention to getting love and worth.
When the pain of failure becomes severe, a third choice exists—negative addiction. This provides both the complete release from pain and an intensely pleasurable experience. This pleasurable experience may be just the relief from the pain of failure. Glasser believes "The addiction...provides him with an intense pleasure over and above the satisfaction of finally getting rid of the pain" (p. 29). Two drugs provide the combination of relief and pleasure—alcohol and heroin. Other addictions exist with less potency to relieve pain and provide pleasure. These include food, gambling, working, nicotine and caffeine. While many besides addicts may enjoy these things, most people are strong enough to avoid the danger of addiction.

Once addicted, little motivation exists to get love or worth. The addiction satisfies and as long as a regular supply continues, no need at present to try for something more tenous. Additionally, there now exists withdrawal pain, mental and physical. This pain, and the pleasure when the addiction is fulfilled, in effect lock the addict to his habit. To stop means a return to both the pain of failure, and pain of withdrawal. Only the infusion of a lot of love and worth could help at this point. Since, however, it wasn't obtainable before, it is less likely to be obtained when the pain is more severe. Successful anti-addiction organizations can help by providing opportunities for more love and worth. This ties the addict to the group however, and gives only a rare few the strength to make it on their own. Most only live with the choice of whether or not to go back to their addiction. Glasser contends that there
is a way to gain enough strength to cope with the struggle for love and worth, positive addictions. Through a positive addiction (PA) anyone can gain strength.

While the basic idea of personality change through involvement in activities has been put forth by others (Kostrubala, 1976; Henderson, 1976), Glasser has been the first to attempt to define and explain how this comes about.

How to get strength. According to Glasser (1976), in order for an individual to optimally attain a PA, participation in some activity must fulfill the following:

1. It is noncompetitive; a person chooses to do it for himself or herself and does it for about an hour a day, every day.

2. It is possible to do it easily, without a lot of mental effort.

3. It does not need the involvement of others. A person does it mainly by himself or herself.

4. It is believed to have some value—mental, physical, or spiritual.

5. If persevered, subjective improvement occurs.

6. It must be able to be done without self-criticism. Doing it alone is stressed, since companionship may lead to comparisons, self-criticism, or both. "The key to the whole process of gaining mental strength through positive addiction is self-acceptance to the point where you are able to leave your brain alone long enough to experience the PA state" (p. 80).

This state involves letting the mind "spin free" in whatever
activity a person is in, a transcendental state. "Almost everyone describes it as extremely pleasurable, very relaxing; and although they find it difficult to put what they experience into words, all of them agree that they reach it, whatever it is, and that it feels very, very good" (p. 47). The two most popular ways of doing this are jogging and meditating. These easily fulfill the criteria listed and allow the quickest access to the PA state of mind.

PA research. In order to obtain data on PA's in joggers and runners, Glasser had a questionnaire published in the October, 1974, issue of Runners World. From the 20,000 plus readers of the magazine, he received almost 700 replies. Out of these, Glasser found that 75% of those who had been running regularly (for about an hour each day, six days a week, for over a year) reported strong symptoms of a PA. This was based on two of the most emphatically answered questions; withdrawal discomfort and enjoyment of each run. Those people considered addicted reported the most discomfort when a run was missed, and enjoyed most every run.

In a similar manner, Glasser also reported on 700 meditators who responded to his questionnaire. Only 40% of the meditators mentioned any kind of withdrawal pain. From this low finding, Glasser inferred that low percentage of meditators experienced the PA state of mind. Indeed, only 75 out of the 700 reported PA experiences with any consistency. It was noted that 80% of those who practiced as instructed by their teachers, experienced flashes of the PA state on a regular basis. While these findings would provide good support for his concept, Glasser's generalistic reporting
style, lack of supportive data (i.e. age, sex, numbers considered addicted or non-addicted, etc.), lack of controls, and casual conclusions based on a correlational study leave room for scepticism.

Other research, that can be more critically evaluated, has shown support for the PA concept and the idea of increased mental strength from involvement in exercise. For example, Carmack and Martins (1979) questioned 315 runners (250 male and 65 female) about their attitudes, mental states when running, and perceived outcomes of running. While 214 of these runners were training or under what might be considered competitive situations, the majority indicated the necessary lack of self-criticism. Subjects were asked to complete a five-part questionnaire designed to measure various aspects of the running experience. The parts of the questionnaire included demographics, items from Glasser's questionnaire, subjects' state of mind during a run, subjects' feelings about running, and benefits or outcomes attributed to running. Subject response to their feelings about running was considered to measure their Commitment to Running (CR); Commitment to Running was a term selected by the researchers in preference to positive addiction. A CR scale was designed to examine the relationships between the CR score and other aspects of a run, e.g. average length of a run, discomfort experienced when a run was missed. Positive relationships were found between these factors and a CR. In other words, the findings supported the concept of positive addiction and changes in the mental state during a run. Both the pleasurable experience
described earlier and the "pain of withdrawal" were noted. The former was positively related to the time spent running; the longer time (over 40 minutes), the more likely the experience of the pleasurable feeling. Likewise, the withdrawal aspect of addiction, guilt, irritability, sluggishness, and a sense of letting the self down, was also positively related to the length of time spent running. The "spin-out" or PA experience was most often reported by more experienced runners, who also perceived that they derived more benefits from running than the less experienced runners (less than the mean 5.4 years, at 5 days a week, 40 or more minutes per day). This last point should be viewed with some reserve though, since the researchers failed to indicate the number in, or any demographic data, regarding the subgroups examined for perceived benefits. Additionally, there was no control group included for comparison.

Due to Glasser's theory being so recent, this is the only study which attempted measurement of the PA state of mind and benefits derived from attaining it. Studies do exist that examine changes in personality of those involved in exercise or meditation. Since these were completed prior to Glasser's developing the PA concept, they do not include data on, nor examine their subjects, based on the six criteria set forth by Glasser. They do, however, lend support to an idea that is basic to the PA concept. That is, that strength as measured in personality characteristics, can increase as a result of participating in regular exercise or meditation. In other words, just as someone who exercises his body gets physically
stronger, in such ways as increased endurance, flexibility, or agility, so it has been shown that mental strength improves by increased imagination, emotional stability, self-sufficiency, and other characteristics. A review of pertinent research on the effects of running or meditation on personality, will provide the support for this idea.

The Effects of Exercise and Meditation on Personality

From the earliest of recorded times, man has intuitively believed in a relationship between physical conditioning and health, and mental health. Sayings such as "healthy mind--healthy body" have been followed and prescribed without consideration for what transpired or how this relationship might have its effects. More recently, empirical research has begun to probe the mind-body relationship, and the parameters of it.

Changes in personality in the normal adult population from exercise. The following section reviews eight articles that look at changes in the personality of normal adults from participation in exercise programs. All were empirical in design, and with the exception of Sharp and Reilley (1975), have in common the use of the Cattell 16 Personality Factor Questionnaire (16PF).

The Cattell 16PF is a test based on fundamental concepts in human personality structure. Questionnaire items measure behavioral tendencies or traits. These traits were correlated by Cattell (1973) into three higher "strata" or layers. The higher the strata, the more general the set of traits included with it. By use of correlation and factor analysis, Cattell has established two highest
order influences - strength (of the nervous system) and self-criticism. These seem to reflect the basic effectiveness of the biological organism on the one hand, and society's impact on the organism on the other. Some of the general set of traits included under strength are: adaptability, enthusiasm, outgoingness, mental alertness, and ego-strength. These are similar to the characteristics mentioned by Glasser (1976) as influenced by a positive addiction.

The 16PF is considered to measure more of the functional aspects of personality. Thus it differs from personality inventories, such as the Minnesota Multiphasic Personality Inventory, which aim at more clinical application. Unlike the MMPI, the 16PF does not have a built-in protection against lying and it must be assumed that the answers are the honest expressions of the subject. The 16PF has been validated among all adult age groups and a review of reliability estimates has found reliability to vary from .61 to .91 (Cattell, Eber, & Tatsouka, 1970).

Tillman (1965) looked at differences in personality based on differences in physical fitness levels for high school males. All subjects were given a physical fitness test consisting of two items from the AAHPER Youth Fitness Test. Based on the results of these measures, two groups were formed. These groups reflected the upper 15% and lower 15% of the fitness test results. The two groups were administered the A - S Reaction Study of Allport, the 16PF, and the Kuder Preference Record - Form C, as personality measures. Comparisons of the two groups showed significant differences in personality
variables. The group ranked in the upper 15% was found to be more dominant, extroverted, and more socially oriented. They were more interested in people and group interaction. The group ranked in the lower 15% of physical fitness appeared more tense and had a tendency to like accuracy and precision in their actions.

Following the personality tests, the less fit group was divided into two groups. An experimental group (n = 26) participated in a nine-month strenuous physical fitness program. This program was administered by the author, and "in lieu of their regular physical education class" (Tillman, 1965, p. 485). No further description was given of the fitness program, nor any data on attendance or drop-out rates. The control group (n = 24) participated in their regular physical education class. Again, no description of the class was given. At the end of the nine-month program all tests were readministered. The experimental group improved significantly on the physical fitness measures; they were also significantly more fit than the control group. They did not, however, become as fit as the upper 15% group of the initial measurement. The personality measures found only one item to be significantly different. The experimental group was found to be less interested in accuracy and precision (clerical interest) than the control group. The author concluded that perhaps a greater change in physical fitness would also show a greater change in personality characteristics.

Hammer and Wilmore (1973) attempted to find correlates of
alterations in physiology, and personality traits. They designed a ten-week jogging program for their 53 subjects (average age 45 years). In reporting their findings, however, they failed to specify the parameters of the jogging program, i.e. time, distance, instructions to subjects, etc. At the beginning and end of the training program all subjects were given a work capacity test; exercise electrocardiograms, and measured for oxygen consumption as an indication of physical fitness. At the end of the program, all subjects were administered the 16 PF and Taylor Manifest Anxiety Scale (TMAS). Two groups were formed based on fitness measures taken at the end of the program. The results of the psychological measures for each group were compared to the norms for the tests. The results for the two groups were also compared to each other. Relative to the norms, the Hi-fit group (n = 9) was significantly less anxious (TMAS), and highly intelligent, significantly more dominant, imaginative, and self-sufficient, while significantly less trusting and sociable than the norms. When the two groups were compared, the Hi-fit group was seen to be significantly more natural, sensitive, and had a greater lack of sophistication than the Lo-fit group. The Lo-fit group was more competitive than was the Hi-fit group. Considering the lack of pre-testing, subject description, program description, and a recognized lack of control, "Chance in relation to the N may be a factor in the findings" (Hammer & Wilmore, 1973, p. 238), the results are questionable.

In 1975, Buccola and Stone looked at the effects of jogging
and cycling programs on personality variables in aged men. The personality measures were made with the 16PF prior to the programs and then following training. The 36 volunteers (60 - 79 years) were screened prior to commencement of training by medical release and electrocardiogram. None of the subjects had participated in any regular exercise program for at least two months prior to the pre-test. Two groups were formed; twenty subjects chose to participate in the cycling program, the other 16 in the walk-jog program. There was no significant differences in ages of the participants in the two groups. In addition to the psychological variables tested, selected physiological measures were taken before and after the exercise programs. These measures included weight, estimated max VO₂, vital capacity, respiratory rate, reaction time, trunk flexibility, resting heart rate, systolic and diastolic blood pressure, pulse pressure, and skinfolds to determine the percentage of body fat. Over a fourteen-week training period, the subjects participated in thrice weekly sessions lasting 25 -30 minutes each day. The results indicated significant decreases in blood pressure and weight for both groups; both increased in max VO₂. Joggers increased their flexibility and cyclists had a significant decrease in the percentage of body fat. No personality factors were found to be changed in the cyclists, following the program. The walk-joggers, however, became less surgent (serious) and more self-sufficient. Comparisons of the two groups showed differences only in the psychological measures. "The cyclists were more tough-minded and surgent
than the joggers" (Buccola & Stone, 1975, p. 134). While the authors may be correct, for their groups, that exercise affects few personality changes, both the lack of a control group and the short-term nature of their program raises some scepticism about their conclusions. Without the inclusion of a control group, one of the factors, surgency, could have been wrongly assumed to have been effected by the program. Cattell et al. (1970) have indicated this to be one of several factors susceptible to fluctuation over a period of months. As also will be discussed, length of training programs is a primary factor in obtaining psychological change from exercise.

Sharp and Reilley (1975) studied the relationship between aerobic physical fitness and selected personality traits as measured on the MMPI. Sixty-five male college students, ages 18 to 23, participated in an aerobic conditioning class. The class met twice a week for 45 minutes each day. While no definite length of treatment was reported, the fact that it was a college class lends an estimate of 10 to 15 weeks for the duration of the class. In addition to the validity and clinical scale scores obtained from the MMPI, three special scale scores were procured, anxiety, ego-strength, and repression. Five measures of fitness were administered before and after the class, as was the MMPI. No controls were tested on either the physical or psychological measures. Positive correlation was found between aerobic fitness and a healthy self regard and ego-strength. Negative correlations were found to exist between anxiety, depression, hysteria,
paranoia, psychasthenia, schizophrenia, social introversion, hypochondriasis, and deviant responses, and fitness. In comparing pre- and post-test scores on the MMPI, it was found that those who began the class in better physical condition gained little in physical fitness, but changed the most psychologically. The converse was found to be true also; subjects who started the class with the lowest scores on aerobic tests "gained the least psychologically, but the most physically" (Sharp & Reilley, 1975, p. 429). These findings seem to imply that some measure of physical fitness must be obtained prior to psychological change occurring. In order for this to occur, it could be concluded as Young and Ismail (1976) have: "It would seem reasonable to speculate that a considerably longer and intensified period of regular or habitual exercise is necessary to cause dramatic change in personality parameters" (p. 518).

The relationship between personality and exercise has been intensely studied by Ismail, in conjunction with other researchers (Ismail & Young, 1976; Ismail & Young, 1977; Ismail & Tractman, 1973; Young & Ismail, 1976). These studies have shown clear and strong relationships exist between physical activity and alterations in personality. Several years of observing subjects participate in four-month exercise programs showed "unsurprising consistent tendencies toward improvement in terms of widely accepted physical fitness standards" (Ismail & Tractman, 1973, p. 79). Over these same years, subjective changes were noted in personality characteristics. "Their whole
demeanor seemed to us to be more even, stable, and self-confident" (Ismail & Tractman, 1973, p. 79). Observing these changes lead the researchers to design experiments to provide tangible and objective measurement of their participants personality while undergoing physical fitness training.

Ismail and Tractman (1973) studied 28 male volunteers who participated in their four-month long physical fitness program. The program was one and one half hours of physical fitness training, three times each week. During this time, the subjects warmed up by jogging ten minutes, then had group calisthenics for about a half hour. The main part of the program was a progressive, supervised run. This initially covered a quarter mile, but by the end of the program, subjects averaged two to three miles. Subjects were allowed to increase their distance at their own rate; some competition between subjects was reported. The last half hour of training was given to structured exercise such as squash, swimming, volleyball, or basketball. Two groups were formed at the start of the training program based on the following physical fitness criteria: "exercise heart rate, percent of lean body mass, submaximal minute volume of ventilation corrected by lean body mass, maximal oxygen intake corrected by lean body mass, and resting diastolic blood pressure" (Ismail & Tractman, 1973, p. 81). These fitness measures had been used by the researchers in past fitness studies, and were believed to be accurate indicators of physical changes brought about by participation in the fitness programs. Personality
measures were obtained both before and following the program through use of the Cattell 16 Personality Factor Questionnaire. Similar psychological experiences were expected for both the Hi-fit and Lo-fit groups. Thus the researchers hypothesised that any personality change in the Lo-fit group toward becoming more like the Hi-fit group could be attributed to the exercise.

Initial testing showed the Hi-fit group to have significantly higher scores on factors of emotional stability and imagination. Following the exercise program, no difference could be found between groups on the factor of emotional stability. While the Lo-fit group did increase in imagination, they did not achieve as high scores as did the initial scores for the Hi-fit group. The Lo-fit group did change to become higher than the Hi-fit group in self-sufficiency. They also showed an increase in proneness to guilt. Multivariate analysis of the scores reflected an association between self-assurance, imagination, emotional stability, and self-sufficiency, and a high level of physical fitness. Using this association, the authors believe they can correctly deduce a man's fitness group without the aid of any other data such as photographs or demographics. The increase in the Lo-fit group in proneness toward guilt was speculated to have been caused by either their confronting their problem of physical fitness or feeling they may have been getting behind in other work while devoting time to the fitness program. Other conclusions by the researchers include the ideas that with a higher physical fitness, there exists less tendency toward neurotic behavior and an increased
probability toward accident proneness.

Two theories were suggested to try and understand the changes and differences observed in the study. The first centered on physiological causes of change. This attributes all changes to "the physiological and biochemical changes of exercise such as increased circulation to the brain, thus increasing glucose essential to the brain's nutrition" (Ismail & Tractman, 1973, p. 82). The second theory looks at psychological causes such as change due to overcoming a difficult challenge. This could gain the participant a sense of accomplishment, independence, and self-control. Both theories were considered to fulfill necessary roles in the facilitation of personality change from physical activity. It was concluded that the study confirmed an age old belief, "physical activity can change the state of one's mind" (Ismail & Tractman, 1973, p. 82).

Based on the above findings, Ismail and Young (1976) studied the effects of exercise on 56 university faculty and staff. The male volunteers, ranging in age from 30 to 65 years of age, participated in a four-month physical fitness program, as described earlier. The same physical fitness measures as in the 1973 study (Ismail & Tractman, 1973) were used to evaluate the subjects' pre- and post-program. In the first and final weeks of the program the 16 PF was used to obtain the personality measures. The results of the physical and personality measures were analysed to examine the relationship of these factors at different hierarchical levels of the 16 PF. Analysis of the results tended
to support the idea "that lack of physical fitness may be related to emotional instability" (Ismail & Young, 1976, p. 272). Further conclusions were that by participating in a long and intense enough program, one could begin stabilization in the personality.

Young and Ismail (1976) next studied the differences in personality of 28 adult men, before and after a four-month fitness program. The program followed the same regime as described previously. As in their previous study, the same physical fitness measures were taken before and after the fitness program. In addition to the 16 PF, personality measurement included the anxiety scale of the Multiple Affect Adjective Checklist and three scales from the Eysenck Personality Inventory. Of the 58 men who had at least 60% attendance in the program, four groups of seven subjects each were created. These groups were based on age and level of fitness. For both young and old (no further description of age categories included) high-fit group members, the results showed that they were more unconventional, composed, secure, easygoing, emotionally stable, adventurous, and higher on crystallized intelligence than the combined low-fit group. These findings held true for both pre- and post-testing. The young group was seen to be more extroverted and outgoing than the older group. The high-fit young group showed more dominance and aggressiveness than the high-fit old group. Participation in the program seemed to increase a prevalence for the low-fit young group to be higher in super-ego strength than the
low-fit old group. The results also showed the hi-fit group became more self-sufficient after the program. All subjects post-tested as more socially precise, persistent, and controlled. Emotional stability and security were the most pronounced personality differences between the hi-fit and low-fit individuals. The conclusions of the researchers included the idea that the lack of dramatic change in the low-fit group could be attributed to the short length of the training program and assessment period. Low-fit subjects were considered to be in deteriorated physical condition from years of neglect of their fitness, and it would probably take a long and intense period of exercise to facilitate marked change in their personalities. The authors further speculated that "such a change would be the result of a significant alteration in body chemistry, since physiological, biochemical, and personality domains are inextricably interrelated" (Young & Ismail, 1976, p. 518).

Prompted by these findings, Ismail and Young (1977) went on to study 58 male volunteers in a four-month physical fitness program. The subjects, selected from 90 university faculty and staff and local businessmen, ranged in age from 21 to 61 years. The format for the fitness program was identical to the programs run in previous studies by the authors. In addition to the physical fitness measures previously mentioned, pre- and post-data were collected on serum cholesterol, serum glucose, serum testosterone, and free catecholamines (epinephrine and norepinephrine). Personality data was collected by means of the Cattell 16PF Questionnaire,
the Eysenck Personality Inventory, and the Anxiety Scale from the Multiple Affect Adjective Checklist. Since the authors were examining the relationship between biochemical alterations and personality characteristics, no data was reported on pre- to post-test changes in the personality measures; there was also a noticeable lack of a control group. The findings indicated that significant beneficial physiological changes occurred in the subjects. Relationships were established between selected biochemicals and personality characteristics. Changes in these relationships were considered to be the result of participation in the exercise program. Initial high levels of serum testosterone and glucose were seen to be related to neurotic and aggressive tendencies. Pre-test measures linked high levels of cholesterol and glucose with self-indulgence and low-superego strength. Post-test results found high levels of cholesterol to be related to cataneuroticism and tension. As in past conclusions, the researchers saw the lack of marked change in biochemical variables or personality characteristics as affected by the length of the fitness program. The subtle changes noted in the relationship between biochemical and personality variables lead to speculation that a longer and more intense period of exercise would produce the necessary changes in body chemistry and personality.

This section will summarize findings on changes in personality from exercise. While the studies reviewed do show definite support for the existence of personality differences between physically fit and unfit persons, the research on change in personality from
exercise is not as conclusive. General tendencies were shown to exist between exercise and beneficial improvement in personality characteristics. These tendencies have been speculated to be the result of biochemical changes due possibly to exercise.

Specifically, the differences between fit and unfit individuals include the following: physically fit individuals were seen as emotionally stable, secure, socially oriented, dominant, extroverted, and natural. Physically unfit people were shown to be tense, socially withdrawn, overconcerned with their physical state, and somewhat emotionally unstable. Through participation in exercise programs, low-fit subjects showed increased emotional stability, self-sufficiency, and imagination. The lack of major personality change, was considered to be the result of the time limitations on the fitness programs.

In fact, the longest program was four months in length. It was generally concluded that longer and more intensified programs of regular exercise would show a dramatic change in subjects' personalities. This conclusion concurs with one of the fundamental aspects of positive addition, "The key is to persist" (Glasser, 1976, p. 140). This persistence translates to the inclusion of a positive addiction in a person's life. In operational terms, this means doing an activity such as jogging nearly every day, for about an hour each day. Such a commitment would then provide the beneficial changes that research has shown begins in as little as four months.
Changes in personality in the normal adult population from meditation. Glasser also examined data on the PA experience of meditators (see p. 6-7 above), which seemed to provide support for his concept. Meditation was seen as fitting the PA criteria and a potential method for achieving a PA.

The following section reviews three articles that examine the effect of meditation on personality. All were empirical in design, and used psychological measures with proven validity and reliability.

Seeman, Nidich, and Banta (1972) examined the effect of transcendental meditation on self-actualization as measured by Shostrum's Personal Orientation Inventory (POI). Eight male and seven female subjects participated in a two-month study. All were university undergraduates; no information was provided as to their backgrounds in meditation. Likewise, the ten male and ten female control subjects were not described in other aspects such as age or past meditation experience. The POI was administered to both groups two days before treatment began, and then two months later. The experimental group received individual instruction for the first four days of treatment, then were told to practice meditating twice daily for 15 to 20 minutes. No check on fidelity to these instructions was indicated. No significant difference was found between groups at the first administration of the POI. The findings after treatment indicated "The practice of transcendental meditation for a two-month period had a salutary influence on a subject's psychological state as measured by the
POI" (Seeman, et al., 1972, p. 185). Six of the twelve variables on the test were significantly different for the meditators. The experimental group was found to be more spontaneous in expression of feelings, accepting of aggression, and had more capacity for intimate contact. Additionally, the meditators were seen as more inner-directed and having a greater self regard. No significant changes occurred in the control group from pre- to post-test. The researchers speculated that the greater inner-directedness of the meditators would possibly be detected as a change in locus of control. This change means that the experimental group went from believing that others determined reinforcing events in their lives to being guided more by their own "psychic gyroscope" (Shostrum, 1966), i.e. believing one controls their own future. It was suggested this aspect be tested on Rotter's Locus of Control Scale.

Prompted by this suggestion, Hjelle (1974) compared 15 experienced meditators and 21 novice meditators. The subjects were administered Bendig's Anxiety Scale, Rotter's Locus of Control Scale, and Shostrum's POI. The author used the method of criterion groups to avoid the possible pitfall he saw in the study by Seeman et al. (1972). That was, that the experimental group may have expected personality change to occur, and confounded the results. The experienced meditators, seven males and eight females, had been practicing meditation at an average of 22.63 months when the psychological measures were administered for the first time. The novices, 11 males, and 10 females, were given the tests one week prior to receiving instruction in meditation.
All subjects were members of the Students International Meditation Society, and thus would or had received similar instruction. The results "substantially support the hypothesis that a group of individuals having practiced transcendental meditation are markedly higher on measures regarded as indicative of psychological health than a comparable group of individuals about to be meditating" (Hjelle, 1974, p. 626). Experienced meditators were found to have a significantly greater internal locus of control, less physical and mental tension, and were significantly higher on 7 of the 12 subscales of the POI. This last finding was concluded to show that experienced meditators were more self-actualized. Speculation was made as to the beneficial application of meditation in coping with vocational, social, or personal problems. The commitment to the user was seen as minimally affecting time consumption or lifestyle while providing healthful change.

Dreher (1974) looked at the effects of Hatha Yoga and Judo on the personality and self-concept of college students. All experimental subjects were enrolled in beginning classes of the two disciplines. Sixteen males and 28 females enrolled in the Hatha Yoga course, while 19 males and 9 females were enrolled in Judo. A control group of 29 males and 27 females were selected at random from other university students not enrolled in these two courses. No indication was given, however, as to the control subjects' prior participation in either discipline, nor was there any check on either groups prior involvement in other meditative courses. During the first week of class and then during the final
week of the quarter, all subjects were administered Cattell's 16 Personality Factor Questionnaire, and the Tennessee Self-Concept Scale (TSCS). Additional information was collected by interview on the perceived effect of participation in the classes. No significant difference was found between females on either psychological measure on the pre-test. The experimental males were found to be more tender-minded and conscientious than the controls on the pre-test. TSCS scores indicated the male Hatha Yoga students to have a greater moral-ethical and family orientation than either of the two other male groups. No significant difference was found between the male groups on post-tests. Female participants in classes tested as more assertive and emotionally stable than the controls on the post-test. No difference in self-concept was seen between female groups on post-testing. Despite the results of the tests, both male and female participants in the Hatha Yoga course were of the opinion that their personalities and self-concept had changed as a result of participation. The Judo students held an opposite opinion; they believed no change had occurred.

Conclusions were made that change had occurred as a result of participation in the classes. Males, who tended to be somewhat different from the general population, had reduced these differences. The female participants began the classes being somewhat timid and shy; they developed more stable and assertive personalities as the class progressed. In reflecting back to Glasser's criteria (see p. 5 above) for attaining a positive addiction, the
belief that participation has some value was supported by the results of the interviews.

In summary, the studies reviewed on changes in personality from meditation, provide evidence for the existence of differences in personality between participants of meditation and non-participants. Meditators were described as more spontaneous, accepting of aggression, and having an internal locus of control. The belief that they control their own future may also help to explain their lower mental and physical tension levels. Based on these studies, it is not conclusive that these differences are the result of meditating. A relationship exists between meditating and personality change, but the causality is not definite. It would seem appropriate for research to be done in a longitudinal method to examine the personalities of those who meditate and those who do not participate in any activity that could be considered a positive addiction.

Summary. While the participants of the studies reviewed may not be totally representative of the general population, the findings can be considered generally applicable. Basically, a relationship has been established between participation in exercise or meditation and personality change. The studies reviewed indicate that emotional stability, self-sufficiency, confidence, imagination, a greater feeling of control over one's life, and increased spontaneity are the characteristics effected by exercise or meditation. When considered from the point of positive addiction, it could be said that beneficial changes in these
characteristics would help to make a participant stronger or better able to attain that which they desire. The required degree of change or the parameters of participation are not clearly defined as yet. There does exist, however, a definite difference in personality between those who are physically fit and those who have neglected their physical, as well as perhaps, their mental fitness. The personality differences seem to provide support for Glasser's depiction of those who have strength and those who do not. There exists in this an unstated assumption, however, that those who lack strength are not participating in activities that could provide a positive addiction experience.

The Problem

In considering Glasser's description of those who lack strength and seek help with their problems, it seems he includes those who use a mental health center (Glasser, 1976). Glasser lists possible symptoms of a lack of strength, which include such complaints as depression, anxiety, somatic problems, etc. These are usually among the primary complaints seen at a mental health center.

Further, in considering Glasser's description of those who lack strength, it seems an unstated assumption exists; these people are not participating in an activity which could provide beneficial personality change, i.e. a positive addiction. If they were participating, they would be gaining the strength to attain what they desire. By virtue of their use of an outpatient facility, it would seem that they should have different levels of
activity from those who do not use a mental health center.

This study attempted to test the assumption that users of a mental health center were not participating in PA level activities to the same degree as individuals who had never sought therapy (nonusers). To do so, this study examined the activity levels of those receiving clinical aid and those with no prior history of such help and who at present are not considering it. An adaptation of the Leisure Activities Blank (LAB), developed by Dr. B. McKechnie (1973) served to measure the extent of subject participation. Originally developed to measure the past and future preferences for leisure activities, the LAB consists of 121 of the most popular American activities. Adaptations were made to the questionnaire to allow the activities measured to more fully approximate Glasser's PA criteria. The revised questionnaire measured the Rate (days per week), and Duration (minutes per day), of subject participation. This measurement fulfilled the time criteria of a positive addiction. It is beyond the scope of this study to measure the degree of self-criticism or subjective improvement.

It was expected that the nonusers of mental health centers would show significantly more activities that could provide a PA experience. It was also expected that the nonusers would show a significantly greater variety in the absolute numbers of activities. This higher frequency could be the result of having more strength, or the experiencing of more frequent PA 'spin out' in greater numbers of activities.
Method

Subjects

Over approximately one year, 50 usable questionnaires were gathered from the clinical settings. Usable was defined as: complete demographic data (except occupation which was discarded due to lack of response); correctly completed data on the activity blanks. These 50 questionnaires were matched on as many demographic variables as possible to 50 nonclinical questionnaires. The 50 nonclinical questionnaires were selected from 120 usable questionnaires gathered from nonclinical settings. Matching was done by comparing subjects on the following demographics in order of importance: sex, age, race, marital status, education level, and income.

The Clinical group (C) consisted of 26 female and 24 male clients from the Northeast Orange and Beth Johnson Community Mental Health Centers. The females ranged in age from 20-59 years (M = 31.9); the males 19-58 (M = 30.5). Other demographics collected for this group showed the following. The females included twenty-five Caucasians, and one Hispanic; the males, twenty-one Caucasians, two Black, and one Hispanic. Female marital status showed 11 single, 9 married, 4 divorced, and 2 widowed; male marital status showed 16 single, 4 married, and 4 divorced subjects. Education levels for the C group showed that 10 females and 13 males had some college. Table 1 reflects the
Table 1

Number of Subjects by Education Level

<table>
<thead>
<tr>
<th>Sex</th>
<th>n</th>
<th>College</th>
<th>High school</th>
<th>Below high school</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonclinical</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>24</td>
<td>24</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Females</td>
<td>26</td>
<td>26</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Clinical</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>24</td>
<td>13</td>
<td>4</td>
<td>7&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Females</td>
<td>26</td>
<td>10</td>
<td>13</td>
<td>3&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

<sup>a</sup> one subject below ninth grade.
complete breakdown of education levels for both the Clinical and Nonclinical groups. In Table 2 the frequency of subjects by income level for both groups is shown.

Religious preference among both groups was highly diverse and varied; this demographic was discarded for further analysis. No attempt was made to ascertain the diagnosis of the Clinical subjects. This factor was omitted to increase the anonymity of subjects, since names and clinic records would have been involved in obtaining the diagnosis.

The Nonclinical group (NC) included 26 female and 24 male volunteers who indicated that they were not presently considering clinical aid, nor had they been in therapy in the past. These subjects were recruited from the following settings: the University of Central Florida, employees from the above mentioned mental health centers, and employees of the Naval Training Center in Orlando. The age ranges for the NC subjects were: female 20-50 \((M = 29.5)\), and male 20-52 \((M = 28.2)\). Racial consistency showed twenty-five Caucasians and one Black female, twenty-three Caucasians and one Black male. The marital status for the NC group showed females included fourteen single, nine married, one divorced, and two widowed; the males included fourteen single, eight married, and two divorced. Education levels for the NC group are shown in Table 1; income level is shown in Table 2 (levels were set by the experimenter to reflect $6000 graduations).

Materials

The leisure activity questionnaire consisted of four pages. The
Table 2

Number of Subjects by Income Level

<table>
<thead>
<tr>
<th>Income Level</th>
<th>Nonclinical</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Males</td>
<td>0-6</td>
<td>6-12</td>
<td>12-18</td>
<td>18-24</td>
</tr>
<tr>
<td>Nonclinical</td>
<td>12</td>
<td>6</td>
<td>5</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Males</td>
<td>7</td>
<td>14</td>
<td>3</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Clinical</td>
<td>11</td>
<td>9</td>
<td>3</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Males</td>
<td>17</td>
<td>6</td>
<td>2</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

\(^a\) thousands of dollars.
cover sheet (Appendix A) informed the subject of the nature of the questionnaire and the need to keep it anonymous. The second page requested demographic data about the subject; age, sex, race, etc. This was obtained to match the groups as closely as possible on as many factors as possible. Clinical history and intention was part of the information requested (see Appendix B). This information provided the differentiation between groups. The NC subjects used in the study were selected as those indicating no prior history of therapy, and no present intention of seeking therapy. The Clinical group was selected from any clinical client with some indicated history of therapy and/or intention to seek therapy. This factor was thought to clearly define the two groups as one not now or ever having requested therapeutic aid and one group who has or is in the process of seeking such help.

The third page of the questionnaire presented a list of leisure activities to the subject (see Appendix C). The request was made that the subject indicate his Rate (days per week), and Duration (minutes per day), of participation in the activities listed. Only those activities participated in over the past six months were requested to be filled in. If an activity was not participated in, the space could be left blank. An example was provided to help clarify the requested information.

The final page allowed space for subjects to indicate other activities they had participated in over the past six months (see Appendix D). The same formula, rate and duration, was requested to indicate the level of participation.
The leisure activity questionnaire represented a modification of the LAB in order to more closely approximate the activities to the six criteria set forth by Glasser (1976). Changes included deletion of items considered too oriented towards group activity, eg. chess, and activities rated as possible negative addictions, eg. social drinking. The remaining items focused on physical exercise and meditative activity, since these were the most frequently associated activities to a positive addiction. Several items were added to the list, eg. meditation, praying, bathing, based on the report by Glasser of a positive addiction to them.

Both typed (see Appendix E) and verbal instructions were given to the administrators of the questionnaires. In order to help the administrators in their facilitation of subject participation in the study, the questionnaire was reviewed and discussed prior to their administering it.

A release of information form was not included in the questionnaire packet since it was considered anonymous. Additionally, a release is required by the mental health centers prior to use of the centers. The anonymity of the packet (see Appendixes A,B, C,D) and use of the centers forms (see Appendixes F,G) were considered sufficient.

Procedure

Copies of the packet were distributed by the experimenter to each of the participating mental health centers. Each center was initially given 50 copies of the packet and were provided with
additional copies as needed. All subjects were advised of the elective nature of their participation. The counselors were instructed (see Appendix E) to have the clients read the cover sheet, fill-in the demographic data, and complete the activity sheet. Completed packets were placed in an envelope for collection by the experimenter once each week.

Copies of the questionnaire packet were distributed at the aforementioned settings for the NC subjects. Instructions were given (see Appendix E) to the administrators (teachers, supervisors, and employers) to have the subjects read over the cover sheet, fill-in the demographic data, and complete the activity sheet. Complete copies of the questionnaire were collected by the experimenter once each week.

All subjects were asked to look over the activity sheet and indicate the Rate (days per week or month) and Duration (minutes per day) of activities they had participated in over the past six months. Activities not involved in were left blank (see Appendix C). Additional space was provided for those activities not covered by the activity sheet (see Appendix D).
Results

Comparison between groups of the number of leisure activities participated in showed no significant difference, \( t(98) = .44, p > .05 \). The number of leisure activities filled in was also not significantly different for C versus NC males, \( t(46) = .74, p > .05 \), nor C versus NC females, \( t(50) = 1.29, p > .05 \).

Glasser's criteria (Glasser, 1976) for minimal degree of involvement for consistently attaining the PA state was used to calculate the number of PA activities for each subject. Any activity participated in for a majority of days per week, i.e. four or more days, and for over 30 minutes was considered a PA level activity. Table 3 shows the mean number of PA activities overall, and for both groups.

In comparing the two groups it was found that the NC group had significantly more PA activities than the C group, \( t(98) = 2.11, p < .025 \). Analysis were computed separately for males and females. Comparisons of the mean number of PA activities between NC and C females showed a significant difference, \( t(50) = 1.73, p < .05 \). No significant difference was found between the mean number of PA activities for NC versus C males, \( t(46) = 1.25, p > .05 \).
Table 3
Mean Number of PA Activities

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>( \bar{x} )</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nonclinical</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>24</td>
<td>2.21</td>
</tr>
<tr>
<td>Females</td>
<td>26</td>
<td>2.77</td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
<td>2.50</td>
</tr>
<tr>
<td><strong>Clinical</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>24</td>
<td>1.62</td>
</tr>
<tr>
<td>Females</td>
<td>26</td>
<td>1.88</td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
<td>1.76</td>
</tr>
</tbody>
</table>

Statistics were done to compare the groups on the following demographics: age, income level, and marital status. No statistics were run on education level since the data was visually significantly different. The racial structure of the two groups was not analyzed since there existed a visually significant similarity.

Analysis of age differences between groups showed no significant difference, \( t (98) = 1.34, p > .05 \). No significant difference was seen between groups on male ages, \( t (46) = .95, p > .05 \), or female ages, \( t (50) = .83, p > .05 \).
A significant difference was found in comparison of income levels between groups, $X^2 (4) = 12.04, p < .02$. Table 4 reflects the frequency of subjects in each income level for the two groups.

Table 4

Analysis of Income Level Frequency

Number of Subjects for each Income Level

<table>
<thead>
<tr>
<th>Group</th>
<th>0-6</th>
<th>6-12</th>
<th>12-18</th>
<th>18-24</th>
<th>24-30$^a$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonclinical</td>
<td>19</td>
<td>20</td>
<td>8</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Clinical</td>
<td>29</td>
<td>14</td>
<td>5</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>

$^a$ thousands of dollars.

Comparison of NC versus C female income level showed a significant difference, $X^2 (4) = 9.64, p < .05$. Table 5 shows the number of females in each income level for the two groups. No significant difference was found between NC and C males on income level, $X^2 (4) = 1.34, p > .05$.

No significant difference was found in a comparison of marital status for the two groups, $X^2 (4) = 1.37, p > .05$. 

Table 5
Analysis of Income Level Frequency
Number of Females in each Income Level

<table>
<thead>
<tr>
<th>Group</th>
<th>0-6</th>
<th>6-12</th>
<th>12-18</th>
<th>18-24</th>
<th>24-30&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonclinical</td>
<td>7</td>
<td>14</td>
<td>3</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Clinical</td>
<td>18</td>
<td>5</td>
<td>2</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

<sup>a</sup> thousands of dollars.
Discussion

The lack of a significant difference between groups on the number of activities is surprising. It was believed that with more strength one would participate in greater numbers of activities. Glasser (1976) states "Strength breeds strength... the more they have, the more they get" (p. 66). Thus, it was thought this would manifest itself in greater diversity of activities in general. Instead the strength gained in one PA activity seems to have been invested in other PA activities. This is evident in the significant difference between groups on the number of PA level activities. It would seem then, that it is not the number of activities one is involved in so much as the degree to which the involvement occurs. Thus, the more involvement, the greater likelihood of a consistent PA experience, and the greater likelihood of not using mental health services. This seems to be a positive feedback system leading to greater involvement in another PA activity. It would prove interesting to know if a limit exists on this growth and, if so, what delimits it.

Apparently, individuals using services of a mental health center have enough strength to participate in as many activities as individuals who do not use those services. The difference lies in the degree of involvement in one or more activities. This difference supports Glasser's assumption that those without
enough strength to get what they need on their own are not participating in activities that could gain them the strength to do so. An interesting research question could be to see if there would be a difference between clients informed of the benefits of being committed to an activity such as jogging and those who were not so informed. The groups would be equated on other factors as closely as possible, e.g. demographics, initial levels and history of exercise or meditation. One group would be informed, as part of therapy, that research has indicated participation in an activity such as jogging, at PA levels, has beneficial effects. It would be recommended that this be applied through a supervised exercise or meditation program. Only non-psychotic clients would be selected to minimize such confounds as reaction to medication and exercise, hospitalizations, etc. As with any physical program, if this avenue were chosen, the clients would be advised to get a physician’s approval before initiating training.

A second group would be included in the study, not being directly informed of the benefits of participation; this would serve as a control. A post-therapy questionnaire would look at self-report by the client on: degree of involvement in activities, perceived outcome of therapy, and other changes in their life. Inclusion of a personality measure, such as the Cattell 16 PF Questionnaire, would also be valuable in examining the longitudinal changes of those who undergo both therapy and activity to those receiving just therapy.
Considering that several researchers (Greist, Klein, Eischens, Faris, & Morgan, 1979; Solomon & Bumpus, 1978; Gary & Guthrie, 1972) have had success in applying exercise programs to aid in the treatment of depression, anxiety, and alcoholism, it could be predicted that a significant difference would be observed between groups. A possible confound could be that none of the informed group uses the information, i.e. they do not involve themselves in any PA level activity.

The present study could have been made stronger if client diagnosis were included in the demographics. It was originally believed that omission of this aspect would facilitate the study by increasing subject anonymity. By reducing third-party involvement to just the administration and collection of questionnaires, client identification would be minimized. While this was achieved, it may have been overdone.

Studies reviewing the usage of community mental health centers have shown that alcoholism is the primary diagnosis for a majority of outpatient clients (Hornstra & Udell, 1973; Mental Health Statistics, 1973). Consider, too, "Drinking makes him (an alcoholic) even less likely to achieve any real esteem or power, thus necessitating more drinking" (Sarason, 1976, p. 531). In other words, an alcoholic is less likely to try positive avenues such as exercise or meditation; more likely to try negative avenues, alcohol. Without knowing the diagnosis of the clients included in the study, it could be that the difference between groups on numbers of PA level activities was the
result of having a disproportionate number of alcoholics in the C group. Too many alcoholics, or too few of other diagnostic categories, may have skewed the findings. It was thought that the selection of clinical subjects would, by random selection, be representative of users of a mental health center. This cannot be assumed. A recommendation for improvement of the present study would be to include either the diagnosis or presenting problem of the client. The latter may maintain client anonymity while reducing accuracy, however.

Considering the lack of identifying information requested in the questionnaire packet, asking the therapist to indicate a diagnosis for the client would not appear seriously to compromise the client's privacy. In fact, the therapist would know who was given the questionnaire, but the researcher would not, thereby allowing better matching of the clinical group to actual clinical norms.

Further analysis of the data presents strong evidence for alternate explanations of the results. The only other significant difference on the dependent variable PA level activities existed between the females of the two groups. Considering that the literature focuses mainly on differences in males participating in exercise or meditation, this is especially interesting. Upon closer examination of the demographic data, it was found that two areas were perhaps not adequately controlled. Education and income levels differed significantly between the females in each group. The males in each group were significantly
different on only the education factor. Given these facts, it could be hypothesised that the significant difference between females on numbers of PA level activities was confounded by their difference in the demographics. The trend towards significance in the male differences on PA level activities could have been confounded by having one aspect in the demographics differ.

These results would tend to agree with Langner and Micheal (1963) who found that activity was related to social status. Higher socio-economic status (SES) subjects in their study were more active in recreational pursuits. The study's SES ratings were based on a six level analysis of four categories: occupation, income level, education, and monthly rent. The amount of positive action or effort expended by subjects determined the activity level. Such activities as sports and hobbies were considered active, while television viewing or radio listening were deemed passive. Since this study's females differed on two of the above SES categories, it could be that their overall SES differences confounded the results. This confound may also have been enough to affect the group statistics. In other words, there could exist a relationship between higher education and/or income levels and the likelihood of attaining a PA. With higher overall education levels, it is possible the NC subjects were more aware of the need for including exercise or meditation in their daily living habits. This is a good possibility, since students are continually told to develop good physical fitness
habits while moving through the educational system. If sufficient financial resources were available to maintain these habits, it could be argued that one would be more likely to enter into an activity which could provide PA experiences. These points however, could also be viewed as excuses rather than explanations for the difference in PA level activities between NC and C subjects. That is, both jogging and meditation require little capital investment and can be correctly learned by anyone who can read (Glasser, 1976; Henderson, 1976; Kostrubala, 1976). Replication of this study, with control of diagnostic categories and demographic variables, should provide a clearer indication of actual PA activity levels for both groups.

Another finding of Langner and Micheal (1963) differs from the results of this study. Higher SES subjects in their study also engaged in more spare time activities. They reported 23.9% of high SES subjects with five or more activities, with only 4.8% of low SES subjects at this frequency. One possible explanation for this difference might be that within this study some leisure activities were included, eg. bathing, walking, etc., which were not spare time activities in their study. The inclusion and participation in these activities may have helped equalize the frequency of activity between groups in this study.

It would prove interesting to repeat this study with stricter guidelines for the activity list. These would include having only those activities, eg. jogging, meditation, cycling,
etc., that research has shown some support for affecting personality characteristics. This would prevent the possible confound or rare activities that provide PA experiences from being included. Some people might gain strength from bathing or singing, but the majority might not.

Glasser's concept, Positive Addiction, is primarily based on correlated findings of beneficial personality change and participation at high levels of involvement in activities such as jogging or meditation. From this correlation, Glasser formulated a theory that says, the salutary changes are caused by the involvement in the activities.

Research has shown the correlations to hold true, i.e. beneficial personality changes have been found in participants of exercise or meditation programs. What the research has not verified however, is that the participation itself caused the personality changes. Different theories have been proposed, some based on psychological aspects of involvement, some on the physiological changes; they remain theories only however.

The same could be said of this study. A positive correlation was found to exist between PA level involvement in activities and nonuse of mental health centers. It could be said that participation in PA level activities caused greater mental strength and thus no need for seeking help within a mental health center. In fact, this would follow from Glasser's theory. No direct causality could be attributed however, since this was a
correlational study. Additionally, alternate explanations of the results as based on demographic differences have been discussed.

There does exist one other possible view of the results. It could be that people in better mental health participate more in activities, i.e. their mental health causes higher levels of involvement and thus greater likelihood of experiencing a PA. From correlational studies alone, it is not possible to wholly attribute causality to any of the above explanations. It may be possible however, in a carefully designed and controlled study comparing several groups undergoing therapy, physical training, a combination of both, or none at all, to better define what caused what.

Positive addiction seems to be a potent avenue for anyone to help themselves. Use of its basic principle, beneficial personality change through active and continuous involvement in such activities as jogging or meditation, could positively influence a person's quality of life. This study seems to point to the necessity for commitment to an activity by which one gains the power to attain needs.
Please read this before completing the following pages.

This is a research questionnaire on leisure activity. The information asked for on the following sheets is for research purposes only and will in no way reflect on you personally. All information will be held strictly confidential. Do not sign your name or any other identifying information to these sheets. Thank you for assisting with this work.
APPENDIX B

Demographic Data Sheet

Please Complete All of the Following:

<table>
<thead>
<tr>
<th>AGE</th>
<th>MAJOR OCCUPATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SEX</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>RACE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MARITAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>RELIGIOUS PREFERENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HIGHEST EDUCATIONAL GRADE REACHED</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>INCOME LEVEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>$ 0 - 6000</td>
</tr>
<tr>
<td>$ 6000 - 12000</td>
</tr>
<tr>
<td>$ 12000 - 18000</td>
</tr>
<tr>
<td>$ 18000 - 24000</td>
</tr>
<tr>
<td>$ 24000 - 30000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>THERAPY - CHECK AT LEAST ONE</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAVE BEEN IN THERAPY (INDIVIDUAL, GROUP, FAMILY, OR OTHER) AND NOT CONTEMPLATING THERAPY AT PRESENT.</td>
</tr>
<tr>
<td>HAVE NEVER BEEN IN THERAPY, AND NOT CONTEMPLATING THERAPY AT PRESENT.</td>
</tr>
<tr>
<td>HAVE BEEN IN THERAPY, AND AM PRESENTLY CONTEMPLATING THERAPY.</td>
</tr>
<tr>
<td>HAVE NEVER BEEN IN THERAPY, AND AM PRESENTLY CONTEMPLATING THERAPY.</td>
</tr>
</tbody>
</table>

*NOTE: THERAPY COULD ALSO INCLUDE, HOSPITALIZATION OR MEDICATION FOR A PSYCHIATRIC DISORDER, VOCATIONAL, OR COUPLE THERAPY.*
APPENDIX C

Activity List

Below is a list of leisure activities. Please indicate the Rate (days per week or month) and the Duration (minutes per day) for each of the activities that you have participated in during the past six months. Do not fill-in those you have not done.

Example: 3 days, 30 min. BICYCLING
4 days/mo., 60 min. PRAYER

<table>
<thead>
<tr>
<th>Activity</th>
<th>Rate</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCHERY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BACKPACKING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BATHING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BASKETBALL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BICYCLING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BILLIARDS/POOL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BOWLING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CANOEING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DANCING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EXERCISING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FLYING/GLIDING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FOLKDANCING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GARDENING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GOLF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIKING/WALKING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HORSEBACK RIDING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HUNTING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ICE SKATING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROLLER SKATING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>JOGGING/RUNNING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>KITE-FLYING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEDITATION</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NEEDLEWORK</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PAINTING/DRAWING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PLAYING MUSICAL INST?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRAYER</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SAILING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCULPTURE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SEWING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SINGING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SKIING (WATER)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SQUASH/HANDBALL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SWIMMING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WEIGHTLIFTING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>YOGA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROWING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FISHING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MOUNTAIN CLIMBING</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Please indicate below any other sports, leisure or meditative activities that you have participated in during the past six months. Be sure to include the Rate (days per week or month), and Duration (minutes per day) for each activity.

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

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APPENDIX E

Instructions for Administrators

Please have the subjects read the cover sheet for the packet. Restate that they should not sign or in any way indicate identifying information on the sheets, and that the information they are giving will in no way reflect on them personally. If doubt exists as to how to answer the demographic sheet, please provide help, as you understand the sheet from discussion with experimenter. Approximations are acceptable, and all sections of the demographic sheet should be filled in. If questions arise as to the activities questionnaire, please provide help and indicate that approximations are allowable. Please collect and place these packets in the envelope provided. Thank you for assisting with this study.
APPENDIX F

Authorization for Release of Records (NEOCMHC)

NORTHEAST ORANGE
COMMUNITY MENTAL HEALTH CENTER, INC.

AUTHORIZATION FOR RELEASE OF RECORDS

Permission is hereby given to the above named agency to secure and/or release information for professional use, from the records of the patient listed below and for the illness or condition for which the patient is now being treated. This authorization includes the release of psychological and/or psychiatric information which may be part of the medical record. This release shall be in compliance with Section 333 of Public Law 91-616 as amended by Public Law 93-282. Agencies acquiring information for other than patient treatment purposes are warned that the information is covered by Federal regulations restricting redisclosure without further authorization by the patient. This release authorization shall be terminated six months from date of signature or shall expire upon completion of treatment without express revocation by the patient.

______________________________  ________________________________
(NAME OF PATIENT)           (BIRTH DATE)

Other individual or agency concerned:

______________________________
Address:

______________________________
The purpose for disclosure and type of information required:

______________________________
Date(s) Patient Seen:

This release authorization may be revoked at any time upon notification by the signatory or patient but revocation has no effect on action previously taken.

______________________________
Signed: Patient's Signature - or Guardian

______________________________
Relationship:

______________________________
Date:

Witness:

______________________________
THIS INFORMATION SHOULD BE ADDRESSED TO:

______________________________

______________________________

______________________________
APPENDIX G

Authorization for Release of Records (BJCMHC)

BETH JOHNSON COMMUNITY MENTAL HEALTH REHABILITATION CENTER, INC.

AUTHORIZATION FOR RELEASE OF RECORDS

Permission is hereby given to the above named agency to secure and/or release information for professional use, from the records of the patient listed below and for the illness or condition for which the patient is now being treated. This authorization includes the release of psychological and/or psychiatric information which may be part of the medical record. This release shall be in compliance with Section 333 of Public Law 91-616 as amended by Public Law 93-282. Agencies acquiring information for other than patient treatment purposes are warned that the information is covered by Federal regulations restricting redisclosure without further authorization by the patient. This release authorization shall be terminated six months from date of signature or shall expire upon completion of treatment without express revocation by the patient.

(NAME OF PATIENT) (BIRTH DATE)

Other individual or agency concerned: ____________________________________________

Address: ______________________________________________________________________________

The purpose for disclosure and type of information required: ______________________

Date(s) Patient Seen: ____________________________________________________________

This release authorization may be revoked at any time upon notification by the signatory or patient but revocation has no effect on action previously taken.

Signed: _____________________________________________________________

Patient's Signature - or Guardian

Relationship: ______________________________________________________________

Date: _________________________________________________________________________

Witness: _______________________________________________________________________

THIS INFORMATION SHOULD BE ADDRESSED TO:

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________
References


Hornstra, R. K., & Udell, B. Use of psychiatric services and insurance coverage. Hospital and Community Psychiatry, 1973, 24, 90-93.


Tillman, K. Relationship between physical fitness and selected personality traits. Research Quarterly, 1965, 36, 483-489.