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ATTITUDE TOWARD PHYSICAL ACTIVITY: AN INVESTIGATION OF SPORTS SCIENCE STUDENTS IN MALAYSIAN PUBLIC UNIVERSITIES

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ABSTRACT

The purpose of this study was to investigate the attitude of sports science undergraduates toward physical activity and the six perceived meaning of physical activity. The study employed the Kenyon ATPA instrument to determine the attitude toward physical activity of the respondents. A total of 639 sports science and physical education undergraduates from the six public universities completed the questionnaires. The findings of this study showed that there were significant differences in the overall attitude and the six perceived meaning toward physical activity of Malaysian public universities sports science students based on gender except for the Aesthetic and the Catharsis sub-domains. However, there was no significant difference in their overall attitude toward physical activity by their age and ethnic groups. In conclusion, the sports science or physical education major students differ in term of their overall attitude toward physical activity and perceived meaning of physical activity based on gender. Females are more inclined to participate in physical activity for health and fitness purposes besides for socialisation experience whereas the males are more likely to participate in physical activity as a way to release tension and aggression besides for socialisation. Hence gender is an important factor in determining the type of physical activity programs to organise for college students. The results of this study also indicate that enrolling in sport science courses may help to generate positive impact on attitude toward physical activity.

INTRODUCTION

The assessment of attitudes of students of all ages and adults toward physical activity, sports, and exercise is not a new phenomenon in the research in physical education (Mowatt, DePauw & Hulac, 1988). Interest in this research area has derived from the notion that if one shows positive attitude toward physical activity, sports, and exercise the individual would be inclined toward participating in active physical type programmes throughout one's lifetime. Physical educators, teachers, doctors and many others have always attempted to inform the public of the benefits of regular exercise. It is believed that through participation in physical activities and sports, individuals gain in social skills, develop desirable attitude toward physical activities and develop worthy values (Miranda, 1977).

The literature has disclosed that knowledge of the beneficial aspects of a specific behaviour is not sufficient cause to behaviour change. A more important factor in modifying behaviour is one's attitude toward behaviour (Underwood, 1989). For example, according to Fishbein and Ajzen (1983), attitude does predict behaviour quite well if the attitude measured is congruent with the behaviour to be predicted and is specific rather than general. Generally, individuals with positive attitude toward exercise will exhibit more frequent and/or more intense exercise behaviours than persons having less positive attitude toward exercise (Mowatt, DePauw & Hulac, 1988). Attitudes can be learned or acquired through experience and consequently teaching may influence them. Thus, educators and advocates of physical activity have a profound impact upon a student's attitude toward physical activity. Obviously, in order for educators and campaigners to inculcate positive attitude of the students toward physical activity, they themselves must be exemplar of the desired attitude.

STATEMENT OF PROBLEM

De Vries (1998) stressed that the development of sports science in Malaysia, has been slow but has been given a boost when Malaysia was chosen to be the host for the 16th Commonwealth Games in 1998. Its progress has been greatly accelerated since then and more public universities have offered sport science degree programmes. In school, sport science has been included as an academic subject in the Malaysian education curriculum since 1998 with the inception of the subject in two sports schools, which is Sekolah Sukan, Bukit Jalil, Kuala Lumpur and Sekolah Sukan Bandar Penawar, Johor. The number of schools offering sports science has since increased to thirty two in 2002 and another 79 schools in 2003, making it a total of 129 schools that offer sports science as an academic subject in schools (CDC, 2003).

With the new interest on sport such as sports science, it is agreed that sports science has an important role in the development of 'sport for all' and 'elite sport' (Langkawi National Sports Convention, 1996). As a result, the human resource development has become more important than ever. The question of getting the right people to the right place should be addressed with great interest. Any empirical study on issues related to sports science thus becomes important.

One significant factor in determining whether a college student will continue to exercise after leaving college is the student's attitude toward physical activity. In general, individuals with positive attitudes are expected to demonstrate favourable behaviours toward the source of attitude object. Hence, positive attitude toward physical activities are vital in effective motivation for present and future participation in physical activities.

Since sport science undergraduates will most probably join the workforce as educators or fitness professional that are expected to be the advocates of physically active lifestyles, they must themselves be exemplar of the desired attitude. To place the right people at the right place requires a study of individual attitude. The main purpose of studying attitude

is to know people's inclination, feelings, bias, ideas and convictions toward certain objects. Such knowledge will help us predict peoples' behaviour toward certain object quite accurately. And obviously, that makes our planning more adequate in relation to peoples' interest and desire. Kenyon's Inventory (Kenyon, 1968b & Tan, 1991) provide the platform to accumulate more information so that human resource training and development will be more meaningful and effective in addressing issues relating to training the right people.

THEORETICAL CONCEPT OF ATTITUDE

Definitions of Attitude

Thomas (1971) perceived attitude as "... a complex feelings, desires, fears, convictions, prejudices of other tendencies that have given set of readiness to act because of varied experience." Allport (1967) in his study of attitude stated that attitude is "... a mental and neural state of readiness, organized through experience, exerting a directive or dynamic influence upon individual's response to all objects and situations with which it is related."

Components of Attitude

Morris (1976) claimed that an important aspect of how people perceive others depends on the perception of the attitude they display and that attitude toward something has three major components, namely 1) belief about something, 2) feelings about something, and 3) a tendency to behave in certain ways toward something. These beliefs, feelings and behaviour tendencies can be positive or negative. Beliefs include facts, opinions and general knowledge. Behaviour tendencies indicate that given a certain situation, a particular behaviour will occur.

According to Leuba (1961), "Attitude like an emotion has both objective and subjective aspects." It is directed toward something and usually is affective in tone. Attitude usually involves liking or disliking something toward which it is directed.

Acquisition of Attitude

Attitudes are a part of the socialization process and these attitudes are usually consistent with the belief systems of parents, peers, and significant others. Some attitudes are taught formally as part of the educational process, while others are learned informally by identification and modelling (Morris, 1976). Attitudes, once formed, do not remain stagnant. They are constantly re-evaluated as new information is introduced. The experiences, both positive and negative, that occurs in daily lives can and do shape attitudes. However, there is a striving for consistency among the three components of attitudes - the belief (or the cognitive component), the feelings component and the behaviour tendency. When a discrepancy occurs in one or all three of these aspects of an attitude, it creates tension within the individual. One way to reduce this is to change the attitude.

Physical educators have long been interested in the attitudes of students toward physical education and the factors that contributed to the formation of these attitudes. Creating positive attitudes is important from a teaching and learning standpoint because it influences the motivational set of the learner. Acknowledging the importance of attitudes, Jerome Bruner (1965) [cited in Underwood (1989)] stated that interest must be aroused, attention sustained, and learning judged as worthwhile if the physical education class is to have a positive impact on the student. Attitudes are believed to be the primary factor that determines the consequences of physical education.

Related Literature of Attitude toward Physical Education and Activity

In a study of how attitude toward physical education and physical activity are formed and shaped, Rice (1988) found from 602 students that they enjoyed a variety of activities, with preference of team over individual sports. Barrell & Holt (1982) studied the attitude changes of physical education specialist students toward physical activity during teacher-training courses. Three groups (30 male students) of students were studied using the Kenyon Attitude Inventory. The longitudinal investigation revealed that students attitude toward physical activity over a period three years showed significant change, particularly in the vertigo and ascetic dimensions.

In order to determine the relationships among physical ability, self-perception of physical activity and attitude toward physical activity, Ikeda (1981) used the Kenyon Attitude Inventory and the Modified Version of the Physical Estimation and Attraction Scale to study 40 male and 40 female undergraduate students at the University of Maryland. Results showed that self-perception of physical activity and physical ability was not related to attitude towards physical activity. In addition female students were found to have less favourable attitude toward physical activity as compared to their male counterparts.

Stewart and Corbin (1989) found that females were considerably less active, involved fewer activities than males and avoiding competitive activities. The females also showed lack of confidence when asked to perform 'boy' activities. On the contrary, Mowatt, DePauw, & Hulac (1988) studied the attitude of 564 undergraduate and graduate students and found that on the average, females exhibited more positive attitudes towards physical activities than the males. Females were also significantly differed in indicating that maintaining good physical condition was more worth the effort than the males. Mowatt et al. concluded that attitude of students were primarily influenced by gender, year in school, activity class enrolment, and passage of time.

Payne (1976) found differences in attitude toward physical activity between sexes. Using the Kenyon Attitude Inventory, Payne studied 100 male and female students and the results indicated that there was a significant relationship between sex and attitude. The female students perceived physical activity as for health and fitness, while the male students perceived physical activity as an aesthetic experience. On the other hand, Dorfman (1968) found that female undergraduates of University of Wisconsin perceived

physical activity as aesthetic while the male students perceived physical activity as the pursuit of vertigo.

Moore (1941) studied the attitudes of college women toward physical education at the University of California and found that college women showed a highly favourable attitude toward physical activity as a means of recreation. However, the average amount of time they spent in physical activity was low. Among the reasons given for not spending more time on physical activity were lack of time due to the demands of their studies, lack of companions and outside work.

In another study, Vincent (1967b) attempted to predict the success of female students in physical education activity courses based on three factors: attitude, efficiency, and strength measurements. The attitude was evaluated by the Wear Physical Education Attitude Inventory, strength by dynamometers, and efficiency through calculation of net energy cost of an exercise bout, using a closed circuit calorimetric technique. The attitude measures were found to have the highest significance of the three factors.

Jamhaydary (1984) in his comparative study between freshman and senior college students' attitude toward required physical education courses found that the senior students' attitude was significantly more favourable than freshman students' attitude. However, the study found no significant differences in students' attitude in term of race, gender, number of physical education units completed, age or marital status.

In an attempt to examine the potential determinants of male and female adolescents' attitudes toward physical education, Luke & Sinclair (1991) found that, overall, male and female students identified the same determinants in the same order of priority. The five main determinants of attitude were identified in rank order: curriculum content, teacher behaviour, class atmosphere, student self-perceptions and facilities.

Using an instrument developed by Edgington (1968), Stewart, Green & Huelskamp (1991) found that generally, students felt the fitness, skill, and social domains are the important aspects of the physical education curriculum. This study noted that girls seemed to realize the importance of the fitness, skill, and social domains but do not value physical education as determined by their attitude. In other words, the girls know the value of the physical education but do not like to be involved in the activities. On the other hand, boys in this study seemed to like physical education significantly more than the girls but their attitudes toward the value of physical education significantly decreases with age. Boys in this study apparently found the activities in the physical education program fun, but did not necessarily feel that they contribute to the objectives of fitness, skill, cognitive, and social domains as do their female counterparts.

Carroll (1993) investigated the factors influencing ethnic minority groups' participation in sport at Manchester and found that there was significant difference in participation between males and females among Muslims, Hindus and Sikhs. Carroll concluded that religion as well as cultural factors acted as a powerful force to restrict the participation

rates of females. In more recent study, Huddleston, Mertesdorf and Araki (2002) reported that the male physical education, health and leisure services pre-professionals have higher exercise intensity than the females. The males also showed that their reasons for physical activity were more inclined for fun/enjoyment and challenge/achievement than the females. However interestingly, the females showed that they were more inclined to competition than the males.

In the local scene, Tan (1991) found that female teacher trainees could be expected to seek physical activity that would be of a social experience, health and fitness, catharsis, or as an aesthetic experience; while the male trainees would probably seek experiences related to social, catharsis, health and fitness, aesthetic and the pursuit of vertigo. The attitudes of trainees pursuing arts major were more favourable than the science major in the aesthetic sub-domain. Kee (1995) in his study on the attitudes of teacher trainees toward physical education found that generally, teacher trainees showed a favourable attitude toward physical education and there was no significant difference between the genders.

Notwithstanding the causes of attitude development and change, it is apparent that more research is needed to study the attitudes toward physical activities. Most research studies that were examined were completed in a North American context. Since few reported studies have been sighted in the local scene, therefore, it is imperative that more studies are needed to translate research similar in contexts into a Malaysian setting.

PURPOSE OF THE STUDY

The purpose of this study was to investigate the attitude of sports science students toward physical activity, and in so doing, would obtain their perceived meaning of physical activity. This study seeks to determine the differences in attitude toward physical activity in some selected independent variables of interest namely: gender, age group, ethnic group and the number of years in university.

METHODOLOGY

Respondents

Since the target population is the sports science undergraduates, a purposive sampling technique was adopted. 639 students pursuing Sport Science degree or Physical Education programme ranging from the first year to the final year students from six public universities completed the questionnaires.

Instrumentation

The questionnaire for this study was designed in two sections. The first section, gather demographic information for the study whereas the second section employed the modified version of the Kenyon Attitude toward Physical Activity (Kenyon ATPA) by Tan (1991) to gather information on participants' perceived attitude toward physical activity.

The modified version of Kenyon ATPA has been selected because it is a carefully prepared instrument focusing on the multi-dimensionality of physical activity and has been used to evaluate attitude toward physical activity both overseas and in Malaysia (Tan, 1991).

This instrument categorised the perceived attitude toward physical activity into six sub-domains as follows: a) as a social experience b) as health and fitness c) as an aesthetic experience d) as the pursuit of vertigo e) as catharsis and f) as an ascetic experience. Table 1 provides the description for each of the sub-domains.

The Kenyon ATPA has been found to be reliable and valid for measuring the attitude toward physical activity. The reliability of the six dimensions of the modified version was found to range from .67 to .93 for the male and .71 to .89 for the women was reported by Tan (1991). The reliability of the original ATPA Inventory for the six perceived meaning scores ranged from 0.72 to 0.89 (Kenyon, 1968a).

Table 1
Kenyon ATPA Sub-Domains

Sub-domains	Description
Physical activity as a Social Experience:	Participation in physical activity can meet certain social needs of individual by providing an opportunity for social intercourse to meet new people and / or strengthen existing relationship.
Physical activity for health and fitness:	Participation in physical activity can help to improve personal health and fitness.
Physical activity as catharsis:	Physical activity is assumed to provide the medium to release hostility, tension and aggression.
Physical activity as an aesthetic experience:	Some physical activities possess beautiful and certain artistic qualities, which are pleasing to the eyes and thus satisfy some aesthetic taste.
Physical activity as the pursuit of vertigo:	Physical activities can provide the means for pursuing some risk and element of thrill through the medium of direction or expose to dangerous situations with the participant usually remain in control.
Physical activity as an ascetic experience:	Physical activity is concerned with providing the avenue to aspire for high levels of achievement. However, these high levels of achievement involve long, strenuous and often painful training, as well as stiff competition with deferment of gratifications.

Data were collected using the five-point Likert scale. A respondent indicates the relative strength of agreement or disagreement on each item using the following scoring system: 1 - strongly disagree; 2 - disagree; 3 - undecided; 4 - agree; and 5 - strongly agree. Negatively worded items are scored in reverse from five to one. Each of six sub-domains is scored separately. Each individual will receive six scores, one each for each sub-domain.

DATA COLLECTION PROCEDURES

Permission was obtained from class instructors/lecturers to administer the questionnaire to their students. The participants were briefed on the inventory before it was administered to the participants. The male and female ATPA questionnaire were printed in two different sets, the male in light blue and the female pink for easy identification and to avoid answering the wrong set of questionnaires.

The administration of the questionnaires took place in one sitting at the participating institutions and was administered by the researchers and their assistants. The instrument was administered to the participants of the participating institutions over a period of two weeks.

ANALYSIS OF DATA

The t-test for independent samples was used to determine the differences in both the overall attitude toward physical activity and the six perceived meaning of physical activity between the genders.

The effect size between the two genders for each sub-domains were also calculated to determine whether the attitudinal difference between the two groups was large enough to be interpreted as educationally meaningful. Cohen (cited in Baumgartner, Strong and Hensley, 2002) suggested an effect size of less than .20 is considered small; around .50 is medium and greater than .80 is large.

One-way analysis of variance (ANOVA) was conducted to determine whether differences exist between the attitude mean scores among the students based on their age groups, ethnic groups, and their years in the universities. Tukey Post-Hoc multiple comparisons were carried out to determine the source of difference when the analysis of variance detected significant difference between the groups. The 95% confidence level ($p < .05$) was used as the criterion level for determining statistical significance in all cases.

RESULTS AND INTERPRETATIONS

Description of the Respondents

The respondents for this study were 639 undergraduates comprising of 384 (60.1%) male and 255 (39.9%) female who were pursuing Sport Science degree or Physical Education

programme in public universities. The majority of the sports science or physical education students were from the 21-23 years old (275 or 43.0%) age group followed by 30-40 year old (172 or 26.9%), 24-26 years old (108, 16.9%), 27-29 years old (46, 7.2%) under 21 years old (34, 5.3%) and over 40 years old (4, 0.6%). In term of ethnicity, the sports science and physical education courses are predominantly enrolled by the Malays (78.4%) followed by Others (10.0%), Chinese (8.6%) and the Indians (3.0%).

Respondents' Involvement in Sport Activities

From the 639 sports science students participated in this study, 623 or 97.5% indicated that they have some form of sport related experiences at least at the school level. Only 16 or 2.5% indicated that they have no sport experience in school. However, there was a sharp decline in their participation in sport activities after entering universities. Only 419 of the subjects or 67.26%, remain actively involved with sport activities in the university. Almost a third (32.74%) gave up sports after entering university. More females (45.6%) gave up sports after entering university compared to the males (24.13%).

The top five reasons given by the respondents for giving up sports /physical activities were a) heavy academic load (41.36%), b) involved with other activities (31.82%) c) no partner to do sport activities (12.27%) d) injuries (9.54%) and e) lack of facilities and equipment (8.18%).

Respondents' Attitude Toward Physical Activity

The measures of variability of the overall attitude scores and also the scores of the six sub-domains of attitude toward the perceived meaning of physical activity for both male and female were carried out using the modified version of Kenyon ATPA inventory. Due to the unequal number of items of the Kenyon ATPA inventory for the male (59 items) and female (54 items), the mean scores were first adjusted before analysing them.

The adjusted means is obtained by dividing the mean scores by the number of items for each of the sub-domain. A mean value above 3.00 is considered indicating a favourable reason for participation in physical activity and a mean value below 3.00 is considered the opposite. A mean value of 3.00 is deemed neutral. The adjusted mean and the standard deviation of the overall attitude scores and the scores of the six sub-domains of physical activity between the genders are shown in Table 2.

Table 2
Descriptive Statistics of Attitude toward Physical Activity
Ranking using Adjusted Mean- Male & Female

Sub-Domains	Male			Female		
	Adjusted means	Std. Deviation	Rank	Adjusted means	Std. Deviation	Rank
SOCIAL	3.49	.465	1	3.66	.578	1
CATHARSIS	3.40	.473	2	3.39	.407	3
VERTIGO	3.39	.555	3	3.23	.508	4
HEALTH & FITNESS	3.29	.428	4	3.61	.443	2
AESTHETIC	3.19	.451	5	3.19	.487	5
ASCETIC	3.09	.389	6	3.01	.447	6
OVERALL ATTITUDE	3.31	.291		3.36	.287	

As shown in Table 2, the male respondents demonstrated favourable overall attitude toward physical activity with a mean value of 3.31. In term of their perceived meaning of physical activity they also indicated favourable values for all the six sub-domains with Social experience (3.49) as the most likely reason for participation in physical activity, followed by Catharsis (3.40), Vertigo (3.39), Health and Fitness (3.29), Aesthetic (3.19) and Ascetic (3.09) respectively.

The female respondents also demonstrated favourable overall attitude toward physical activity with a mean value of 3.36 and in term of their perceived meaning of physical activity they too indicated favourable values for all the six sub-domains. The female sports science students placed Social experience (3.66) as the most favourable reason for participation in physical activity, followed by Health & fitness (3.61), Catharsis (3.39), Vertigo (3.23), Aesthetic (3.19) and Ascetic (3.01) respectively.

The female respondents however, seemed to demonstrate marginally better attitude toward physical activity in term of their overall mean scores as compared to their male counterparts (Females =3.36 and Males = 3.31). Although both genders indicated that socialization as the most favourable motive to participate in physical activity, the males indicate they have better scores in the catharsis, vertigo, aesthetic and ascetic sub-domains. Whereas the females have better scores in the Social and Health & Fitness sub-domains.

Results of the t-test for independent samples for the overall attitude toward physical and the six sub-domains of physical activity are presented in Table 3.

Table 3
Results of t-Test on the Overall Attitude Mean Scores
and Mean Scores of the Six Sub-Domains of Physical Activity

Sub-Domains of Physical Activity	Gender				t-value	p	d
	Male (N=384)		Female (N=255)				
	Mean	SD	Mean	SD			
Social	3.49	0.46	3.66	0.58	-4.002*	.000	0.34
Health & Fitness	3.29	0.43	3.61	0.44	-9.010*	.000	0.73
Vertigo	3.39	0.55	3.23	0.51	3.666*	.000	0.30
Aesthetic	3.19	0.45	3.19	0.48	0.022	.983	-
Catharsis	3.40	0.47	3.39	0.41	0.340	.734	-
Ascetic	3.09	0.39	3.01	0.44	2.349*	.019	0.19
Overall Attitudes	3.31	0.29	3.36	0.28	-2.206*	.028	0.18

*p < .05

As shown in Table 3, the overall attitude mean scores of the female (3.36) was higher than the male (3.31) and the t-test result revealed that there was statistically significant difference in the overall attitude of sports science students toward physical activity based on genders. Results in Table 3 also show statistically significant differences between the genders for the Social, Health & Fitness, Vertigo and Ascetic sub-domains of physical activity. The females showed higher mean scores than the males in the Social (3.66) and Health & Fitness (3.61) sub-domains whereas the males showed higher scores in the Vertigo (3.38) and Ascetic (3.09) sub-domains compared to the females. No significant difference was found for the Aesthetic and the Catharsis sub-domains of physical activity between the two groups.

However, only the Health & Fitness sub-domain has an effect size that was educationally meaningful. The effect size (d) calculated was 0.73, an index that is considered moderately high, indicating that the difference in attitude toward the Health and Fitness sub-domain of physical activity between the genders was large enough and hence educationally meaningful.

The result of ANOVA tests for the attitude differences revealed no significant difference at the .05 levels for the different age groups [$F(5, 633) = 1.66; p = .141$] and ethnic groups [$F(3, 635) = 1.025; p = .381$] of sports science students. However, the results of the ANOVA for the attitude differences among sports science students by their seniority status (different years in University) as in Table 4, show that the computed $F(3, 635) = 2.784^*$ was significant at .05 level and hence indicating that there was significant difference in the overall attitude toward Physical Activity among sports science students with different years in university.

Table 4
ANOVA of Attitude Scores of Student Groups
with Seniority Status (Different Years) in University

OVERALL ATTITUDE	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.697	3	.232	2.784*	.040
Within Groups	52.964	635	.083		
Total	53.661	638			

* significant at $p < .05$

As the F ratio was significant, the Tukey-HSD multiple comparison test was conducted. It revealed significant difference of the mean attitude scores between First Year students and Third Year students. As shown in Table 5, the Third Year sports science students group has the highest mean attitude scores ($3.37 \pm .308$) followed by Second Year ($3.31 \pm .258$), Fourth Year ($3.29 \pm .240$) and First Year ($3.29 \pm .319$) respectively.

Table 5
Mean Attitude Scores of Student Groups
With Different Year in University (Seniority Status)

Years in University	N	Mean	SD
First Year (1)	152	3.29	.319
Second Year (2),	265	3.31	.258
Third Year (3)	194	3.37	.308
Fourth Year (4)	28	3.29	.240
Total	639	3.33	.290

DISCUSSION

Overall Attitude and the Perceived Meaning of Physical Activity of Sports Science Students.

The findings of this study showed that as a whole, sports science students from the various Malaysian public universities demonstrated favourable response toward physical activity. However, females indicated that they are slightly more positive or favourable toward physical activity compared to their male counterparts.

Females also showed differences in terms of their perceived meaning of physical activity. While both genders look at the opportunity for socialisation experience as their most important reason for participation in physical activity, the males indicated that physical activity as a way to release tension and aggression (catharsis) is also an important reason for involvement in physical activity. On the other hand, the females perceived physical activity for health and fitness as a more important reason for involvement in physical activity after socialisation. The males only ranked health and fitness as their fourth preference for involving in physical activity.

These findings is supported by Onifade (1983) in her studies on Nigerian students attending universities in Washington Metropolitan area that males students perceived physical activity more as social experience while the female students perceived physical activity more as for health and fitness. Similarly, Tan (1991) in her study on teachers' trainee in a Malaysian university found that both male and female trainees perceived physical activity as a social experience as the most favourable purpose for participation in physical activity.

The results in this study also showed that the both male and female sports science students have somewhat similar perception of physical activity as the pursuit of vertigo. The male sports science students ranked the pursuit of vertigo as their third preference while the female sports science students ranked the pursuit of vertigo as their fourth inclination for participation in physical activity. This finding is worthy of note especially for the female sports science students since Tan (1991) pointed out that in the Malaysian context, while the males are encouraged to be active, expressive, and strong, the females are expected to be passive, soft-spoken and self-effacing, which is part of the Malaysian culture. Hence, generally females are not encouraged to participate in rough, risky, and dangerous physical activities. The results of this study posed a challenge to the view claimed by Tan (1991).

One possible explanation for the higher rating in perception of physical activity as the pursuit of vertigo as compared with aesthetic and ascetic sub-domains is probably due to the recent development of sporting events in Malaysia. In the last decade, there has been a tremendous influx of sporting events in Malaysia. The introduction of Formula One motor racing, Powerboat and X-games (extreme games) were some of the major sporting events Malaysians have been exposed to in the last ten years. All these events, energized with the element of thrills and excitement would probably have encouraged to the favourable perception of physical activity as the pursuit of vertigo.

However, the perceived meaning of physical activity as a social experience, for health and fitness, as an avenue for release of tension and hostility, and for thrills and excitement were ranked the top four sub-domains interchangeably between the males and females. Nevertheless, both genders agreed that involvement in physical activity for aesthetic and ascetic purposes were their least favourable reasons for participation in physical activity and therefore, these two sub-domains were ranked the last two of the six sub-domains respectively by both genders. Youngen's (1972) study showed similar results that female

students perceived ascetic as the least favourable for physical activity.

Relationship between Attitude and the Independent Variables.

This study also seeks to examine the differences in attitude toward physical activity with several selected independent variables of interest namely age group, ethnic group, and the seniority status (number of years) in university.

a) Age Groups

The respondents of this study were classified into six categories of age groups: Below 21 years old, between 21-23 years old, 24-26 years old, 27-29 years old, 30-40 years old and above 40 years old. The majority of sports science students in this survey were from the 21-23 years old age group (43 %). Interestingly however, the second biggest group come from the 30 to 40 years old group (27 %). One possible explanation is that this age group most probably represent the ex-teachers that were given either half pay leave or on their own expense to pursue their further education. However, the results of ANOVA test showed that there was no significant different in the mean attitude scores toward physical activity between these six age groups. This indicates that attitude toward physical activity is not influenced by age.

b) Ethnic Groups

The respondents in this study generally come from four ethnic groups namely the Malay, Chinese, Indian and the fourth group comprising of the different indigenous people of Sabah and Sarawak and other races not classified in the first three main groups. By ethnic groups, the sports science students in this study mainly come from the Malay origin (78.4 %), followed by the group classified under 'Others' (10 %), Chinese (8.6 %) and Indian (3.0 %). This distribution in term of ethnic representative however, does not reflect the Malaysian general population. ANOVA test carried out shows no significant difference between the various ethnic groups in their attitude toward physical activity. A possible explanation for the similarity (no different) in attitude toward physical activity among the ethnic groups might be due the similar educational background that they had undergone in the Malaysian school system, which practices a common educational curriculum and policy for the whole nation.

c) Seniority Status in University

When the respondents were classified into groups based on their seniority status in the university (number of years they have been enrolled in the university), the ANOVA results show significant difference in the attitude toward physical activity among the sports science students. Further analysis using Tukey multiple comparisons revealed significant difference of the mean attitudes scores between Year One (1) students and Year Three (3) students. Students from Year Three (3) have the highest mean attitudes scores followed by Year Two (2), Year Four (4) and lastly Year One (1). This finding indicates a possibility

that enrolling in sport science courses does gradually generate a positive impact on attitude toward physical activity. Research done by Corbin & Chevrette (1974) showed positive attitude changes freshmen in response to class experiences in a physical education course.

CONCLUSIONS

This study had investigated the sports science students' attitude toward physical activity. Based on the findings of this study and the population involved, the following conclusions were drawn.

- a) Majority of the sports science students were active in sports prior to entering the university. However, there seemed to be a decline in their participations after enrolling in university. Heavy academic schedules seemed to be the most frequent reason given by these students for giving up sports involvement in campus. Hence it is important to explore ways to help them to continue their sporting involvement without jeopardizing their academic work.
- b) Students of sports science and/or physical education major tend to possess positive attitude toward physical activity. However, their mean attitude scores were not very prominent. Therefore efforts must also be made to promote physical activity in campus and in doing so, help to elevate their positive perception toward physical activity.
- c) The sports science or physical education major students differ in term of their perceived meaning of physical activity based on gender. Females are more inclined to participate in physical activity for socialisation experience and for health and fitness purposes whereas the males are more inclined to participate in physical activity for socialisation and as a way to release tension and aggression. Hence, gender is an important factor in determining the types of physical activity program to organise for college students.
- d) The results of this study also showed that there was no significant difference in the mean attitude scores toward physical activity between the six age groups. Hence it can be concluded that age is not an important factor in the attitude toward physical activity.
- e) This study also showed that there was no significant difference in the mean attitude scores toward physical activity between the four ethnic groups in Malaysia. Hence it can be concluded that ethnic group is not an influencing factor in the attitude toward physical activity.
- f) Participants grouped by their seniority status in the university (number of years they have been enrolled in the university) however, showed that they differed in their mean attitude toward physical activity. The results indicated that the senior students tend to

demonstrate more favourable attitude toward physical activity suggesting that enrolling in sport science courses may have help to gradually generate positive impact on attitude toward physical activity.

RECOMMENDATIONS

Based on the findings of this study, additional research is needed in the area of attitude toward physical activity and the implementation of physical activity programs in higher institutions of learning. The following are suggested for further research:

- a) Since the sample of this study is confined to sports science and physical education students, similar study should be conducted on other groups of student from different faculties and encompass more universities.
- b) A follow-up study is also recommended to compare the sports science students with other groups of students in term of their levels of physical activity, types of physical activity and reasons for adherence to physical activity.
- c) The findings showed that physical activity as an ascetic experience was not perceived very favourably and ranked last of the six sub-domains and hence, more research need to be carried out to find out the reasons. This is important in generating a more dynamic and determined Malaysians especially toward achievement of excellence in sports at the international level.

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