Use of Leisure Time by Cardiac Patients

Helen A. Fitts, Margot C. Howe

There has been increasing evidence that psychological stress is a risk factor in the development of heart disease. How an individual copes with stress will determine its impact on his or her health. The literature proposes that the effects of stress can be minimized, reduced, or reversed by factors such as goal-directed activity, physical exercise, relaxation, or emotionally supportive relationships. An exploratory study was conducted to compare activity patterns and leisure concepts between matched groups of cardiac and noncardiac subjects. The data indicate trends in the differences between these two groups in activity patterns and in the variety of activities that characterized their leisure time. The results suggest areas for occupational therapy intervention in the treatment of cardiac patients.

Stress has been identified as a major risk factor in the development of heart disease. Stressors such as excessive work and responsibility (House, 1975, Theorell & Fokheus-Myrhe, 1977), job dissatisfaction (Russek, 1959), life dissatisfaction, and family problems (Liljefer & Rahe, 1970) have been reported as common characteristics of cardiac patients.

Antonovsky (1981) stated that the way an individual copes with stress will determine its impact on his or her health. In fact, a particular pattern of response to stress found among a significant number of cardiac patients is type A behavior, which has been associated with an increased risk of heart disease by Friedman and Rosenman (1974). This behavior is associated with a chronic stress response, resulting in a repeated discharge of the stress hormones, epinephrine and norepinephrine. These hormones act to increase heart rate, constrict blood vessels, and accelerate respiration, making it difficult for the body to return to a more balanced state (Girdano & Everly, 1979).

To maintain health, the individual who experiences stress must take advantage of any opportunity to bring the body and mind back to a more balanced state (Girdano & Everly, 1979). It has been proposed in the literature that in a healthy person, the effects of stress can be minimized or reduced by such factors as physical exercise (Wood, 1981), relaxation (Benson, 1975), goal-directed activity (Gal & Lazarus, 1975), and emotionally supportive interpersonal relationships (Berkman, 1978; Wolf, 1969). This leads to the question of whether individuals who have heart disease employ these same methods to restore mind and body to a more relaxed state.

Selye (1974) noted that it is during leisure time that the individual has the greatest opportunity to relax and relieve tension. Yet the literature suggests that cardiac patients have a lack of leisure (Liljefer & Rahe, 1970), have difficulty relaxing (Theorell & Rahe, 1972), and are unable to derive satisfaction from leisure activities (Wolf, 1969).

Further investigation is necessary to determine how individuals in a cardiac population use leisure activities. Studies on the use of leisure have particular relevance for occupational therapy. If it is an objective of occupational therapy to facilitate successful adaptation, as suggested by King (1978), then there is a need to delineate patterns of activity that constitute effective or ineffective adaptation.

An individual with heart disease is a stressed person who has been unsuccessful at adaptation. A stated goal for occupational therapy in treating such a person in a cardiac rehabilitation program is, according to Smith (1982), to “assist the patient’s return to his roles within his family and community with...
methods for changing his life-style to decrease the risk factors” (p. 14). Occupational therapists need empirical data to make recommendations for appropriate life-style changes.

In an analysis of life-style, it is essential to examine activities within the context of time (Cynkin, 1979). Meyer (1922) originally proposed that humans organize time through activity and doing things and that health is reflected in rhythms of work, rest, and sleep, which must be balanced, even under difficult circumstances. Kielhofner (1977) further maintained that there is health potential in the purposeful use of time, and that the way in which individuals use and organize time is a measure of their adaptiveness. The work–play model of Shannon (1972) presumed that there is a balance in the work–play relationship that must be maintained for physical and mental health.

If such concepts are to be useful in occupational therapy, there is a need to develop a more definitive picture of the work, play, rest, and sleep relationships in a temporal context, showing how these activities relate to successful adaptation. The purpose of this study is to determine if there are activity patterns in cardiac patients that characterize their use of leisure. This research seeks to compare the use of time by a group of cardiac subjects and by a group of noncardiac subjects and to determine whether there are differences in the way cardiac and noncardiac subjects apportion time for work, sleep, and leisure. Particular attention is given (a) to differences between the groups regarding the types of activities that constitute leisure time and (b) to the attitudinal differences toward those activities and toward leisure itself. Attitudinal differences may indicate whether cardiac patients experience satisfaction and relief from stress through their leisure activities. The hypotheses are as follows.

- **Hypothesis 1:** Cardiac subjects spend more time in work and less time in play, rest, and/or sleep, than noncardiac subjects.
- **Hypothesis 2:** Cardiac subjects derive less satisfaction from their leisure activities than noncardiac subjects.
- **Hypothesis 3:** Cardiac subjects engage in fewer tension-reducing activities than noncardiac subjects.

**Methodology**

**Subjects.** Fifteen cardiac patients, aged 33 to 65 years, with a mean age of 53 years, were chosen from three hospitals to participate in this study. These subjects were hospitalized with a first myocardial infarction (MI); the diagnosis was verified by electrocardiogram and enzyme studies. All were at least 1 week post-MI and were participants in an inpatient cardiac rehabilitation program. All were men who held full-time jobs in one of four occupational categories: managerial, sales, skilled, and semiskilled (Super, 1957). Twelve of the subjects were married and three were divorced.

Fifteen noncardiac control subjects, selected from a group of community volunteers, were matched with the cardiac subjects by age, sex, and occupation. All reported having no history of heart disease. Fourteen of the control subjects were married and one was divorced.

**Instrument.** Each subject answered a four-part questionnaire constructed for this study. Part 1 provided demographic data on occupation, sex, age, and marital status. Part 2 investigated the subject’s concepts of leisure, degree of satisfaction with the quality and amount of free time, degree of satisfaction with work, amount of vacation time taken in the previous year, and the question of whether stressful life changes had been experienced during the past 6 months. Part 3 questioned how subjects apportioned their time, that is, how much time they spent each day in sleep, work, other responsibilities, and free time. Free time was defined as time during which they could do whatever they chose to do. Part 4 identified the activities that constituted their leisure; how often they participated in each activity; the satisfaction they derived from the activity (on a scale from 0 to 4); and how they rated each of these activities for its ability to reduce tension. The list of activities was divided into (a) relaxation, (b) physical activities, (c) social activities, and (d) other leisure activities, which included hobbies and other personal interests.

**Procedures.** Before the study was begun, the approval of hospital research committees, the consent of the patient’s attending physician, and the informed consent of the patient were obtained. Cardiac subjects were directed to answer the questionnaire according to activity patterns in the weeks prior to the hospitalization. Control subjects were asked to answer the questionnaire according to their present activity patterns. Statistical analysis of data was done with descriptive and multivariate procedures contained in the Statistical Package for Social Sciences (Nie, Hull, Jenkins, Steinbrenner, & Buehler, 1975). The significance level for this study was $p \leq .05$.

**Results**

The cardiac subjects did not differ significantly from the control subjects in the way their time was distributed between work, sleep, and leisure. Cardiac and noncardiac subjects averaged 48 and 50 hours of work per week, 46 and 47 hours of sleep per week, and 39 and 36 hours per week of free time, respectively. Hypothesis 1, which stated that cardiac subjects, when
compared with noncardiac subjects, spent more time in work and less time in play, rest, and sleep, was not confirmed.

There were significant differences, however, in the way in which the two groups spent their free time. The groups were compared for the number of different types of activities assumed. The questionnaire listed five types of relaxation activities, and the differences between groups in this category were not significant. However, when the two types of physical activity were compared, the control group showed significantly greater participation ($p \leq .02$). In the five types of social activities listed the control subjects again showed significantly broader participation ($p \leq .015$). The "other leisure" category showed similar significant differences between groups. For the total number of activities, the differences between the means of the two groups was significant at the $p \leq .003$ level. This conclusion was reached that the noncardiac control subjects participated in a significantly greater number of leisure activities than did the cardiac subjects (see Table 1).

Results regarding the frequency of activity, or how many times per week individuals engaged in the activities, were calculated and comparisons were made between the two groups. The mean times per week that subjects engaged in each of the activities is shown in Table 2. Patterns of participation in the following activities were significantly different: Socializing was a more frequent activity for control subjects as was participation in groups/organizations and "other leisure" activities.

It must be noted here that the standard deviations (see Table 2) were consistently greater for the cardiac group, indicating a wide range of scores in frequency of activity. The cardiac group contained subjects who had very low activity scores and others who scored very high. Although these scores averaged out in the group means, the variability among cardiac subjects required closer scrutiny particularly in light of the fact that the control group scores did not show such variability. An analysis of the differences between variances ($S$) of the two groups indicated that the difference was significant for (a) social activity periods, $F(14, 14) = 2.764, p \leq .04$ and (b) for the total number of activity periods $F(14, 14) = 3.70, p \leq .01$.

For each subject, the number of activity periods was converted to a Z score, and those individual scores that were more than one standard deviation above or below the grand mean were recorded. For purposes of discussion, a negative Z score (a score more than 1 standard deviation below the grand mean) could be considered a deficit of activity; a positive Z score (a score more than 1 standard deviation above the grand mean) could be considered an excess of activity relative to all subjects in the study.

The results showed that the cardiac group had more extreme scores, with 11 positive and 15 negative scores, whereas the noncardiac group had 10 positive and only 4 negative scores. The greatest deficit in the cardiac group was in the category of social activity. Here the cardiac group had 6 negative scores, and the noncardiac group had none. This would indicate that 40% of the cardiac group had a significant lack of social involvement. The category of physical activity also showed more negative scores for the cardiac group (6) and fewer for the noncardiac group (2).

Hypothesis 2 stated that cardiac patients derive less satisfaction from their leisure activities. No significant difference was found between the two groups in either satisfaction from each activity (except for participation in organized groups where the cardiac group scored significantly higher) or total leisure satisfaction scores. Once again the variances of the two groups were significantly different, $F(14, 14) = 3.29, p \leq .017$. This indicated a wider variability within the cardiac group for total leisure satisfaction.

Hypothesis 3 stated that cardiac patients engage in fewer tension-reducing activities. Subjects rated activities according to whether doing the activity reduced their tension, increased it, or had no effect on it. Analysis of each activity category showed no differences between groups for the perceived capacity of activities to reduce tension, but when the groups were compared for the number of tension-reducing activities undertaken, results showed that the control subjects averaged 6.6 tension-reducing activities and the cardiac subjects averaged 4.6 tension-reducing activities. A $t$ test indicated the difference to be significant at the .04 level. This supports the hypothesis that cardiac patients engage in fewer tension-reducing activities than noncardiac subjects.

### Table 1

<table>
<thead>
<tr>
<th>Group</th>
<th>Relaxation Activities</th>
<th>Physical Activities*</th>
<th>Social Activities*</th>
<th>Other Leisure Activities*</th>
<th>Total*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiac $n = 15$</td>
<td>2.8</td>
<td>1.2</td>
<td>2.4</td>
<td>0.9</td>
<td>7.3</td>
</tr>
<tr>
<td>Noncardiac $n = 15$</td>
<td>3.1</td>
<td>1.7</td>
<td>3.6</td>
<td>1.5</td>
<td>9.9</td>
</tr>
</tbody>
</table>

* $t$ test showed a significant difference between groups, $p < .05$. 

The American Journal of Occupational Therapy
Table 2
Frequency of Participation in Relaxation, Physical, Social, and Leisure Activities by Cardiac and Noncardiac Subjects

<table>
<thead>
<tr>
<th>Activity</th>
<th>Cardiac Mean Times per Week Engaged in Activity</th>
<th>Noncardiac Mean Times per Week Engaged in Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relaxation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Watching TV</td>
<td>5.20 (14)</td>
<td>6.13 (15)</td>
</tr>
<tr>
<td>Reading</td>
<td>5.80 (13)</td>
<td>6.93 (15)</td>
</tr>
<tr>
<td>Listening to music</td>
<td>3.60 (9)</td>
<td>3.20 (10)</td>
</tr>
<tr>
<td>Meditation</td>
<td>0.7 (1)</td>
<td>1.27 (5)</td>
</tr>
<tr>
<td>Sitting, doing nothing</td>
<td>1.53 (5)</td>
<td></td>
</tr>
<tr>
<td>Physical activities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical exercise</td>
<td>3.27 (10)</td>
<td>4.00 (12)</td>
</tr>
<tr>
<td>Work around house or garden</td>
<td>2.20 (8)</td>
<td>2.27 (13)</td>
</tr>
<tr>
<td>Social activities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Telephoning</td>
<td>2.00 (9)</td>
<td>2.53 (12)</td>
</tr>
<tr>
<td>Socializing, going out</td>
<td>1.28* (12)</td>
<td>2.22* (15)</td>
</tr>
<tr>
<td>Religious observance</td>
<td>0.62 (9)</td>
<td>0.63 (11)</td>
</tr>
<tr>
<td>Organizations</td>
<td>0.15* (2)</td>
<td>0.58* (9)</td>
</tr>
<tr>
<td>Volunteer work</td>
<td>0.47 (4)</td>
<td>0.42 (7)</td>
</tr>
<tr>
<td>Other leisure activities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hobbies</td>
<td>0.62 (5)</td>
<td>1.10 (8)</td>
</tr>
<tr>
<td>Other leisure 1</td>
<td>0.65 (8)</td>
<td>1.07 (11)</td>
</tr>
<tr>
<td>Other leisure 2</td>
<td>0.0 (0)</td>
<td>1.17* (1)</td>
</tr>
<tr>
<td>Total activity periods</td>
<td>27.70 (SD = 12.39)</td>
<td>32.59 (SD = 644)</td>
</tr>
</tbody>
</table>

Note: ' Numbers in parentheses indicate number of subjects responding. * p < .05.

Data gathered through Part 2 of the questionnaire showed other significant differences between the two groups. First, a t test established a difference between the groups (p < .04) regarding the amount of vacation taken within the last year. For the cardiac group, the mean score was 1.5 weeks, with four subjects taking no vacation at all, and for the control group, 2.8 weeks. Second, the two groups differed in attitudes towards leisure (χ², p < .01 level). Eighty-seven percent of the cardiac subjects agreed with the definition of leisure as "anything that is not work," whereas only 36% of control subjects agreed with this definition. Also, attitudes towards leisure were found to differ between the two groups (χ², p < .01). Most cardiac subjects (73%) agreed that leisure should be spent "as a spectator," whereas 79% of the control group disagreed with this statement. The groups also differed in their views of "peaceful contemplation" as a use of leisure in that 80% of the cardiac group indicated "agree with this definition" whereas 54% of the control group indicated "disagree with this definition." Other answers to Part 2 of the questionnaire showed that the groups were not different in their degree of satisfaction with work, the quality and quantity of their free time, and their experience of stressful life changes. Over half (53%) of each group reported that they had experienced stressful life changes within the previous 6 months.

Limitations
Certain limitations of this study need to be acknowledged. The sample size was small, and the method of data collection subjective. The noncardiac subjects had not experienced the trauma of an MI, nor had their work roles been interrupted because of hospitalization.

Discussion
The results of this study showed that there were distinct differences between the cardiac and the noncardiac groups in the activity patterns that characterized their leisure time. The noncardiac subjects showed a more active orientation to leisure. They included in their leisure a greater number and a wider variety of activities. They also showed a greater balance between relaxation and active leisure pursuits.

The cardiac group exhibited wide variability in their patterns of leisure. The extremes found in this group indicated a relative lack of moderation in their approach to leisure. On the whole, they demonstrated a narrower range of activities and a less balanced relationship between relaxation and active pursuits. Their activity patterns often showed a deficit of physical or social activities and a preference for relaxation. However, some cardiac subjects demonstrated an extreme number of active pursuits combined with a lack
characteristics of the classic type A individual described by Friedman and Rosenman (1974).

The most significant factor found in this study, in relation to stress reduction, was the balance of activities within leisure. A balance between different types of activities was more common to the control group and tended not to be present in the profile of the cardiac subjects. These results possibly indicate that an absence of balance may result in increased stress. The cardiac subjects also seemed to use leisure time in a manner that did not support good tension management and therefore was not conducive to successful adaptation.

The literature reviewed suggested that a moderate balance of certain types of activity was healthier than extremes of too much or too little activity. House et al. (1982) determined that moderate levels of social activity had the most beneficial effect on health. Extremes of social activity were more often associated with a high mortality rate. In addition, these researchers found that solitary relaxation activities were associated with an increase in mortality. As seen in this present study, there was a significant lack of social involvement in 40% of the cardiac group. Smith and Sherman (1982) noted that many cardiac subjects had almost completely disassociated themselves from other people, and, as a result, were lacking in emotional support. A lack of emotional support is considered by Antonovsky (1981) to be a stressor in itself.

In the area of physical activity, 40% (6 subjects) of the cardiac group showed a deficit of physical activity compared with 13.3% (2 subjects) of the control group. This finding is supported by other studies which have reported that cardiac subjects often showed a lack of physical exercise during leisure (Liljeors & Rahe, 1970; Magnus, Matroos, & Strackee, 1979). The case for moderation in physical activity was supported by Morris and Crawford (1958), who reported that optimum benefit could be derived from a moderate amount of mildly vigorous physical activity. Extremes of no physical activity or too much strenuous activity had a higher association with heart disease. Such research supports the findings of this study that a balance of moderate participation in relaxation and physical and social activities, which is characteristic of the noncardiac group, is conducive to health and successful adaptation.

The more subjective measurements of attitudes towards, and definitions of, leisure also showed characteristic differences between the two groups. The leisure attitudes of cardiac subjects disclosed a preference for a passive role in leisure. Although these attitudes of the cardiac patients may have been colored by their recent experience of an MI, it is also true that this group viewed leisure as the antithesis to work. This may indicate that they perceive work and leisure as separate, unrelated realms. It may also account for the extreme variations in leisure activities found in this group.

Implications for Treatment

Within the group of cardiac patients, individuals displayed activity patterns not appropriate to good tension management. Good tension management was determined to be a balance of relaxation and physical, social, and goal-oriented activities. A lack of any type of activity was seen as a specific area for intervention although extremely high levels of activity also merited attention. Brightbill (1960) maintained that the inability to use leisure appropriately was the result of inadequate leisure education. An integral part of treatment, therefore, should be leisure education or counseling.

The cardiac group also showed a wide variability of activity patterns. In spite of the emphasis accorded type A behavior in the literature, not all cardiac patients manifested this behavior in their leisure patterns. The extreme variations which existed among the cardiac subjects suggested that preventive or rehabilitative treatment should be individualized and that activity patterns should be examined within the context of the person's life roles. According to Cynkin (1979), activities can be effective in bringing about change, but only if they have meaning and relevance to the individual. Relaxation and meditation, for example, are commonly introduced in cardiac rehabilitation programs, and they are effective treatment forms for those individuals who find relaxation and meditation meaningful. Relaxation was an activity area that was not found to be deficient for the majority of the subjects in this study. Rather the areas of physical or social activities were found to be deficient, and these areas have been shown to be equally important in good tension management.

The cardiac group reported attitudes towards leisure that were different from those reported by the noncardiac group. Moreover, cardiac subjects reported a high degree of satisfaction with their leisure activities and the quality of their leisure time. Satisfaction with a style of leisure that may not be conducive to good health is an obstacle that needs to be overcome in the treatment of these individuals. Friedman and Rosenman (1974) have noted that type A individuals want to avoid heart disease, but do not want to change their life-styles.

A life-style or behavioral pattern is determined by the individual's values. According to Kielhofner (1980), the volitional subsystem, which is composed
of goals and interests, guides choices of action. Occupational therapy treatment should aim intervention at the volitional level. A clarification of values, interests, and goals will allow the client to examine his or her own motivations. New choices about how to use time and the development of new skills will then be reorganized into new habits that enhance the individual’s adaptation.

Cardiac rehabilitation programs that prescribe change, but do not contribute to structuring the change, will have little chance of being effective. Croog and Levine (1982) have shown that patients often revert back to their previous stressful habits after recovery from MI. If any resultant effect of the MI on life-style can be found, it is in the direction of greater inactivity (Finlayson & McEwen, 1977). Clearly, these patients should not be left to their own devices.

Occupational therapy is unique in providing an arena for patients to develop and practice new skills (Englehardt, 1977). Programs that would be expected to have the greatest chance of success in effecting life-style modification are long-term outpatient programs. They provide not only the time and structure necessary for the reorganization of life patterns but also a supportive group atmosphere. Howe and Schwartzberg (1986) emphasize that the small group reinforces behavioral change and also provides emotional support. This type of support is particularly important for those members of the cardiac population who have become socially isolated (Fitts, 1984).

Occupational therapy is frequently limited to inpatient acute-care programs in cardiac rehabilitation. This study recommends the expansion of these programs into postdischarge outpatient treatment which concentrates on life-style modification. Matheson, Selvester, & Rice (1975) pointed out that a program which does not pursue effective life-style modification in conjunction with the resumption of life roles does not provide true cardiac rehabilitation but merely cardiac restoration.

Acknowledgments

Portions of this study were included in a presentation made at the 1984 American Occupational Therapy Annual Conference in Kansas City, Missouri.

References


