

A STUDY OF PARTICIPATION MOTIVATION OF UNIVERSITY STUDENT AND PHYSICAL ACTIVITY STAGES OF CHANGE

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ABSTRACT

The purpose of this study was to assess and examine the Participation motives of university students for physical activity as a function of stages of change. It was hypothesized that Motives may vary as a function of stages of change. For this purpose, Two hundred and Ninety eight students from a Maharshi Mahesh Yogi Vedic Vishwavidalaya, Jabalpur (M. P.) were invited to participate in the study. Two hundred and eight students initiated the survey, but only 153 (100 male and 53 female) students completed the questionnaires. Motives For Physical Activity Measure – Revised (MPAM-R) is revised and prepared by Fredrick, Lipes, Ryan, Rubio and Sheldon (1997) questionnaire and Physical Activity Stages of Change Questionnaire (PASCQ) prepared by Marcus & Simkin (1993) were used for the purpose of data collection. To assess the participation motives and physical activity stages of change of university students, means, standard deviations, and Analysis of Variance were computed. The results of the study revealed that all the five motives were found to differ across the stages of change. There were no significant differences between students who had taken the course and those who had not on the stages of change, self-reported physical activity. There were also no differences in the self-reported physical activity levels.

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INTRODUCTION

According to physical activity among adults: one in five adults engage in high levels of activity, but one in four are largely inactive. This report, along with many others including the Surgeon General's Report that identified physical inactivity as a major health risk factor, document the magnitude of health problems that are compounded by the lack of physical activity. Daily physical activity on a moderate basis is recommended for people of all ages. (United States Department of Health and Human Services, 2003).

Adults have knowledge of traditional physical activities but have little understanding of life style physical activities. They concluded that there is a need for more education about the latest physical activity and exercise recommendations. To reach the United State's goals for healthy people, programs to promote the adoption of healthful physical activity are essential. There is a gap in the research concerning how to maximize the effectiveness of programs to foster individual exercise adherence. Several public health initiatives have begun to address this issue (Morrow et. al., 2004)

The most common motives identified are to improve or maintain health, improve physical appearance, experience enjoyment, enjoy a social experience, and obtain psychological benefits. Adherence to motives that are extrinsically motivated (i.e. improving physical appearance) may not be as enduring as those that are intrinsic (i.e. enjoyment, social, and psychological). The individual's perception of autonomy is a determining factor. If the individual perceives that he/she lacks control and free choice, then the likelihood of adherence decreases (Ryan, et al., 1997).

The changing of stages does not occur in a linear fashion, rather individuals may progress and regress through the stages. As individuals attempt to adopt change, they either succeed or fail in those efforts, affecting their cognitive and behavioral processes of change, which also causes the decisional balance to shift. For most behavioral changes, it is difficult to adhere because the sacrifices (cons) are immediate and the benefits (pros) are not. During pre-contemplation, an individual may be easily persuaded by the cons of not exercising. They may feel that exercise is too hard and not worth the effort. As one begins to exercise and progresses from preparation to action, the pros for exercising begin to outweigh the cons on the decisional balance scale. Finally, as one moves toward maintenance, one has to concentrate on the pros of exercising to keep the scale tipped in favor of the activity or one might increase their risk of relapse (Plotnikoff, Blanchard, Hotz, & Rhodes, 2001).

The purpose of this study was to assess and examine the Participation motives of university students for physical activity as a function of stages of change. It was hypothesized that Motives may vary as a function of stages of change.

METHODOLOGY

Selection of Subjects

Two hundred and Ninety eight students from a Maharshi Mahesh Yogi Vedic Vishwavidyalaya, Jabalpur (M. P.) were invited to participate in the study. Two hundred and eight students initiated the survey, but only 153 (100 male and 53 female) students completed the questionnaires. This was a 73.50 % return rate of the total subjects studying in physical education and general education faculty. The mean age of the students was 19.47 years old.

Selection of Variables

The Participation Motivation as a psychological dependent variables and stages of change as a independent variable were chosen to know the motivation of physical education and general education students studying in Maharshi Mahesh Yogi Vedic Vishwavidalaya, Jabalpur (M. P.) for the physical activity.

1. Participation Motives
2. Physical Activity Stages of Change

DESCRIPTION OF QUESTIONNAIRES

1. Motives For Physical Activity Measure – Revised : Motives For Physical Activity Measure – Revised (MPAM-R) is revised and prepared by Fredrick, Lepes, Ryan, Rubio and Sheldon (1997) questionnaire that assesses five motives for participating in physical activity. These motives are interest/enjoyment (“Because it’s fun”), competence (“Because I like engaging in activities which physically challenge me”), appearance (“Because I want to look or maintain weight so I look better”), fitness (“Because I want to be physically fit”), and social (“Because I want to be with my friends”). Scores are assessed on a seven-point Likert scale ranging from one (not at all true for me) to seven (very true for me).

2. Physical Activity Stages of Change Questionnaire (PASCQ) : The PASCQ (Marcus & Simkin, 1993) consists of four items representing the five stages of change in the trans-theoretical model. The student was asked to answer four questions which reflected their current exercise behaviors. For example, physical activity was defined and then the student was asked to reply yes or no to “I am currently physically active” and “I intend to become more physically active in the next 6 months.” Regular physical activity was then defined and the student was asked to answer yes or no to “I currently engage in regular physical activity” and “I have been regularly physically active for the past 6 months.” The answers were assessed by a scoring algorithm. For example, a student would be in the pre-contemplation stage if they answered no to the first two questions. For a student to be in the maintenance stage, they had to answer yes to questions one, three, and four. The scoring algorithm determined the students’ particular stage at the time they completed the questionnaire, however, this questionnaire has been shown to be stable over a 2-week period (Marcus & Forsyth, 2003).

ADMINISTRATION OF QUESTIONNAIRES

The university, where data were collected is located in a small city in the Madhya Pradesh. It is a liberal university that has a religious affiliation also. The enrollment is typically around 10,000 students. A majority of students live outside the campus. The largest majors on campus are Computer Science, Management, Education, yoga, Vedic science and physical education and is open from 10 AM to 6 PM. The fitness/health facility is owned and contains a 400 meters Track, two volleyball court, one handball court, badminton hall, one basketball court, weight training room, an outdoor walking/running track, and health centre etc.

Data was collected during the months of August and September, 2009 in the university campus through a personal contact with the respondents in university campus with the permission of Head of the university as well as departments. Respondents were informed of the purpose of the study. Students were assured that participation in the study was completely voluntary. Questionnaires were given one after another to the students to

access at their leisure. Individuals were informed that the questionnaires examine reasons for exercising and their motivation to exercise. Personal data information was also collected.

RESULTS AND DISCUSSION

To assess the participation motives and physical activity stages of change of university students, means, standard deviations, and Analysis of Variance were computed. and data pertaining to this have been presented in Table 1 to 10.

TABELE 1
DESCRIPTIVE STATISTICS OF DIFFERENT FACTORS OF MPAM AND PHYSICAL
ACTIVITY STAGES OF CHANGE OF UNIVERSITY STUDENTS

Variables	Mean (N=153)	SD
MPAM		
Interest/Enjoyment	4.89	1.51
Competence	4.95	1.63
Appearance	5.11	1.44
Fitness	5.75	1.25
Social	3.44	1.53
Stages of change		
Pre-Contemplation/ Contemplation (N=28)	27.64	19.95
Preparation (19)	39.21	19.44
Action (22)	45.36	17.67
Maintenance (84)	69.78	25.87

The mean scores of MPAM and physical activity physical activity by stages of change of university students have been depicted in figure 1

TABELE 2
ANALYSIS OF VARIANCE OF PHYSICAL ACTIVITY BY STAGES OF CHANGE OF
UNIVERSITY STUDENTS

Source of Variance	df	Sum of squares	Mean Square	F-ratio
Between Groups	3	46090.71	15363.57	28.73*
Within Groups	149	79666.82	534.67	

Significant at .01 level, $F_{01}(3,149)=3.91$

From Table 2 revealed that activity levels did vary across stages of change, as the obtained F-ratio of 28.73 was much high than the required $F_{01}(3,149)=3.91$ to be significant.

As the F-ratio was found to be significant, Scheffe's Test of Post-hoc comparison was applied to study the significance of differences in physical activity by four stages of change among university students and the data pertaining to this have been presented in Table 3.

TABLE 3

SIGNIFICANCE OF DIFFERENCES AMONG UNIVERSITY STUDENTS BETWEEN ORDERED PAIRED MEANS ON FOUR STAGES OF CHANGE OF PHYSICAL ACTIVITY

Mean Score of Contemplation	Mean Score of Preparation	Mean Score of Action	Mean Score of Maintenance	Paired mean difference	Confidence Interval (C.I.)
27.64	39.21			11.57*	8.63
27.64	-	45.36		17.72*	
27.64	-		69.78	42.14*	
-	39.21	45.36		6.15	
-	39.21		69.78	30.57*	
-	-	45.36	69.78	24.42*	

*Significant at .01 level,

It is quite obvious from the table 3, that there were significant differences on stages of change of physical activity among university students between contemplation – preparation followed by action and maintenance; preparation – maintenance; and action-maintenance, as the paired mean differences of 11.57, 17.72, 42.14, 30.57 and 24.42 respectively were higher than the confidence interval (C.I.) of 8.63. But the mean differences of 6.15 was not significant at 0.01 level.

TABELE 4

GROUP MEANS AND STANDARD DEVIATIONS OF PARTICIPATION MOTIVES AND STAGE OF CHANGE OF UNIVERSITY STUDENTS

Stage	Interest /Enjoyment		Competence		Appearance		Fitness		Social	
	M	SD	M	SD	M	SD	M	SD	M	SD
Contemplation (N=28)	3.48	1.78	3.33	1.76	4.13	1.93	4.49	1.65	2.76	1.51
Preparation (N=19)	4.23	1.39	4.25	1.28	5.15	1.31	5.83	1.14	2.54	1.04
Action (N=22)	4.73	1.17	4.29	1.13	5.18	1.43	5.43	1.09	3.09	1.35
Maintenance (N=84)	5.51	1.11	5.74	1.22	5.44	1.12	6.25	.79	3.91	1.50

The mean scores of five factor of participation motives by stages of change of university students have been depicted in figures 2 to 6.

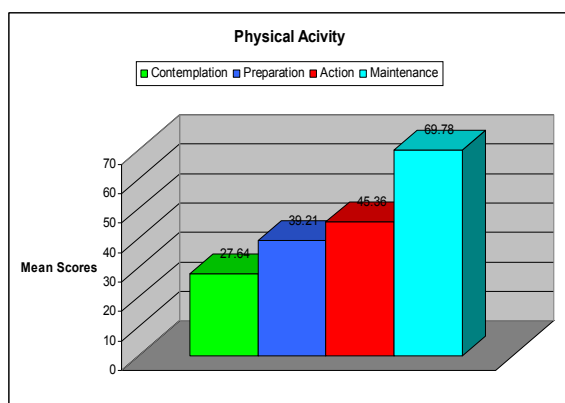


Fig. 1: Mean Scores of Physical Activity by Four Stages of Change of University Students

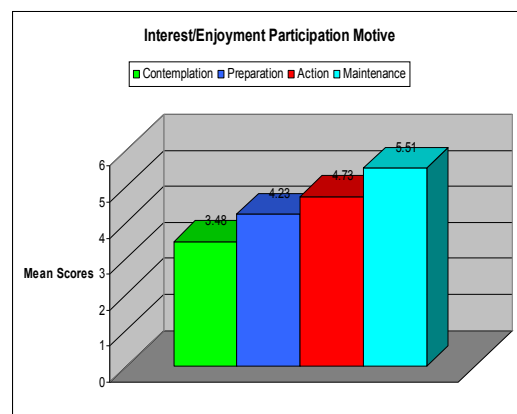


Fig. 2: Mean Scores of Interest/enjoyment Participation Motives by Four Stages of Change of University Students

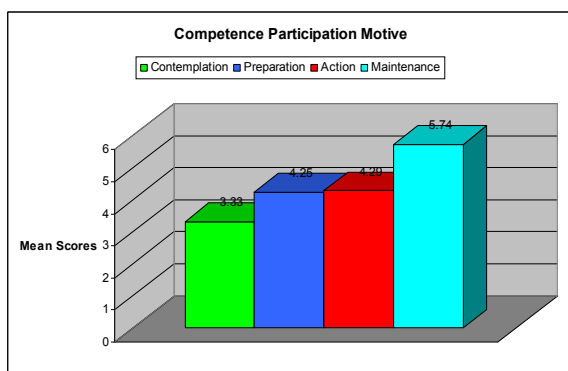


Fig. 3: Mean Scores of Competence Participation Motives by Four Stages of Change of University Students

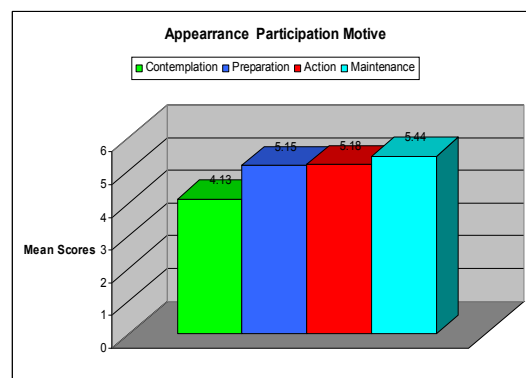


Fig. 4: Mean Scores of Appearance Participation Motives by Four Stages of Change of University Students

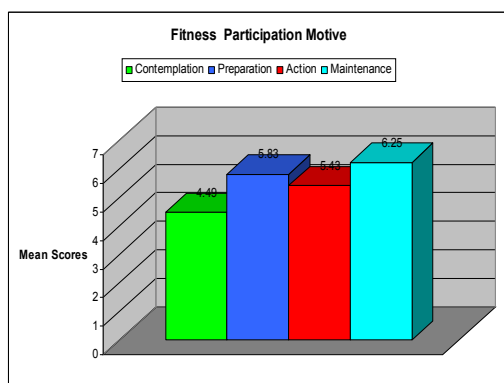


Fig. 5: Mean Scores of Fitness Participation Motives by Four Stages of Change of University Students

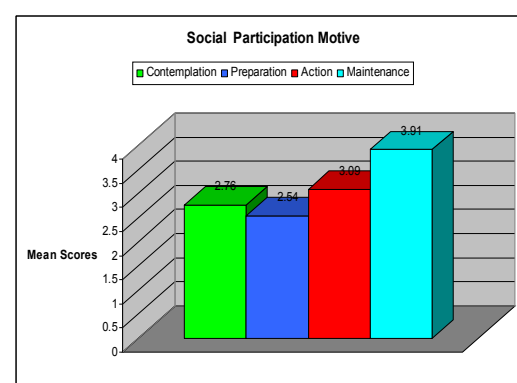


Fig. 6: Mean Scores of Social Participation Motives by Four Stages of Change of University Students

TABELE 5
ANALYSIS OF VARIANCE OF PARTICIPATION MOTIVES BY STAGES OF
CHANGE OF UNIVERSITY STUDENTS

Participation Motives	Source of Variance	df	Sum of squares	Mean Square	F-ratio
Interest/Enjoyment	Between Groups	3	1101.47	33.82	20.47*
	Within Groups	149	246.18	1.65	
Competence	Between Groups	3	156.20	52.07	31.19*
	Within Groups	149	248.69	1.67	
Appearance	Between Groups	3	34.63	11.54	6.15*
	Within Groups	149	279.51	1.88	
Fitness	Between Groups	3	65.71	21.90	18.83*
	Within Groups	149	173.35	1.16	
Social	Between Groups	3	53.84	17.95	8.79*
	Within Groups	149	304.43	2.04	

Significant at .01 level, $F_{01}(3,149)=3.91$

From Table 5, It is evident that the statistically significant difference existed among university students on five factor of participation motives i. e. interest/enjoyment, competence, appearance, fitness and social, as the obtained F-values of 20.47, 31.19, 6.15, 18.83 and 8.79 respectively were higher than the required $F_{01}(3, 149) = 3.91$.

As the F-ratio was found to be significant, Scheffe's Test of Post-hoc comparison was applied to study the significance of differences among university students on five factor of participation motives and the data pertaining to this have been presented in Table 6 to. 10.

TABLE 6
SINGNIFICANCE OF DIFFERENCES AMONG UNIVERSITY STUDENTS BETWEEN
ORDERED PAIRED MEANS ON STAGES OF CHANGE BY
INTEREST/ENJOYMENT MOTIVE

Contemplation	Preparation	Action	Maintenance	Paired mean difference	Confidence Interval (C. I.)
3.48	4.23	-	-	.75*	0.48
3.48	-	4.73	-	1.25*	
3.48	-	-	5.51	2.03*	
-	4.23	4.73	-	0.50*	
-	4.23	-	5.51	1.28*	
-	-	4.73	5.51	0.78*	

*Significant at .01 level,

It is quite obvious from the table 6, that there were significant differences on stages of change of interest/enjoyment motive among university students between contemplation – preparation followed by action and maintenance; between preparation-

action followed by maintenance; and between action- maintenance, as the paired mean differences of .75, 1.25, 2.03, .50, 1.28 and .78 respectively were higher than the confidence interval (C.I.) of 8.63

TABLE 7
SIGNIFICANCE OF DIFFERENCES AMONG UNIVERSITY STUDENTS BETWEEN ORDERED PAIRED MEANS ON STAGES OF CHANGE BY COMPETENCE MOTIVE

Contemplation	Preparation	Action	Maintenance	Paired mean difference	Confidence Interval (C. I.)
3.33	4.25	-	-	.92*	0.48
3.33	-	4.29	-	.96*	
3.33	-	-	5.74	2.41*	
-	4.25	4.29	-	.04	
-	4.25	-	5.74	1.49*	
-	-	4.29	5.74	1.45*	

*Significant at .01 level,

It is quite obvious from the table 7, that there were significant differences on stages of change of competence motive among university students between contemplation – preparation followed by action and maintenance; between preparation – maintenance; and between action- maintenance, as the paired mean differences of .92, .96, 2.41, 1.49, and 1.45 respectively were higher than the confidence interval (C.I.) of .48 But the mean differences of .04 was not significant at 0.01 level.

TABLE 8
SIGNIFICANCE OF DIFFERENCES AMONG UNIVERSITY STUDENTS BETWEEN ORDERED PAIRED MEANS ON STAGES OF CHANGE BY APPEARANCE MOTIVE

Contemplation	Preparation	Action	Maintenance	Paired mean difference	Confidence Interval (C. I.)
4.13	5.15	-	-	1.02*	0.51
4.13	-	5.18	-	1.05*	
4.13	-	-	5.44	1.31*	
-	5.15	5.18	-	0.03	
-	5.15	-	5.44	0.29	
-	-	5.18	5.44	0.26	

*Significant at .01 level,

It is quite obvious from the table 8, that there were significant differences on stages of change of appearance motive among university students between contemplation – preparation followed by action and maintenance; as the paired mean differences of 1.02, 1.05, and 1.31 respectively were higher than the confidence interval (C.I.) of .51 But the mean differences of .03, .29, and .26 were not significant at 0.01 level.

TABLE 9
SIGNIFICANCE OF DIFFERENCES AMONG UNIVERSITY STUDENTS BETWEEN
ORDERED PAIRED MEANS ON STAGES OF CHANGE BY
FITNESS MOTIVE

Contemplation	Preparation	Action	Maintenance	Paired mean difference	Confidence Interval (C. I.)
4.49	5.83	-	-	1.34*	0.41
4.49	-	5.43	-	0.94*	
4.49	-	-	6.25	1.76*	
-	5.83	5.43	-	0.40	
-	5.83	-	6.25	0.42	
-	-	5.43	6.25	0.82	

*Significant at .01 level,

It is quite obvious from the table 9, that there were significant differences on stages of change of fitness motive among university students between contemplation – preparation followed by action and maintenance; preparation – maintenance; and action-maintenance, as the paired mean differences of 1.34, .94, 1.76, .42 and .82 respectively were higher than the confidence interval (C.I.) of .41 But the mean differences of .40 was not significant at 0.01 level.

TABLE 10
SIGNIFICANCE OF DIFFERENCES AMONG UNIVERSITY STUDENTS BETWEEN
ORDERED PAIRED MEANS ON STAGES OF CHANGE BY
SOCIAL MOTIVE

Contemplation	Preparation	Action	Maintenance	Paired mean difference	Confidence Interval (C. I.)
2.76	2.54	-	-	0.22	0.53
2.76	-	3.09	-	0.33	
2.76	-	-	3.91	1.15*	
-	2.54	3.09	-	0.55*	
-	2.54	-	3.91	1.37*	
-	-	3.09	3.91	0.82*	

*Significant at .01 level

It is quite obvious from the table 10, that there were significant differences on stages of change of social motive among university students between contemplation – maintenance; preparation – action; followed by maintenance; and action- maintenance, as the paired mean differences of 1.15, .55, 1.37, and .82 respectively were higher than the confidence interval (C.I.) of .53 But the mean differences of .22 and .33 were not significant at 0.01 level.

DISCUSSION

The purpose of this study was to investigate university student's motivations to be physically active and to examine the effects of a required physical activity course on university students' levels of physical activity.

Physical Activity and Stages of Change

Students in the pre-contemplation/ contemplation stages are just considering becoming active while those in the maintenance have been active for at least 6 months. This finding is not unique, and is in agreement with previous studies (Cardinal et al., 2002). ANOVA also revealed that physical activity did vary across stages of change .

Motives and Stages of Change

Motives were hypothesized to vary as a function of stages of change, and those hypotheses were supported. Participants in the maintenance, action, and preparation stages had higher scores on decisional balance than those in pre-contemplation/contemplation, meaning they had more pros than cons.

All five motives were found to differ across the stages of change. Specifically, those students in the pre-contemplation/contemplation stages rated all motives except social as less important than the other stages. The ratings of all motives increased across the stages from pre-contemplation/contemplation to the maintenance stage.

Physical Activity, Motivation and Activity level

A secondary purpose of this study was to examine the effect of a required physical activity on students' motivation and activity levels. There were no significant differences between students who had taken the course and those who had not on the stages of change and self-reported physical activity. There was, however, a trend to suggest group differences for the motives might vary based on course participation. The follow-ups test revealed that the students who had taken the course rated interest/enjoyment, competence, and social motives higher than those who had not. This could be a positive result of the course, in that the students felt more confident to participate in physical activity and enjoyed it. There were also no differences in the self-reported physical activity levels.

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