

# Differences in Motivation for Sport and Exercise and Their Relations with Participation and Mental Health

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The relations between motivation for physical activity, level of participation indices and psychological outcomes of activity were examined for 376 adult subjects. Three participation motivation factors—interest/enjoyment, competence, and body-related motives—were measured, using a new scale presented in the study. A primary purpose of the study was to examine motivational differences between two groups: persons whose primary activity is an individual sport and those whose primary activity is fitness- or exercise-oriented. Results showed individual sport participants to have higher interest/enjoyment and competence motivation than fitness group participants, while the fitness group scored higher on body-related motivation. Correlations showed all types of motivation to be related to participation indices; however only interest/enjoyment and competence motivation were related to positive psychological outcomes. Body-related motivation was associated with greater depression and anxiety, but not with self-esteem. Level of participation indices generally correlated with feelings of physical fitness, but not with mental health outcomes. Results are compared with previous studies, and their theoretical implications are discussed.

Le rapport entre la motivation pour l'activité physique, l'indice du niveau de participation et les issues psychologiques d'activité, il est examiné pour 376 sujets adultes. Trois facteurs de motif et participation—l'intérêt/la jouissance, la compétence, et les motifs ayant rapport au corps—ils sont mesuré utilisant une nouvelle échelle qui est présenté dans l'étude. Un but primaire de cette étude était étudier les différences de motivation entre deux groupes: les individus qui ont l'activité primaire de sport individuel et ceux de l'activité primaire d'orientation vers la bonne santé ou vers l'exercice. Les résultats montrent que les participants individuels de sport ont plus haut intérêt/jouissance, et ils ont plus de capacité et motivation que les participants du group de bonne santé, tant que les participants du group de bonne santé ont conté plus points que ceux de motifs ayant rapport au corps. Les corrélations ont montré que tous les sortes de motifs ont rapport avec l'indice de participation; bien que seulement l'intérêt/la jouissance et les motifs de compétence ont rapport avec les résultats psychologiques et positifs. Les motifs ayant rapport au corps sont associé avec plus d'abaissement et d'anxiété, mais ils ne sont pas associé avec amour propre. Le niveau de l'indice de participation généralement est en rapport avec le sens de bonne santé, mais

il n'est pas en rapport avec les résultats de santé mentale. Les résultats sont comparé avec les études précédents, et leurs implications théoriques sont discuté.

Despite its theoretical and applied significance, research on why people participate in sport and exercise (participation motivation) has a relatively brief history (Alderman & Wood, 1976; Sapp & Haubenstricker, 1978; Gill, Gross, & Huddleston, 1983; Gould, Feltz, & Weiss, 1985). To date, this research on motivation has emphasized differences both by age and gender in the motives that energize athletic activity. In addition it has been shown that both intrinsic and extrinsic motives can underlie participation (Deci & Ryan, 1985; Vallerand & Reid, 1984) and are differentially associated with levels of participation and satisfaction.

The present study focuses on motivational factors that influence adults' engagement in a primary physical activity, defined as the activity in which an individual most often participates. Two general classes of primary activities are examined: those characterized as sport and those representing fitness and/or exercise. It is hypothesized that these two types of activity are differentially motivated, with sport participants reporting being more motivated by intrinsic interest and competence compared to fitness participants, whereas fitness and exercise participants will rate health and appearance concerns more highly than sport participants. The study also examines how these varying motives relate to level of participation and to psychological attributes often thought to be associated with participation in sport and/or exercise. Additional foci include examination of gender differences in motives and relations between levels of participation and psychological health.

### **Motivation in Sport and Exercise**

Much of the earliest work on participation motivation for sport and exercise focused on youth participation (e.g., Alderman & Wood, 1976; Sapp & Haubenstricker, 1978; Gill et al, 1983; Gould et al., 1985; Klint & Weiss, 1987; Wankel & Kreisel, 1985; McGuire & Cook, 1983; Robinson & Carron, 1982). These studies of motives among young athletes suggest that young athletes participate in sports for a number of different reasons, and that fun, skill development, challenge, and fitness are among the most frequently cited motives.

In contrast to youth participation in sport, adult involvement in sport and exercise is a more recent research area, and findings from this literature suggest that there

may be important differences in the motives energizing various adult physical activities. For example, two studies of adult runners (Summers, Machin, & Sargent, 1983; Summers, Sargent, Levey, & Murray, 1982) explored why they participate in marathon running as well as why they initially began running. Reasons for marathon participation included personal challenge, sense of achievement, personal satisfaction, and physical fitness. Subjects said they began running to improve fitness, lose weight, and improve health. Biddle and Bailey (1985) assessed motivation in a small, adult sample of fitness-class participants. Their results showed that women rated tension release and social factors as top reasons for participation whereas men rated health and fitness most highly as motives for participation. When sex differences were examined in a multivariate framework, it was found that men showed higher competition motives than women, whereas women showed higher social experience and tension release motives than men. Mathes and Battista (1985) surveyed a college sample of athletes and non-athletes concerning their motives for participation using the theoretical perspective of Kenyon (1968). Three motives emerged as salient to this group: competition, health and fitness, and social experience. Once again, it was found that women tended to place more emphasis upon social motives and men placed more emphasis upon competition motives.

Considered together, these studies of participation motivation suggest that: Adults show somewhat different motivation than young people, with fun and enjoyment emerging as a motive less often in adult studies; and adult men and women show differences on some motivational factors for physical activity, with men more likely to report competition and challenge as important motivators and women placing greater significance on social motives. The studies also suggest that participation motives may be influenced by the type of activity studied.

Interestingly, few investigators have compared motives for different types of activity within the same study. One of the hypotheses of the current study is that what motivates people who engage primarily in sports is different than what motivates those whose primary activity is fitness or exercise oriented. More specifically, it is expected that sports participants will indicate that interest/enjoyment and competence motives are more important reasons for participation than will fitness participants, whereas body-related concerns are expected to be more salient for fitness participants than for those in sports. Interest/enjoyment and challenge are considered, for our present purposes, as "intrinsic" insofar as they pertain to satisfactions derived from the activity per se. Body-related concerns are extrinsic in the sense that the activity is done in order to achieve a separable, extrinsic outcome (Deci & Ryan, 1985), in this case improved appearance or fitness.

### *Psychological Benefits of Exercise*

A second and equally important topic of interest in sports research has been the psychological and physical health benefits of athletic activities. The positive effects of exercise upon physical health are now well documented (American College of Sports Medicine, 1991). Although it is also widely believed that exercise has a positive effect on psychological health and well-being, the empirical literature on this issue is mixed. Folkins and Sime (1981) and Hughes (1984) in earlier reviews of the literature concluded that aerobic and fitness activities tend to improve self-concept but that there was little evidence to support the claim that exercise did much to alleviate depression, anxiety, or other aspects of personality functioning. Stern and Cleary (1982), reporting on the results of the National Exercise and Heart Disease Project, found no significant differences among adults assigned to a two-year exercise program in terms of psychosocial outcomes. In a recent controlled study of aerobic exercise in healthy middle-aged adults, King, Taylor, Haskell, and DeBusk (1989) found significant effects on outcomes closely tied to physical changes, such as "feeling fit," but found no evidence that other aspects of psychological well-being were affected.

A large number of studies relating exercise to psychological outcomes have been done with clinically depressed or distressed populations. In these studies, more positive effects of exercise on psychological outcomes have been shown to exist. Doyne et al. (1987) studied exercise as a treatment for depression and found that subjects who exercised as part of their treatment were significantly less depressed than a control group waiting for treatment. Hayden, Allen, and Camaione (1986) also reported positive effects of exercise in lowering depression scores of exercisers. Collingwood (1972) found that male rehabilitation clients assigned to exercise groups exhibited higher self-esteem scores than clients assigned to traditional therapy groups. Brown, Morrow, and Livingston (1982) assigned female subjects who participated in a 14-week exercise course to control and experimental exercise groups. At the end of the course, subjects in the exercise group exhibited higher self-concept scores than controls.

These clinical studies relating exercise and fitness to depression and self-esteem thus indicate that exercise participation can sometimes effect mental health outcomes. However, many of the studies mentioned used populations already diagnosed with emotional disorders. In addition, exercise was often used as a treatment and thus was not a freely chosen activity. The results of such studies are, accordingly, less applicable to a general adult population. Also these studies have focused primarily on fitness and exercise rather than sport activities, and do not

include a consideration of motivational orientations in the prediction of psychological outcomes.

### *The Present Study*

In the current study our intent is to examine how participation motivation varies by sex of participant and type of activity. In addition, we will examine the relations between motivational orientation, level of participation indices, and psychological outcomes of physical activity participation.

As part of this project we constructed a scale to measure prominent motivations for participation in physical activities that could be applied to both individual sports and to exercise/fitness activities. Three motivational factors were empirically identified: 1) interest/enjoyment (fun, enjoyment of the activity per se); 2) competence motivation (skill improvement, competition); and 3) body-related motivation (improve appearance, increase fitness). These three factors emerged from the literature review, from factor analytic studies in pilot samples, and from our own formulation of motives that could apply across a wide range of individual physical and athletic activities.

Although this factor analytically derived measure of motives was not constructed as a measure of intrinsic and extrinsic motivation, its three factors have some correspondence with this distinction. Intrinsic motivation is typically characterized in terms of interest/enjoyment and challenge seeking (Deci & Ryan, 1985; Frederick & Ryan, in press). The two corresponding factors identified in our survey construction largely reflect such intrinsic foci, and accordingly we expected them to be highly intercorrelated (e.g. Harter, 1982; Ryan & Connell, 1989). The body-related factor primarily reflects an extrinsic orientation, in the sense that the activity is being engaged in for a specific, instrumental reason. That is, when someone exercises or plays a sport in order to improve appearance or to achieve a fitness goal, their motivation is extrinsic to the activity per se. Extrinsic is thus not a pejorative term—it merely refers to the goal of the activity being separable from the activity itself.

Of interest in this regard are the possible gender differences related to participation motivation indicated by the previous literature. Women are expected to be higher on body-related motivation than men. This latter prediction stems from the idea that cultural pressures to attain lean body types and youthful appearance are stronger for women than for men (Henley, 1977). Men are expected to rate competence motives more highly than women, replicating prior studies (e.g. Mathes & Battista, 1985; Biddle & Bailey, 1985). No sex differences were predicted for interest/enjoyment as a motive.

It is also hypothesized that primary activities differ in their motivational underpinnings. Two activity classifications are examined in the present study: an individual sport group; and a fitness activity group. (How activities were sorted into these groups is elaborated in the Methods section.) It is predicted that activities of a sport type will be associated with greater interest/enjoyment and competence motivation than those that are fitness oriented, whereas fitness activities will be engaged in more for body-related motives than will sports.

A further purpose of this investigation is to examine relationships between motivational orientations and level of participation in both sport and exercise activities. It is predicted that interest/enjoyment and competence motivation will be positively correlated with various indices tapping level of participation in both sport and fitness groups. These predictions stem from theoretical propositions suggesting the importance of intrinsic and effectance-related motives in sustaining behavior that is not directly under external controls (e.g. Ryan, Vallerand, & Deci, 1984; Koestner & McClelland, 1990; McAuley, Wraith, & Duncan, 1991).

It is also hypothesized that there may be some direct relations between motivational orientations and psychological outcomes. Specifically we predict that body-related motivation will be associated with more negative outcomes, such as depression, anxiety, and lower self-esteem since such body-related concerns may already reflect more negative self-image and self-related attitudes. On the other hand interest/enjoyment and competence motives should be associated with greater satisfaction and felt competence in one's activity. Psychological outcome variables chosen for inclusion in the present study are self-esteem, depression, anxiety, perceived competence and perceived satisfaction. This specific set of variables is fairly representative of outcomes examined in other studies in the area of physical activity, such as Allen and Camaione (1986) and Collingwood (1972). In addition, perceptions of competence and satisfaction are direct measures of how participants view the outcome of their individual participation in physical activity.

Finally, on a more exploratory level, the study examines relations between level of participation variables and psychological outcomes that are often associated with physical activity. Review of prior studies using nonclinical groups suggests that higher levels of activity will most likely be associated with variables closely tied to physical activity, such as body-related esteem, whereas general mental health may be less affected. These exploratory analyses thus attempt to further illuminate the relations between physical activity levels and mental health in a general adult population.

## Methods

### *Subjects and procedure*

The sample consists of 376 adults (241 women, and 134 men, one subject sex unknown) with a mean age of 39 who were drawn from the population of all employees of a mid-sized eastern university and an associated university hospital. Men ranged in age from 20 to 70 years with a mean age of 41. Women ranged in age from 18 to 75 years with a mean age of 39. Of the men participating in the study, 14% had been engaged in their primary activity less than 2 years, 24% had participated for 2-5 years, 11% for 5-10 years and 50% for over 10 years. Of the women participating in the study, 34% had participated in their primary activity for less than 2 years, 21% had participated for 2-5 years, 17% for 5-10 years and 27% for over 10 years. No students were included as subjects in this study. Participants were recruited by sending the survey to two thousand persons whose names were randomly selected from an employee mailing directory of over ten thousand total employees. Questionnaires were distributed and returned in a one-time mailing through the university intramural mail system. The rate of return was calculated by subtracting the average employment turnover rate at the university (10%) from 2000 and then dividing the number of questionnaires returned by 1800. The turnover rate was used in the calculation to account for those persons who had left the university, and thus did not receive the mailing. The questionnaires were also sent out in late summer, just before yearly updates to the employee database were made, so adding in the employee turnover rate in the return rate helped to correct for errors in the employee database. The rate of return was 20.8%, which is average for mailed survey methodologies using no follow-up or incentive for return. Weisberg and Bowen (1977) report a typical response rate of 10-50% for similar surveys. Participants represent all those who fully completed and returned the survey. Subjects remained totally anonymous.

### *Measures*

(a) *The Motivation for Physical Activities Measure (MPAM)*. This is a 23-item questionnaire measuring participation motivation in the domain of physical activity. Subjects were asked to indicate on a five-point Likert scale the degree to which each motive was personally true for them with respect to their primary physical activity. The MPAM emerged from two pilot studies, from which a preliminary survey was constructed that assessed three types of reasons for engaging in physical activities: interest/enjoyment, competence, and body-related. Subsequently, in a sample of

150 college students this scale was subjected to a factor analysis using an oblique (promax) rotation to allow for correlated but independent factors. A three-factor solution resulted. The first factor was a competence factor (eigenvalue = 7.33) composed of seven motives relating to skill development, competition, and challenge. The second factor was a body-related one (eigenvalue = 4.96), composed of 10 items relating to desires to improve physical appearance and fitness. The last factor was an interest/enjoyment factor (eigenvalue = 1.65), composed of 6 items related to fun and enjoyment. Cronbach alpha coefficients were .92, .87, and .88 for these three factors, respectively.

In the present study, the MPAM was also subjected to a factor analysis, oblique (promax) rotation, to confirm the factor structure found in the pilot studies. The same three factors emerged from this analysis: A body-related factor (eigenvalue = 7.17) composed of the same 10 items mentioned above; a competence factor (eigenvalue = 5.62), composed of the same 7 items mentioned above; and an interest/enjoyment factor (eigenvalue = 1.87), composed of the same 6 items mentioned above. Cronbach alpha coefficients for the factors were .90, .91, .91 for these factors respectively. The percent of variance explained by each factor was 31% for the body-related factor; 24% for the competence factor; and 8% for the intrinsic factor. Table 1 presents the results of this factor analysis. Correlations between factors were also calculated. Interest/enjoyment was significantly correlated ( $r = .60$ ,  $p < .01$ ) with competence motivation as expected, but was unrelated to body-related motivation ( $r = -.01$ , n.s.). Competence motivation was also uncorrelated with body-related motivation ( $r = .09$ , n.s.).

A case could be made for combining the interest/enjoyment and competence subscales, due to the high correlation between these factors, and the theoretical relation of both of these variables to intrinsic motivation (Deci and Ryan, 1985). However, since these two factors were empirically separable and have been theoretically and operationally distinguished in past studies (Deci and Ryan, 1985; Frederick & Ryan, in press), it was decided to keep each of these factors as separate subscales in analyses.

(b) *Participation Measure.* Four items measured subjects' levels and intensity of participation in their primary physical activity. These items assessed information about number of hours of activity participation per week, as well as number of days per week that subjects engaged in that activity. In addition, each person received a metabolic equivalency score (MET score) for their primary physical activity, based upon a rating chart by Fisher and Jensen (1990). The MET score is one way to assess the average energy expenditure of various activities, and is expressed in



Table 1  
Factor Analysis of the Motivation for Physical Activity Measure (MPAM)

	Factor 1	Factor 2	Factor 3
<i><u>Body-related factor (eigenvalue = 7.17)</u></i>			
Because I want to be physically fit.	<u>.73</u>	.08	-.16
Because I want to lose or maintain weight.	<u>.77</u>	-.13	.01
Because I want to better cope with stress.	<u>.64</u>	-.11	.24
Because I want to improve my appearance	<u>.89</u>	-.02	-.03
Because I want to have more energy.	<u>.80</u>	-.04	.03
Because I want to define my muscles.	<u>.60</u>	.34	-.11
Because I want to be attractive to others.	<u>.84</u>	-.03	.01
Because I want to improve my body shape.	<u>.86</u>	.03	.01
Because I will feel ugly if I don't	<u>.47</u>	.09	-.09
Because I want to improve my cardio fitness	<u>.65</u>	-.03	-.02
<i><u>Competence factor (eigenvalue = 5.62)</u></i>			
Because I want to get better at my activity.	.07	<u>.81</u>	.06
Because I like the competition.	-.17	<u>.76</u>	-.01
Because I want to obtain new skills.	-.06	<u>.89</u>	-.05
Because I want to improve existing skills.	-.02	<u>.92</u>	-.05
Because I like the challenge.	.06	<u>.66</u>	.25
Because I want to keep up my current skill level.	.15	<u>.67</u>	.10
Because I like the excitement of participation.	.06	<u>.60</u>	.25
<i><u>Intrinsic factor (eigenvalue = 1.87)</u></i>			
Because it's fun.	-.05	.10	<u>.79</u>
Because I think it's interesting.	-.16	.28	<u>.57</u>
Because it makes me happy.	.11	.01	<u>.80</u>
Because I like to do this activity	-.07	-.02	<u>.89</u>
Because I find this activity stimulating.	.10	.17	<u>.69</u>
Because I enjoy this activity.	-.04	-.05	<u>.92</u>
<i><u>% of variance explained by each factor</u></i>			
Body related	Competence	Interest/enjoyment	
31	24	8	

Note. Scale format and instructions can be obtained from the authors.

milliliters/kilograms/minute divided by 3.5. A composite score measuring overall energy expenditure was created by multiplying the number of hours per week of participation on the primary activity by the MET score for that activity. This score, henceforth referred to as physical expenditure, thus represents the combination of intensity and number of hours of participation. A high physical expenditure score is obtained by someone in a high intensity activity who participates many hours per week. A medium score could be obtained by either participating in a high intensity activity for a small numbers of hours per week or participating in a low intensity activity for many hours per week.

A Cronbach alpha coefficient was calculated for the three independent participation items (MET score, days per week of exercise and hours per week of exercise) presented above to determine if a combined participation score would be more appropriate to use in future analyses. The energy expenditure variable was not included in this test, because it is a product of MET score and hours per week of participation. The Cronbach alpha for these three variables was found to be .16, signifying little internal reliability between the items. It was decided to retain each of the participation variables separately in subsequent analyses.

Participants were also asked to give their own perceptions of satisfaction and competence for participation in their primary physical activity. These two single-item indices were answered on a Likert scale with 1=low competence or satisfaction and 5=high competence or satisfaction. These items were included in analyses along with other variables representing psychological outcomes associated with physical activity.

(c) *Activity Groupings.* As part of the data collection process, each subject was asked to supply information about his/her primary physical activity. The primary physical activity was defined as the physical activity, sport or exercise which one participates in most frequently. Three experts in the field of health and fitness (an aerobics trainer, a nutritionist/aerobic trainer and a college football coach) were asked to sort all primary activities reported in the study into groups as to how those activities best fit together. As a result of this Q-sort technique, four activity groups were identified. They were: (a) an individual sport group, which included activities such as skiing, canoeing and tennis, (b) a fitness activity group, which included fitness improvement activities such as running and weight lifting, (c) a team sport group which included activities such as softball and basketball, and (d) an "other" group which consisted of work-related or non-sport activities, such as manual labor, housework, or gardening. To test the reliability of these categorizations, six additional naive raters were given the complete listing of activities and the four activity

classifications and were asked to place each activity in the group where they felt it belonged. For each category, the average percent of exact agreement on activity classifications across the six raters was calculated, yielding the following results: individual sport group, 90%; fitness group, 96%; team sport group, 89%; and work group, 94%. Two activity groupings had sufficient numbers of subjects to be included in the current study. They were the fitness group (n=232) and the individual sport group (n=103). The team sport (n= 26) and other activity (n=14) groups were dropped from subsequent analysis. Figure 1 contains a list of all primary physical activities reported by participants in the current study, categorized by activity group.

(d) *Multidimensional Self-Esteem Inventory (MSEI)*. The MSEI (O'Brien & Epstein, 1987) is a well-established self-esteem measure with proven reliability and validity. Of the 11 subscales in the MSEI, three were used in the present study. The scales used were body appearance self-esteem, body functioning self-esteem, and global self-esteem. Body appearance self-esteem reflects feelings of physical attractiveness or desirability. Body functioning self-esteem is a measure of self-worth based upon how well the body works and how often a person can physically engage in all the activities he/she wants to. Global self-esteem represents general feelings of self-worth. Cronbach alpha inter-item reliability coefficients for an adult population are .90 for global self-esteem, .88 for body appearance self-esteem and .90 for body functioning self-esteem. Cronbach alpha coefficients for the three subscales in the present study are .87 for global self-esteem, .87 for body appearance self-esteem and .87 for body functioning self-esteem. Test-retest reliability correlations are reported to be .87 for global self-esteem, .86 for body appearance self-esteem and .89 for body functioning self-esteem. Validity for the MSEI has been shown in a number of studies. Scales of the MSEI have been related to help-seeking behavior (Plummer, 1985); depression (Stephano, 1986); mothers' quality of attachment (Ricks, 1985) and family cohesiveness (Ryan & Lynch, 1989).

(e) *Center for Epidemiological Studies - Depression Inventory (CES-D)*. The CES-D (Radloff, 1977) is a widely used 20-item self-report measure of depression. Subjects were asked to endorse each item on a 1 to 4 point scale, with 1=rarely and 4=most of the time. The 20 items were then summed to get a total depression score. Cronbach alpha inter-item reliability scores for a white, non-clinical sample range from .84 to .85. Test-retest reliability correlations range from .48 to .67 after six weeks for both clinical and non-clinical samples. The CES-D has been shown to discriminate between psychiatric inpatient and general non-clinical samples, with the inpatient samples scoring significantly higher on the CES-D than the non-clinical samples. In addition, the CES-D was shown to correlate moderately to strongly with

Activity Groupings For All Physical Activities Included in the Present Study

Group 1: Individual Sports

Horseback Riding  
Fishing  
Martial Arts  
Bowling  
Dance  
Riflery  
Squash  
Swimming  
Bicycling  
Sailing  
Downhill Skiing

Cross Country Skiing  
Golf  
Racquetball  
Tennis  
Fencing  
Tae Kwon Do  
Canoeing  
Ice Skating  
Badminton  
Rock Climbing  
PingPong

Group 2: Fitness Activities

Walking/Hiking  
Yoga  
Jogging  
Running  
Aerobics

Weight Lifting  
Exercise Bike Riding  
Toning Exercises  
Nautilus

Group 3: Team Sports

Ultimate Frisbee  
Volleyball  
Basketball  
Football

Baseball  
Softball  
Soccer  
Ice Hockey

Group 4: Other

Gardening  
Housework

Manual Labor

Figure 1: A list of all primary physical activities categorized by activity group.

the Mailton Clinicians Rating Scale and the Raskin Rating Scale, two standard, clinical assessment tools for depression.

(f) *Taylor Manifest Anxiety Scale (TMAS)*. The TMAS (Radloff, 1977) is a 28-item, self-report measure of anxiety. In the original TMAS, subjects were asked to respond yes or no to each item as it applied to them. In the present study, the response format was replaced with a seven-point Likert scale. This modification was made in order to increase the range and variance of the TMAS. An overall anxiety score was represented as the sum of the 28 items. Retest reliability of the original scale is reported to be .88 using the Pearson product moment correlation. The inter-item reliability of the TMAS for the present sample was found to be .91 using the Cronbach alpha coefficient. The TMAS has been shown to distinguish between inpatient populations of neurotic and psychotic individuals and a non-clinical population. The scores of the non-clinical sample on the TMAS were lower than the inpatient groups. In the present sample, the TMAS correlated positively with depression, as measured by the CES-D,  $r=.68$ ,  $p<.01$ , and negatively with global self-esteem, as measured by the MSEI,  $r=-.66$ ,  $p<.01$ .

## Results

### *Effects of Activity Type and Sex on Motives*

A MANOVA was performed entering sex, activity group (sport versus fitness), and the sex by activity group interaction term as independent factors and the three participation motives as dependent variables. Significant effects were found for sex,  $F(3,318) = 14.69$ ,  $p<.001$ ; and for activity group,  $F(3,318) = 16.39$ ,  $p<.001$ . As shown in post hoc Scheffe comparisons, these activity group differences followed the predicted pattern: Interest/enjoyment and competence motives were higher for sport participants, whereas body-related motives were greater for those whose primary activity was of a fitness or exercise type. A significant sex difference was also found for body-related motivation, with females higher on this variable. This MANOVA is reported in Table 2, together with the relevant means for each independent variable.

### *Correlations of Motives with Participation Indices*

Because of the consistent differences in motivation as a function of activity type, correlations between motivational orientations and indices of participation are presented separately for sport and fitness groups. These appear in Table 3.

For sport participants, interest/enjoyment was significantly associated with number of hours of participation and the energy expenditure index that combines

Table 2

Multivariate Analysis of Variance Table with Sex and Activity Group as Factors and Participation Motives as Dependent Measures

DV: <i>Interest/Enjoyment, Competence, Body-related Motivation Between Subjects</i>			
	F	df	
Sex	14.69***	3	
Activity group	16.39***	3	
Sex*activity group	2.36+	3	
Error		318	

  

DV: <i>Mean Scores of Independent Variables for Each Dependent Variable</i>	Intrinsic motivation	Competence motivation	Body-related motivation
Men (n = 108)	3.65	2.54	2.95 <sup>b</sup>
Women (n = 227)	3.44	2.41	3.50
Indiv. sport (n = 103)	3.89 <sup>a</sup>	2.90 <sup>a</sup>	3.00 <sup>a</sup>
Fitness group (n = 232)	3.46	2.27	3.44
Men indiv. sport	4.00	3.10	2.68
Men fitness	3.15	2.25	3.09
Women indiv. sport	3.82	2.77	3.22
Women fitness	3.59	2.28	3.59

\*\*\*  $p < .001$

+  $p < .10$  approached sign.

<sup>a</sup> signifies significant mean difference for activity group,  $p < .05$ .

<sup>b</sup> signifies significant mean difference for sex,  $p < .05$ .

Table 3

Correlations Between Participation Motives, Level of Participation Variables, Psychological Outcomes, and Activity Perceptions for Individual Sport (IS; n = 103) and Fitness (FG; n = 232) Groups

	Intrinsic motivation		Competence motivation		Body-related motivation	
	FG	IS	FG	IS	FG	IS
<b>Participation indices</b>						
Met score	-.01	.01	.23**	.14	.16**	.01
Primary hours	.32**	.32**	.17**	.14	-.06	-.03
Energy expenditure	.25**	.30**	.20**	.15	.01	-.07
Days per week	.15*	-.08	.22**	.02	.15*	.39**
<b>Psychological outcomes</b>						
Body-func. self-esteem	.13	.20	.29**	.10	.01	-.09
Body-app. self-esteem	.10	.20	.11	.17	-.08	-.24*
Global self-esteem	.01	.16	-.14*	-.01	-.21**	-.29*
Anxiety	.01	-.03	.13*	.07	.23**	.25*
Depression	-.02	-.11	.03	.12	.03	.35**
<b>Activity perceptions</b>						
Perceived satisfaction	.45**	.34**	.23**	.27**	.05	-.14
Perceived competence	.25**	.22*	.27**	.30**	.11	.12

\* p &lt; .05

\*\* p &lt; .01

both hours and MET ratings. Body-related motivation was found to correlate with days per week of exercise. Competence motivation was unrelated to participation indices among sport participants.

For the fitness group, interest/enjoyment correlated positively with primary activity hours, days per week of exercise and energy expenditure. Competence motivation correlated positively with MET score, primary activity hours, days per week of exercise, and energy expenditure. Body-related motivation correlated positively with MET score and days per week of exercise.

### *Correlations Between Motives and Psychological Outcomes*

As with the participation indices, zero-order correlations between motives and psychological outcomes were calculated separately for sport participants and subjects whose primary activity was exercise- or fitness-related. Table 3 also contains these correlations.

For the individual sport group, interest/enjoyment and competence motives were significantly and positively associated with perceived satisfaction and perceived competence, but not with mental health or esteem-relevant variables. Body-related motivation correlated negatively with body appearance self-esteem and global self-esteem. Body-related motivation was also positively associated with anxiety and depression.

For fitness and exercise participants, interest/enjoyment correlated significantly and positively with perceived satisfaction, and perceived competence. Competence motivation correlated positively with body functioning self-esteem, perceived satisfaction and perceived competence. However, competence motives were also associated with lower global self-esteem and higher anxiety for fitness participants. Finally, body-related motivation was associated with anxiety and lower global self-esteem in the fitness group.

### *Correlations Between Level of Participation and Psychological Outcomes by Activity Group*

An exploratory part of the present study was an examination of the relationship between participation indices and psychological outcomes. These correlations are presented in Table 4 separately for each activity group.

For the sport group, MET score correlated positively with body functioning self-esteem and correlated negatively with depression. Hours per week of participation and the energy expenditure index correlated positively with body functioning self-esteem. Finally, days per week of exercise was positively associated with perceived competence.

For the fitness group, MET score was correlated positively with body functioning self-esteem and perceived competence. Hours per week of activity correlated positively with perceived competence and perceived satisfaction and negatively with anxiety. The energy expenditure index (hours x MET) correlated positively with body functioning self-esteem, perceived satisfaction, and perceived competence, and negatively with anxiety. Days per week of exercise correlated positively with body functioning self-esteem, body appearance self-esteem, perceived satisfaction and perceived competence.



Table 4

Correlations Between Level of Participation Variables, Psychological Outcomes, and Activity Perceptions for the Individual Sport Group (IS; n = 103) and the Fitness Group (FG; n = 232)

	MET score		Primary hours		Energy expenditure		Days per week	
	FG	IS	FG	IS	FG	IS	FG	IS
Body-func.self-esteem	.33**	.36**	.10	.26*	.18**	.26*	.26**	.19
Body-app. self-esteem	.08	.14	-.02	.05	.01	.06	.16**	-.08
Global self-esteem	.04	.15	.06	.14	.04	.12	.04	-.02
Anxiety	-.09	-.18	-.15*	.003	-.14*	.02	-.05	-.09
Depression	.01	-.19*	-.07	.07	-.02	.06	-.13	.03
Perceived satisfaction	.10	.20	.16**	.19	.17**	.21	.15*	.04
Perceived competence	.26**	.15	.16**	-.06	.23**	-.05	.24**	.24*

\* p < .05

\*\* p < .01

## Discussion

The focus of the current study was on factors that motivate an individual's participation in a primary physical activity. Our central hypothesis was that motivations differ by type of activity and we specifically focused on the differences between sport- and fitness-oriented activities. A review of prior research suggested the existence of such differences, but studies tended to focus on sex differences in motivation, on motives pertaining to a particular type of physical activity, or did not differentiate between varied types of activity (Biddle & Bailey, 1985; Mathes & Battista, 1985).

Results revealed that motivational orientation for physical activity did systematically differ as a function of activity type. Individual sports were characterized to a greater degree by interest/enjoyment and competence motivation than were fitness activities, whereas fitness activities were associated with higher levels of body-related motivation. Individual sport participants seem to focus upon aspects of the task itself as a reason for participation, which is characteristic of an intrinsically

motivated orientation. On the other hand, fitness group participants were more likely to have an instrumental focus concerning attractiveness and fitness.

Consistent with our prediction, body-related concerns were a more salient participation motive for women compared to men. This was anticipated insofar as cultural pressures regarding appearance appear to be greater for women than for men. Competence motives were expected to be higher for men versus women. However, sex of participant was not directly predictive of either competence motivation or interest/enjoyment. An intriguing, but unpredicted, interaction suggested that male sport participants are particularly high in interest/enjoyment motivation whereas their male fitness counterparts are quite low.

These findings suggest that intrinsic/extrinsic motivational approaches in sport are influenced by sex of participant and activity type. This intrinsic/extrinsic distinction is particularly relevant in the area of sport and exercise. In controlled studies, intrinsic motivation has been associated with continued activity participation and greater task enjoyment, while extrinsic motivation is associated with lower levels of freely chosen participation and lower task enjoyment (Orlick & Mosher, 1978; Deci & Ryan, 1985). Ryan and Connell (1989) further argue that extrinsically motivated activities can vary in their relative autonomy. Thus, body related motivation could be reflective of a strong personal value such as health maintenance, which could be considered relatively autonomous in nature. However, body related motivation could also be experienced as a strong social pressure, having a more external locus of causality (deCharms, 1968).

Because our focus was on individual sports and exercise activities, we created a measure of motivation that did not assess social motives for participation, such as being with others, affiliation, or team spirit. Social motives can undoubtedly apply to many "individual" activities such as aerobics or tennis, but were less applicable to others such as exercise-bike riding or running, and therefore they were simply not addressed in our assessment. Social motives have been the source of many of the sex difference findings in prior studies.

Another aspect of this study was the examination of how differing motives function to foster levels of participation and psychological outcomes that are often associated with physical activity. All three motivational dimensions were predictive of days per week of participation in the fitness group, whereas only body-related motives predicted this frequency variable for sport participants. This may be due to the fact that many sports cannot be scheduled in the regular way most fitness activities can, which results in the lack of relation between motives and frequency. However, number of hours of participation was related to interest/enjoyment for both

fitness and sport groups, which speaks to its importance in promoting physical activity. Finally it appears that competence motivation was generally a better predictor of participation levels in the fitness and exercise domain, despite the fact that the mean level of competence motivation is lower in this group. This suggests that a focus on skill development and challenge, though more typical in sport activities, may play an important dynamic role in maintaining one's fitness participation.

Generally speaking the relations between level of participation and psychological outcomes tended to occur only on variables closely tied to feelings of physical fitness, such as body functioning self-esteem. Overall, these findings are consistent with prior studies of nonclinical adult samples where levels of physical activity do not appear to have significant impact on mental health outcomes such as depression or anxiety (Stern & Cleary, 1982; King et al, 1989). It should be noted that variables related to mental health in the clinical literature are quite diverse and heterogeneous, such that physical activity levels, if influential, could at best represent only a small portion of the variance in such outcomes. On the other hand, body-related motivation, was associated with several negative psychological indicators, such as anxiety and lower self-esteem in fitness activity participants, and anxiety, depression, and lower global and body appearance self-esteem among sport participants. These findings suggest that a focus upon external attributes such as appearance and body shape rather than task-related attributes is not associated with, and may not conduce toward, improved mental health.

Interest/enjoyment and competence motives were positively correlated with individuals' perceived satisfaction and competence in physical activities. Although not mental health outcomes, these variables are important, since satisfaction and perceived competence play significant roles in maintaining one's continuing motivation in physical activities (McAuley et al., 1991; Vallerand & Reid, 1990).

A number of limitations need to be mentioned in the context of interpretation. First and foremost is the fact that this research is both correlational and self-report based. Causal inferences are therefore speculative. Second, although we differentiated two types of activities, further differentiations within these categories would undoubtedly be possible, and might result in greater clarity concerning motivational dynamics. Additionally, the return rate for the mailed surveyed was less than optimal. Although the current sample includes a wide range of subject ages, its representativeness with respect to the general population of adult sports and exercise participants is unknown. Finally, we focused exclusively on subjects' primary physical activity. Influences of other activities or lifestyle factors were not assessed

and thus represent considerable background noise for our analyses.

Despite its limitations, the current study did show that motivation differs as a function of the type of physical activity in which one is engaged. Sport participation appears to be motivated more by task-involving aspects of the activity, whereas fitness participation is more likely to be accompanied by body- and appearance-related motives. In addition, these motives related differentially both to levels of participation and to psychological variables often associated with physical activity. The findings underscore the importance of considering both type of activity and the motives energizing participation in studies of sport and exercise.

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