



A SURVEY OF THE PHYSICAL ACTIVITY  
BACKGROUNDS AND PRESENT  
PARTICIPATION IN AND ATTITUDES TOWARD  
SPORTS AND RECREATIONAL ACTIVITIES  
OF RESIDENT GRADUATE WOMEN STUDENTS  
AT MICHIGAN STATE UNIVERSITY

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Coralie Phillips

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## ABSTRACT

### A SURVEY OF THE PHYSICAL ACTIVITY BACKGROUNDS AND PRESENT PARTICIPATION IN AND ATTITUDES TOWARD SPORTS AND RECREATIONAL ACTIVITIES OF RESIDENT GRADUATE WOMEN STUDENTS AT MICHIGAN STATE UNIVERSITY

by Coralie Phillips

The major role played by sports and recreational activities in the lives of undergraduate college women has been substantiated in studies conducted by a number of physical educators. The present study constituted an effort to partially answer the need for a survey of graduate women students' needs and desires for physical activity.

The author carried out an investigation of the family and school sports' backgrounds, as well as the present patterns of participation and attitudes toward sports for women of eighty-four resident graduate women at Michigan State University.

A questionnaire constructed to obtain information concerning the subjects' childhood, high school, undergraduate and graduate college sports practices and preferences was administered to each of the eighty-four Owen Hall graduate women students chosen for the study. A personal interview was held between the author and subject during which the latter's responses were recorded immediately on the interview schedule.

Statistical analysis of the data included frequency and percentage tables derived for each item on the questionnaire. Rank orderings of activity choices, reasons for and against participating in sports, and similar particulars were tabulated.

In addition, selected variables were subjected to the Chi Square Test of Independence to determine whether or not activities chosen for participation and spectating had relationship to certain information concerning the subjects. Chi Square analysis revealed that no relationship existed at the .10 level of significance between the selected sets of variables.

Despite the graduate women's widely varying family and school backgrounds, common patterns were evidenced among the girls' present choices of participation and spectator sports, their reasons for and against participating, and their attitudes toward sports for women.

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By

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## CHAPTER I

### THE PROBLEM

Statement of the Problem. This study constituted a survey of past and present participation in, and present attitudes toward sports and recreational activities among resident graduate women at Michigan State University. To the author's knowledge, the study represented an initial attempt to investigate the family and educational variables which may influence the attitudes and practices of graduate women with respect to sports and recreational activities.

Need for the Study. In an effort to determine the college woman's needs and desires for physical activity, research has been conducted by educators and administrators in higher education concerned with the development of the student women's physical education program.<sup>1</sup>

Thus far, however, consideration has been given to the study of undergraduate women only, while graduate women have been largely ignored. Although their new role may necessitate a slightly modified pattern of living, nevertheless, physical activity generally remains a meaningful and desirable segment of graduate women's lives.

It was the author's intent, first of all, to show that graduate women have a desire for physical activity, and, by virtue of extensive and varied sports and recreational backgrounds, possess the skill and

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<sup>1</sup>Reference is made to these studies in Chapter II.

knowledge to participate in a diversity of these activities.

In addition, the study was proposed to discover which physical activities graduate women choose for present and future enjoyment. As the current social-recreational chairman of Owen Graduate Hall, the author plans to submit the information derived from the study to be used as a guide in setting up a recreational program to satisfy the needs of the majority of the resident graduate women at Michigan State University.

Procedures. During Fall Term, 1965, a questionnaire was constructed to investigate the past and present physical activity patterns of the resident graduate women at Michigan State University.

The questionnaire was administered by means of personal interviews with each of a chosen sample of the graduate women residents in Owen Hall. The sample was limited to women graduate students living in Owen Hall (255 of the total 1518 attending Michigan State University) and further, to only those in Owen Hall of North American Caucasian racial origin, unmarried, and between the ages of twenty-one and thirty years.

Definition of Terms. The following terms are defined for purposes of the study:

Attitude.--The selective psychological readiness with which an individual reacts toward a particular stimulus; the particular stimulus, in this study, will be the statements pertaining to women's participation in sports and recreational activities.

Resident Graduate Woman.--A woman enrolled in a graduate program of studies (Master's or Ph.D.) at Michigan State University; living in

Owen Hall at least during Fall Term, 1965 and Winter Term, 1966; of North American Caucasian racial origin, unmarried, and between twenty-one and thirty years old.

Limitations of the Study. The validity of the study was limited by the small size of the sample used, only eighty-four of the graduate women in Owen Hall, all of whom were unmarried, between the ages of twenty-one and thirty years, and of North American Caucasian racial origin. This delimitation excluded the many graduate women from foreign countries living in the same residence.

It was felt by the author that inclusion of the foreign students in the study would introduce too many diverse cultural and social factors as their family and educational backgrounds differ widely from our's.

In addition to the above limitation, the information collected from the subjects during their personal interviews was, for the most part, based upon memory of past experiences, without much time available to recall childhood, high school, and undergraduate college activities. To alleviate this situation somewhat, an extensive list of sports and recreational activities<sup>1</sup> was provided each subject as a reference to aid recall.

The lack of similar studies conducted on graduate women with which to compare data made it difficult to formulate an hypothesis to be tested.

Basic Assumption. Since the present study constituted a survey of a relatively unexplored subject, the development of an hypothesis

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<sup>1</sup>See Appendix C.

to be tested was primarily a subjective matter. The author's personal observations and experiences during two years of residence in Owen Hall, as well as those of other persons questioned, and a search of the related literature available, provided the basis for the following assumption.

In general, the author believed that certain common patterns could be found in the sports practices and attitudes toward physical activity of graduate women students, despite their widely varying family and school backgrounds. The data obtained from the questionnaire<sup>1</sup> administered to the subjects would support or contradict this basic underlying assumption.

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<sup>1</sup>See Appendix B.

## CHAPTER II

### RELATED LITERATURE

A review of the literature related to the present study was conducted to provide a basis for the development of the hypothesis to be tested, and to aid in the choice of the best research methods to be used.

College Women's Sport. Studies on college women's sport were reviewed to determine the current status of the problem. Of the several available sources on this subject, two authors provided particularly pertinent information.

Laura J. Huelster's analysis of six independent studies (20, 30, 23, 33, 36, 29) reported from 1951-57 indicates that there are certain forms of sports and dance which tend to be generally more popular among college women. The common activities listed in all of these studies among the top five included, alphabetically: bowling, golf, social dance, swimming, and tennis. Additional activities listed among the top five in at least one of these studies included: badminton, canoeing, conditioning activities, ice skating, lifesaving, riding, softball, table tennis, and volleyball.

The composite results of these studies are not surprising when viewed within the framework of the educational values which coeducational college women tend to hold most important. (25, 48)

Dr. Huelster summarizes the results of the studies cited above:

Women in coeducational institutions tend to conform in their behavior to accepted patterns of femininity. These accepted patterns in sports apparently sanction certain individual and dual activities, such as, bowling, golf, swimming, tennis, and social dance. These are activities having coeducational, social dating, and leisure time possibilities. They do not depend upon all-out effort or muscle strength or endurance for the performer's personal satisfaction, at least at the social level. (25, 52-53)

The key words in the above quotation are "conform" and "accepted patterns of femininity." There is no doubt that college students are generally inclined to conform to accepted patterns of activity, according to the norms established within and by their own peer groups; to do otherwise is often to risk possible ridicule and ostracism by one's former friends.

Concerning the college undergraduate women's spectating behavior, Dr. Huelster asserts that "A broader understanding of spectator sports events helps women to enlarge upon their identity of themselves as persons in contrast to the 'cultural image' as female spectators." (25, 51) In his study of American football, Reuel Denney states that a higher percentage of women attend football games in this country than in any other, and that their presence increases the impact of everything sexual in and around the event from the gear, such as the shoulder pads, to the star system. He points out further that although women are not expected to attend baseball games, when they do attend they are expected to understand them and to acquire at least something approaching companionship on a basis of equality with their male escorts. (13, 256)

In her comprehensive study of the middle-class married woman's participation in sports, L. E. Kratz presents several significant findings. (34) Evidence suggests that modern American women participate in sports in their identity and status as women; that men both encourage and discourage women in sports participation, affecting their

participation considerably; and that women's sports participation is related to sports' acceptance by society as appropriate activity for women. Rank ordering of participation in sports found women prefer, first of all, the sports considered most feminine; secondly, those considered most appropriate for participation; thirdly, those they believed men would think most appropriate for them; and lastly, those they think most appropriate for their daughters.

The author concluded that, on the basis of her results, women's preferences are strongly linked with the values of femininity and that the cultural concept of women's sports participation is evidenced, though not necessarily carried out in practice.

Further research conducted in this area, including studies done by Baker, (16) Ivison, (33) Swenson and Rhulman, (27) and Toogood, (28) provided no significant additional information.

Attitudes. A review of the psychological literature revealed several definitions for the word, attitude. Although these definitions were presented by various writers, the fundamental concept of what constitutes an attitude was quite similar.

Munn defines attitude as "acquired tendencies to respond positively or negatively to objects, situations, persons or ideas." (12, 100) Guilford would agree with Munn, however, he elaborates on this definition by stating that an attitude is the "mental inclination an individual has to approve or disapprove of an object or action within our social structure." (5, 223) In his description of social objects, Guilford included institutions, customs, and social groups of various kinds. (5, 223) He further states that "psychologically, an attitude involves beliefs as well as feelings, a characteristic that

distinguishes attitudes from interests." (5, 223)

Allport feels that an attitude exerts an influential force upon an individual. He defines an attitude as a "mental and neural state of readiness, exerting a directive or dynamic influence upon the individual's response to all objects and situations with which it is related." (1, 798)

According to Cantril, an attitude is ". . . a more or less permanently enduring state or readiness of mental organization which predisposes an individual to react in a characteristic way to any object or situation with which it is related." (21, 13)

Hilgard believes that an attitude implies more than simply a positive or negative decision toward something. He states that "simple preferences become organized into patterns of emotionalized preferences called attitudes . . ." (6, 128)

Ellis indicates that attitudes are quite changeable. He states that "attitudes, like meanings are extremely variable . . . belief is essentially an attitude, and . . . we recognize there are all kinds and degrees of belief . . ." (3, 68)

The previous definitions have implied that an attitude is formed through our past experiences. Smith, Bruner and White directly affirm this when they suggest that we ". . . consider an attitude to be a predisposition to experience, to be motivated with respect to and to respond to a class of objects in a certain way." (15, 7)

Doob feels an attitude involves: "(a) an implicit response, (b) which is both anticipatory and mediating in reference to patterns of overt responses, (c) which is worked by a variety of stimulus patterns as a result of previous learning or gradients of generalization,

(d) which is itself both cue and drive producing, and (e) which is considered significant in the individual's society." (22, 136)

Several fundamental principles are to be found in the previous attitude definitions. They are:

1. A person's attitude ". . . whatever else it may be, denotes a functional state of readiness which determines the organism to react in a characteristic way to certain stimuli or stimulus situations."

(26, 300)

2. A person's attitude ". . . generally depends upon the number and kinds of influences experienced by the individual . . . and his own . . . reaction following social stimulation." (18)

3. A person's attitude is ". . . an enduring organization of motivational, emotional, perceptual, and cognitive processes with respect to some aspect of the individual's world." (9, 152)

Another characteristic of attitudes that needs to be considered is common and individual attitudes.

Allport feels that ". . . one of the most significant distinctions that can be made in the entire province of attitudes . . . lies in the differences between the common attitudes and the individual attitudes." (1, 826)

Common attitudes are defined by Allport as being ". . . those attitudes which are essentially uniform owing to the operation of similar environmental and cultural conditions upon similarly constituted human beings." (1, 826) Allport also states that "Physical environment, culture, and instinct cooperate in the production of common attitudes." (1, 826-827)

Allport makes an important point in relationship to the measurement

of attitudes when he says:

If all attitudes were common attitudes, it would be possible to construct acceptable social laws, for in such a case all attitudes would be the same for all people, and human nature would thus become a constant. Since, however, common attitudes are not the only type, social laws are merely the statement of tendencies based upon the resemblance between some of the attitudes of some of the individuals within any group . . .

. . . . .

. . . It is only the common attitudes that can be measured, for measurement requires a scale, and there is no scale which does not depend upon the central tendencies and dispersions of opinions expressed by many people. To measure an attitude requires the assumption that a large population of men share the attitudes in question. (1, 827)

Krech and Crutchfield find this last point made by Allport questionable. They argue that:

Many important aspects of an attitude . . . such as direction, intensity, and importance, seem capable of being characterized in an absolute manner for an individual and not dependent upon their relation to norms established by the attitudes . . . of other people . . . (9, 209)

The following studies provided insight into the question of college women's attitudes toward physical activity: Bell, Walters, and staff; (17) Broer, Fox, and Way; (19) Geehan; (31) Hazelton and Piper; (24) Hickman; (32) Plummer; (35) and Young. (37)

The author concluded that, on the basis of information derived from the above sources, the sports preferences and attitudes of college women are largely reflected in current cultural norms, as represented by their peer groups, who prescribe and maintain patterns of conformity. As well, parental and educational influences in most cases help to shape the girls' attitudes toward, and subsequently their participation in sports.

However, evidence supporting the above conclusions has been obtained entirely from studies of undergraduate college women and can be

applied only partially to graduate women. New and different academic and social pressures confront the graduate student, frequently necessitating a modified pattern of living. Arising out of this situation may be an altered set of attitudes concerning the relative importance of certain activities in which the college woman plans to participate as a graduate student.

Research Methods. Several references provided material on research methods. Among these were: Deming; (2, 1-23) Jahoda, Deutsch, and Cook; (8, 423-462) Lazarsfeld and Rosenberg, (10, 83-93) all of which deal with questionnaire construction.

Interviewing techniques are discussed in H. H. Hyman et al., (7) and in Merton, Fiske, and Kendall. (11)

The statistical techniques employed were derived from two major sources, including Siegel, (14) and Garrett. (4)

## CHAPTER III

### METHODOLOGY

Sample. Upon receiving permission from the head resident advisor of Owen Hall, the author studied the files containing personal information on the 255 graduate women living in the residence during Fall Term, 1965. Only 104 of the total number qualified as subjects for the study by virtue of their being of North American Caucasian racial origin, unmarried, and between the ages of twenty-one and thirty years.

The original plan was to draw a random sample of 105 subjects, with the first five interviewees constituting a pretest of the questionnaire. However, since only 104 of the resident graduate women met the criteria as cited above, all of them were contacted for the study.

Early in January, 1966, an introductory letter<sup>1</sup> was placed in the mail box of each woman chosen as a subject. The letter explained the nature and importance of the study, and requested the recipient's cooperation in serving as a subject. When a positive response was received the subject was contacted by telephone and an interview was arranged. Those not returning an answer by the requested date in the letter were called on the telephone. This latter procedure, although time-consuming, proved more effective than sending a second letter to those failing to respond to the initial one.

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<sup>1</sup>See Appendix A.

Of the original total of 104 subjects contacted, eighty-four (81 percent) agreed to participate in the study. Among the reasons for declining were pressure of studies, disinterested, and moving out of the dormitory shortly. Those who acted as subjects proved to be very interested in the study, the completion of which depended largely upon their cooperation.

Interviewing Procedures. Due to the convenience of having all of the subjects and the interviewer in residence at Owen Hall, a personal interview was arranged at the convenience of the interviewee within a two-week period between February 15 and February 28, 1966. The first five interviews provided a pretest of the questionnaire, after which ambiguous questions, none of which were found, were to have been deleted from it.

The interview was held in the privacy of the subject's room. The questionnaire<sup>1</sup> was constructed so that information was obtained on impersonal, general topics as well as personal, specific ones. The questionnaire was administered in the form of an interview schedule. The information to be collected was categorized under two main headings: Sports Background, including family and school participation, and Present Patterns, including attitudes toward physical activity. Most of the questions were posed by the interviewer who immediately recorded the subject's responses on the interview schedule. A reference list of participation sports and recreational activities and a similar list of spectator sports<sup>2</sup> were provided for each subject to aid her memory

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<sup>1</sup>See Appendix B.

<sup>2</sup>See Appendix C.

of past experiences. Only one of the questions required the subject to record her answer directly onto the questionnaire. The complete interview lasted approximately thirty minutes.

Statistical Techniques. Data obtained for each subject was coded on IBM cards for purposes of analysis.

Percentage tables were constructed for each item on the questionnaire. Rank orderings of activity choices, reasons for and against participating in sports, and similar items were tabulated.

Certain parts of the data were subjected to analysis by the Chi Square Test of Independence. Garrett describes this test as a useful application of Chi Square when we wish to investigate the relationship between traits or attributes which can be classified into two or more categories. (4, 262) Tabulations are made in a contingency table, that is, a double entry or two-way table in which the possession by a group of varying degrees of two characteristics is represented. (4, 263) Garrett explains further that when the expected or independence values have been computed, the difference between the observed and expected values for each cell is found. This difference is then squared and divided in each instance by the independence value. The sum of the quotients by a certain formula gives Chi Square. (4, 264)

This testing method was applied to determine whether or not activities chosen for participation and spectating had relationship to certain information concerning the respondents. The hypothesis tested stated that no relationship exists between activities chosen by the respondents and certain family and educational variables. The foregoing hypothesis was the null hypothesis, namely, that the variables concerned were essentially unrelated or independent, and any

relationship found between them must have occurred purely by chance.

The hypothesis would be accepted as tenable at the .10 level of significance. Since the study constituted a preliminary survey concerning this topic, and because no serious consequences would result if the hypothesis was rejected, a relatively low level of significance was chosen.

## CHAPTER IV

### PRESENTATION AND ANALYSIS OF DATA

This study constituted an investigation of the family and educational variables which may influence the attitudes and preferences of resident graduate women at Michigan State University in regards to sports and recreational activities. The questionnaire administered to each of the eighty-four subjects in a personal interview included information on the family, high school, and undergraduate college background of each girl, as well as her present attitudes toward and participation in sports as a graduate student.

Following is an analysis of the data obtained from the questionnaire given to the subjects. First of all, frequency and percentage tables were developed for the total sample on each item of the questionnaire. These included rank ordering of activity choices, reasons for and against participating in sports, and similar items. In addition, Chi Square distributions of certain selected variables are presented.

#### Background Information

Family. The ages of the subjects, as of January 1st, 1966, are indicated in Table 1 on page 17. A large percentage, 60.8 percent of the total, were either twenty-two or twenty-three years old.

The hometowns of over one-half of the girls were in the Great

Lakes region, which includes the state of Michigan. Tables 2 and 3 on page 18 show the distribution of the location and population of hometowns. In regards to the latter, there is fairly equal representation for each category with the greatest number coming from cities between 100,000 and 500,000 population.

TABLE 1  
AGE OF SUBJECTS

Age in Years	Number	Percentage
21	10	11.9
22	36	42.9
23	15	17.9
24	9	10.7
25	8	9.5
26	3	3.6
27	2	2.4
28	1	1.2

Size of family, as indicated in Tables 4, 5, and 6 on page 19, was, for the most part, relatively small. Almost one-half (45.2 per cent) of the girls had no brothers; the same number had no sisters. Only twelve subjects were from families with more than two other children besides themselves.

Table 7 on page 20 is a breakdown of the sports activities in which the girls participated with their families and friends during their childhood, including elementary school activities. In regards to total frequency of participation, swimming was the most popular sport, with bicycling, bowling, ice skating, roller skating, table tennis, badminton, social dance, backyard games, and tennis following in that order. Closer analysis will show that bowling and ice skating rated highest under "occasional" participation; that backyard games

TABLE 2

## LOCATION OF HOMETOWN

Location by Area <sup>a</sup>	Number	Percentage
New England	5	6.0
Mideast	16	19.0
Southeast	5	6.0
Great Lakes	47	56.0
Plains	3	3.6
Southwest	2	2.4
Rocky Mt.	..	..
Far West	3	3.6
Canada	3	3.6

<sup>a</sup>New England - Conn., Maine, Mass., N. H., R. I., Vt.; Mideast - Del., Md., N. J., N. Y., Penn., D. of C.; Southeast - Ala., Ark., Fla., Ga., Kent., Louisa., Miss., N. C., S. C., Tenn., Virg., W. Virg.; Great Lakes - Ill., Ind., Mich., Ohio, Wisc.; Plains - Iowa, Kansas, Minn., Mo., Neb., N. D., S. D.; Southwest - Ariz., N. Mex., Okla., Texas; Rocky Mt. - Colo., Idaho, Mont., Utah, Wyoming; Far West - Alaska, Calif., Haw., Nevada, Oreg., Wash.; Canada.

TABLE 3

## POPULATION OF HOMETOWN

Population	Number	Percentage
over 1 million	13	15.5
500,000 - 999,999	4	4.8
100,000 - 499,999	22	26.2
50,000 - 99,999	12	14.3
25,000 - 49,999	8	9.5
5,000 - 24,999	18	21.4
under 5,000	7	8.3

TABLE 4

## NUMBER OF BROTHERS

Number of Brothers	Number	Percentage
0	38	45.2
1	32	38.1
2	11	13.1
3	3	3.6

TABLE 5

## NUMBER OF SISTERS

Number of Sisters	Number	Percentage
0	38	45.2
1	27	32.1
2	17	20.2
3	1	1.2
4	1	1.2

TABLE 6

## TOTAL NUMBER OF BROTHERS AND SISTERS

Total Number	Number	Percentage
0	13	15.5
1	33	39.3
2	26	31.0
3	6	7.1
4	4	4.8
5	1	1.2
6	..	..
7	1	1.2

TABLE 7

SPORTS PARTICIPATED IN WITH FAMILY AND FRIENDS  
AND FREQUENCY OF PARTICIPATION

Activity	Occas. <sup>a</sup> (few)	Mod. (4-20)	Freq. (over 20)	Instruct. <sup>b</sup>	Total
Swimming	7	8	39	22	76
Bicycling	10	9	42	..	62
Bowling	34	7	15	4	60
Ice Skating	31	7	17	4	59
Roller Skating	24	11	20	2	57
Table Tennis	21	11	21	..	53
Badminton	22	6	22	2	52
Social Dance	6	9	29	7	51
Backyard Games	20	16	13	..	49
Tennis	22	9	12	5	48
Softball	18	12	15	2	47
Boating	18	11	14	..	43
Hiking	13	9	19	..	41
Square/Folk Dance	17	11	6	4	38
Volleyball	16	8	12	1	37
Horsemanship	24	4	2	7	37
Fishing	17	8	11	..	36
Billiards	22	5	6	..	33
Canoeing	15	3	12	1	31
Basketball	8	6	11	4	29
Archery	14	2	6	7	29
Golf	13	5	5	5	28
Exercises	6	8	9	3	26
Water Skiing	15	4	6	1	26
Campcraft	4	6	14	1	25
Diving	5	6	8	5	24
Ballet	3	2	5	13	23
Skiing	12	2	2	7	23
Sailing	6	1	8	2	17
Tumbling	9	3	2	3	17
Touch Football	6	3	5	..	14
Hunting	8	2	..	..	10
Mountain Climbing	5	1	..	1	7
Field Hockey	..	1	2	..	3
Ice Hockey	..	1	1	..	2
Fencing	1	..	1	..	2
Soccer	1	..	1	..	2
Baseball	..	..	..	1	1
Riflery	..	..	1	..	1
Skin/SCUBA Diving	..	..	1	..	1
Lacrosse	1	..	..	..	1

<sup>a</sup>Number of times participated in per year.

<sup>b</sup>Formal instruction, including that from a family member.

(croquet, shuffleboard, horseshoes, and similar activities) and soft-ball had the most "moderate" participation; that bicycling, swimming, and social dance were done most "frequently"; and finally, that instruction was received by a relatively small number of girls, in swimming and ballet predominantly.

The viewing of spectator sports with the family, including television watching, is outlined in Table 8 below.

TABLE 8  
SPORTS SPECTATED WITH THE FAMILY  
AND FREQUENCY OF SPECTATING

Sport	Occas. <sup>a</sup> (few)	Mod. (4-10)	Freq. (over 10)	Total
Football	13	16	40	69
Baseball	27	14	23	64
Basketball	17	21	18	56
Swimming	20	10	5	35
Skiing	22	5	2	29
Ice Hockey	13	5	7	25
Auto Racing	19	5	..	24
Tennis	19	2	2	23
Bowling	16	6	1	23
Horse Racing	11	7	3	21
Figure Skating	15	3	3	21
Golf	9	6	5	20
Rodeos	12	4	3	19
Wrestling	10	3	5	18
Gymnastics	13	4	..	17
Roller Derby	7	3	2	12
Sailboat Racing	7	1	1	9
Water Skiing	4	1	..	5
Boxing	3	..	1	4
Track & Field	1	2	..	3
Soccer	3	..	..	3
Crew	2	..	..	2
Polo	2	..	..	2
Folk Dance	..	1	..	1
Cricket	1	..	..	1
Rugger	1	..	..	1

<sup>a</sup>Number of times watched per year.

Cumulative frequency ratings show football, baseball, and basketball well above the others in popularity. Football was watched the most "frequently," basketball the most "moderately," and baseball the most "occasionally." Following the above three sports were swimming, skiing, ice hockey, auto racing, tennis, bowling, figure skating, and golf.

A small percentage of the subjects' families belonged to a recreational or athletic club. Only sixteen indicated membership in a country club, six in a sports activity club such as bowling or social dance, three in a YMCA, one in a 4-H club, and one in a recreational center.

High School. On the whole, the high school physical education programs were found to be very limited. Nine of the girls had no physical education classes at all. Almost half of them (47.6 percent) had a four-year requirement. Most of the subjects expressed negative attitudes toward their high school physical education classes, referring particularly to poor instruction, inadequate facilities and equipment, and lack of varied and stimulating class sessions.

Table 9 below, and Table 10 on page 23 show the sizes of high schools attended and the number of years of required physical education.

TABLE 9  
SIZE OF HIGH SCHOOL

Number of Students	Frequency	Percentage
Over 1500	28	33.3
900-1499	19	22.6
375-899	29	34.5
175-374	6	7.1
Under 175	2	2.4

TABLE 10

YEARS OF REQUIRED PHYSICAL EDUCATION  
IN HIGH SCHOOL

Number of Years	Frequency	Percentage
none	9	10.7
one	7	8.3
two	16	19.0
three	12	14.3
four	40	47.6

When asked to name their first, second, and third favorite high school physical education class activities, the girls indicated a strong preference for basketball and volleyball. Softball, badminton, swimming, tumbling, and tennis followed in popularity. Note, in Table 11 on page 24, that emphasis was on team sports in high school as compared with the dominance of individual and dual sports later on in college.

As indicated in Table 12 on page 24, exactly one-half of the eighty-four subjects participated in high school intramural sports, among which basketball, softball, touch football, volleyball, and badminton were named most often. Only twenty-three girls took part in high school interschool sports. These included primarily basketball, field hockey, softball, and volleyball.

Thirty-seven of the girls joined sports clubs in high school, with twenty in Girls' Athletic Association, fifteen in the YWCA, and two in Scouting.

Concerning high school spectator sports, almost 90 percent of the girls watched both football and basketball. Of the remaining 10 percent, many attended girls' schools and were therefore not exposed to team spectator sports. Approximately one-quarter of the subjects

TABLE 11

FAVORITE HIGH SCHOOL PHYSICAL  
EDUCATION CLASS ACTIVITIES

Activity	1st Choice	2nd Choice	3rd Choice	Total
Basketball	20	15	6	41
Volleyball	19	10	11	40
Softball	5	3	4	12
Badminton	4	5	3	12
Swimming	6	4	1	11
Tumbling	5	1	3	9
Tennis	2	..	7	9
Field Hockey	3	2	2	7
Baseball	2	3	2	7
Archery	1	4	1	6
Exercises	1	3	2	6
Tramp. Tumbling	3	2	..	5
Gymnastics	1	3	1	5
Bowling	1	1	2	4
Modern Dance	..	1	3	4
Games	..	2	1	3
Square/Folk Dance	..	2	1	3
Fencing	1	1	..	2
Dance	..	2	..	2
Track & Field	..	1	1	2
Golf	..	..	2	2
Soccer	1	..	..	1
Synchr. Swimming	..	1	..	1
Curling	..	..	1	1

TABLE 12

NUMBER OF PARTICIPANTS IN HIGH SCHOOL  
INTRAMURAL AND INTERSCHOOL SPORTS

Intramural Sports		Interscholar Sports	
Total Number	Frequency	Total Number	Frequency
none	42	none	61
one	11	one	12
two	16	two	4
three	5	three	4
four	3	four	1
five	4	five	2
over five	3	over five	..

viewed both track and field and baseball. Other spectator sports mentioned occasionally included swimming, tennis, wrestling, gymnastics, field hockey, lacrosse, softball, and volleyball.

Undergraduate College. With improved physical education instruction, facilities, and equipment, and a greater opportunity for participation in sports, physical activity patterns of the subjects, for the most part, showed marked changes in college. A fairly equal distribution among different school sizes is seen in Table 13 below.

TABLE 13  
SIZE OF UNDERGRADUATE COLLEGE

Number of Students	Frequency	Percentage
Over 20,000	13	15.5
10,000-20,000	9	10.7
5,000-9,999	17	20.2
1,000-4,999	29	34.5
Under 1,000	16	19.0

Table 14 indicates that over one-half of the girls were required to take physical education for two years in college, and ten had no requirement. Five of the latter girls were physical education majors.

Table 15 on page 26 represents a distribution of the girls' undergraduate college physical education class activities. The total frequency counts show that tennis, swimming, modern dance, volleyball, bowling, archery, and golf represent those sports taken by twenty or more girls. It should be pointed out that even though volleyball and basketball were among the top ten activities, they proved to be the two activities most often taken against the girls' wishes; also, both

TABLE 14

YEARS OF REQUIRED PHYSICAL EDUCATION  
IN COLLEGE

Number of Years	Frequency	Percentage
none	10 <sup>a</sup>	11.9
one	21	25.0
two	48	57.1
three	3	3.6
four	2	2.4

<sup>a</sup>Five of this number were Physical Education majors.

TABLE 15

UNDERGRADUATE PHYSICAL EDUCATION CLASS ACTIVITIES

Activity	Required	Wanted To Take	Didn't Want To Take	Total
Tennis	2	23	3	28
Swimming	2	20	2	27
Modern Dance	6	15	4	25
Volleyball	7	12	6	25
Bowling	3	21	..	24
Basketball	7	9	6	22
Archery	4	15	2	21
Golf	2	17	1	20
Badminton	5	10	4	19
Body Mechanics	9	6	3	18
Square/Folk Dance	1	12	3	16
Field Hockey	3	5	3	11
Gymnastics	2	6	2	10
Softball	3	4	2	9
Foundations of P.E.	8	..	..	8
Social Dance	..	5	2	7
Tumbling	2	2	3	7
Fencing	..	5	..	5
Ice Skating	..	2	1	3
Canoeing	..	1	..	1
Others	3	11 <sup>a</sup>	4 <sup>b</sup>	18

<sup>a</sup>Includes: Billiards, Games, Fly & Bait Casting, Riding, Riflery, Rhythms, Sailing, Skiing, Table Tennis.

<sup>b</sup>Includes: Lacrosse, Soccer, Track & Field.

of these sports ranked third as required activities. Perhaps even more significant than the cumulative totals was how many girls chose the activity indicated because they actually wanted to take it. The highest ratings in this category were given to tennis, bowling, and swimming respectively. Body mechanics and foundations of physical education were required most often. Other activities not included in the table which were mentioned infrequently as desirable choices were billiards, games, fly and bait casting, riding, riflery, rhythms, sailing, skiing, and table tennis. Three sports taken, but not elected, were lacrosse, soccer, and track and field.

College intramural sports were participated in by thirty-two of the subjects. Of this number, only five girls named more than three sports, with the majority partaking in one activity. The most popular intramural sports were basketball, softball, and volleyball; archery, bowling, field hockey, swimming, fencing, tennis, table tennis, and touch football were mentioned by a few. Basketball, field hockey, softball, and volleyball constituted the interschool sports in which five girls, primarily physical education majors, participated.

Seven of the subjects belonged to Girls' Athletic Association and fourteen claimed membership in various sports activity clubs, such as skiing, outing, and sailing.

Table 16 on page 28 represents the recreational sports activities of the subjects as undergraduates. Swimming, bowling, tennis, and ice skating were ranked substantially higher than the remaining wide variety of activities. It should be noted that the most popular sports were those with coeducational, social dating, and leisure time possibilities. Team sports and activities not as a rule commonly available at many

schools, such as sailing, billiards, and riding, ranked lower on the list for recreational purposes.

TABLE 16  
UNDERGRADUATE RECREATIONAL ACTIVITIES

Activity	Number	Percentage
Swimming	48	57.1
Bowling	47	56.0
Tennis	32	38.1
Ice Skating	28	33.3
Bicycling	14	16.7
Hiking	13	15.5
Volleyball	12	14.3
Skiing	12	14.3
Canoeing	8	9.5
Golf	8	9.5
Badminton	7	8.3
Social Dance	7	8.3
Basketball	5	6.0
Softball	5	6.0
Boating	5	6.0
Riding	5	6.0
Billiards	4	4.8
Sailing	3	3.6
Table Tennis	3	3.6
Archery	2	2.4
Fencing	2	2.4
Field Hockey	1	1.2
Touch Football	1	1.2

As was the case in high school, football and basketball proved to be the favorite spectator sports. Table 17 on page 29 shows that well behind these two followed baseball, swimming, gymnastics, and track and field. Primarily in regards to football, a considerable number of the girls admitted that they did not really enjoy and/or understand the complicated gridiron tactics, but nevertheless felt it a social obligation to attend the games.

TABLE 17

## UNDERGRADUATE SPECTATOR SPORTS

Sport	Number	Percentage
Football	67	79.8
Basketball	62	73.8
Baseball	18	21.4
Swimming	15	17.9
Gymnastics	11	13.1
Track & Field	10	11.9
Ice Hockey	9	10.7
Wrestling	5	6.0
Tennis	2	2.4
Lacrosse	2	2.4
Fencing	1	1.2
Volleyball	1	1.2
Rugger	1	1.2
Soccer	1	1.2

Undergraduate extracurricular activities engaged in are presented below in Table 18. The highest total was found among clubs, associations, and societies. On the whole, the eighty-four future graduate students involved in the study were fairly active in campus affairs as undergraduates.

TABLE 18

## UNDERGRADUATE EXTRACURRICULAR ACTIVITIES

Activity	Number	Percentage
Clubs	53	63.1
Other <sup>a</sup>	45	53.6
Honoraries	35	41.7
Student Government	28	33.3
Sorority	28	33.3
Dormitory officer or counsellor	18	21.4

<sup>a</sup>Includes: choir, student paper, band.

## Present Patterns

Graduate College. Table 19 on page 31 shows that the eighty-four girls represented a total of thirty-five areas of graduate work, under six major fields of study. Seventy-seven of the girls were currently pursuing a Master's degree while the remaining seven were working toward a Ph.D. Just over one-half of the group, forty-seven girls, had graduate assistantships involving an average of fifteen hours of work per week. As a result, these girls usually carried between six and nine credits per term, while most of those without assistantships carried twelve credits. Of the forty-seven girls with graduate assistantships, thirty-five were in teaching, five in research, four in vocational rehabilitation (Speech and Hearing Science), and one each in research and teaching combined, library, and speech therapy.

Table 20 on page 32 indicates the future careers chosen by the girls upon completion of their graduate studies. The three levels of teaching combined attracted fifty-nine, or approximately seventy per cent, of the subjects; college teaching ranked considerably above all other professions.

Only fourteen of the girls engaged in any extracurricular activities at graduate school. Among those mentioned were church choir, sorority, and student government. An even smaller number, eight of the girls, held outside jobs, such as secretarial, editorial, and semi-professional singing. These low figures were not unexpected considering the heavy academic load being carried by most of the girls, and the many hours committed to assistantship work for some of them.

TABLE 19

## AREAS OF GRADUATE STUDY

Area of Study	Number	Percentage
Arts and Letters	21	25.0
Eng. Lit.	8	9.5
French	3	3.6
Music	3	3.6
Art Practice	2	2.4
History	2	2.4
Art History	1	1.2
Eng. Writing	1	1.2
Spanish	1	1.2
Natural Sciences	18	21.4
Math	8	9.5
Chemistry	5	6.0
Biochemistry	1	1.2
Biophysics	1	1.2
Botany	1	1.2
Microbiology	1	1.2
General Science	1	1.2
Education	13	15.5
Physical	4	4.8
Secondary	3	3.6
Elementary	1	1.2
Health	1	1.2
International	1	1.2
Psychology	1	1.2
Reading	1	1.2
Special	1	1.2
Home Economics	13	15.5
Textiles & Clothing	5	6.0
Home Mgt. & Child Dev't.	4	4.8
Foods & Nutrition	2	2.4
Education	1	1.2
Institution Admin.	1	1.2
Social Sciences	10	11.9
Social Work	4	4.8
Political Science	3	3.6
Anthropology	2	2.4
Sociology	1	1.2
Communication Arts	9	10.7
Speech & Hearing Science	7	8.3
Television & Radio	1	1.2
Theatre	1	1.2

TABLE 20

## PROBABLE FUTURE CAREERS

Career	Number	Percentage
College Teaching	34	40.5
High School Teaching	18	21.4
Research/Business	10	11.9
Elem. School Teaching	7	8.3
Hospital Therapy	4	4.8
Social Work	4	4.8
Communication Arts	3	3.6
Peace Corps	2	2.4
Housewife	2	2.4

The subjects' sports activities and their participation frequencies during the past year are presented in Table 21 on page 33. In descending order of popularity were swimming, social dance, bowling, table tennis, hiking, exercising, bicycling, billiards, boating, ice skating, tennis, badminton, and so on down the list. With reference to the frequency columns, a large majority of the activities were engaged in with boys and girls together. Exercises were done most often "occasionally alone," "moderately/frequently alone," and "moderately/frequently with girls." Social dance far outnumbered the rest of the activities under "occasionally with boys," and "moderately/frequently with boys." Swimming ranked highest for "occasionally with girls," and "moderately/frequently in mixed company." Bowling, table tennis and square/folk dance were the favorites done "occasionally with both boys and girls."

The sports activities spectated, and with whom and how often they were watched during the past year, are indicated in Table 22 on page 34. Once again football ranked highest, with only four of the girls not naming it. According to the usual pattern, basketball and

TABLE 21

## PARTICIPATION SPORTS DURING PAST YEAR

Sport	Occs* A	Occs B	Occs G	Occs BG	M/F* A	M/F B	M/F G	M/F BG	Total
Swimming	1	..	10	3	2	2	5	39	72
Social Dance	..	24	..	..	..	47	..	1	72
Bowling	..	11	7	23	..	3	..	13	57
Table Tennis	..	4	6	21	..	3	2	14	50
Hiking	..	3	4	10	9	5	1	14	46
Exercises	8	..	7	1	17	..	12	..	45
Bicycling	3	..	7	5	17	..	4	8	44
Billiards	..	13	3	16	..	4	..	3	39
Boating	1	3	..	17	1	2	1	9	34
Ice Skating	..	5	8	12	..	2	1	6	34
Tennis	..	3	8	13	..	..	4	4	32
Badminton	..	1	6	14	..	1	2	5	29
Backyard Games	..	3	2	16	..	1	..	6	28
Golf	..	5	5	6	1	1	4	4	26
Canoeing	1	4	2	10	..	3	1	4	25
Square/Folk Dance	..	..	1	19	..	1	..	4	25
Skiing	..	2	2	14	..	..	..	2	20
Fishing	..	4	..	7	1	3	1	3	19
Riding	..	2	3	6	2	..	..	3	18
Volleyball	..	1	5	4	..	..	2	6	18
Sailing	..	3	2	6	1	1	..	4	17
Softball	..	..	1	8	..	..	2	5	16
Water Skiing	..	..	4	7	..	..	..	5	16
Archery	..	1	2	2	..	..	3	4	12
Basketball	..	2	3	2	..	..	4	..	11
Touch Football	..	1	..	3	..	..	1	..	5
Fencing	..	..	..	..	..	..	1	1	2
Skin/SCUBA Diving	..	..	..	..	..	1	..	1	2
Totals	14	95	98	245	51	80	51	168	

Key: Occs. A. - Occasionally Alone; Occs. B. - Occasionally with Boys;  
 Occs. G. - Occasionally with Girls; Occs. BG. - Occasionally with  
 Boys and Girls; M/F. A. - Moderately/Frequently Alone; M/F. B. -  
 Moderately/Frequently with Boys; M/F. G. - Moderately/Frequently  
 with Girls; M/F. BG. - Moderately/Frequently with Boys and Girls.

\*Occasionally - a few times.

Moderately/Frequently - more than six times.

baseball followed football in popularity. Nearly all of the sports were spectated in mixed groups. The sports viewed most often with boys only were football, basketball, and ice hockey; with girls only, football and ice hockey.

TABLE 22  
SPECTATOR SPORTS DURING PAST YEAR

Sport	Occs A	Occs B	Occs G	Occs BG	M/F A	M/F B	M/F G	M/F BG	Total
Football	..	3	..	5	1	16	7	48	80
Basketball	..	5	2	14	..	12	2	21	56
Baseball	..	3	1	11	..	4	1	24	44
Ice Hockey	..	8	4	6	1	6	1	4	30
Swimming	2	4	3	10	3	..	2	4	28
Golf	2	1	1	2	..	3	2	9	20
Gymnastics	2	5	1	3	1	..	3	2	17
Wrestling	2	5	1	5	..	..	..	4	17
Soccer	3	1	1	2	..	1	1	1	10
Totals	11	35	14	58	6	42	19	117	

Key: See Table 21.

Although changes occurred in the subjects' sports activity patterns when they became graduate students, the modifications were concerned not so much with choices of activities, but more with amount or degree of participation in these activities. With respect to the latter, sixty-four of the subjects stated that they participated much less in sports as graduate students. Table 23 shows the reasons for this decline in activity. Lack of time and study interference were found to be the two major reasons. Only three of the girls participated more in sports now than before, and seventeen indulged in the same amount of activity as compared with their undergraduate years.

TABLE 23

## REASONS FOR NOT PARTICIPATING IN SPORTS

Reason	1st Choice	2nd Choice	3rd Choice	Total
Lack of time	40	22	8	72
Study interference	21	28	10	59
Lack of interest	7	7	10	24
Lack of interested companions	2	7	14	23
Lack of knowledge &/or skill	1	10	9	20
Transportation problem	3	3	7	13
Lack of information &/or opportunity	3	2	3	8
Laziness	3	2	1	6
Health	3	..	..	3

The girls' reasons for participating in sports, when they had the opportunity, are indicated in Table 24 below. The purpose of relaxation, fun, and enjoyment, followed by that of exercise and health were supported by a large number of the subjects.

TABLE 24

## REASONS FOR PARTICIPATING IN SPORTS

Reason	1st Choice	2nd Choice	3rd Choice	Total
Relaxation, fun, enjoyment	63	10	9	82
Exercise and health	13	35	21	69
Improve figure and posture	6	6	10	22
Occupy leisure time	..	9	12	21
Meet people	..	6	13	19
Develop new skills	..	7	10	17
My friends do	1	8	3	12
Encouragement from parents	..	1	..	1

When asked if sports participation was appropriate for graduate women, only one girl replied negatively, and even she favored

participation during the summer months. According to the findings in Table 25 below, the sports considered by the subjects to be the most appropriate for female participation were swimming, dance, ice skating, and tennis.

TABLE 25  
SPORTS CONSIDERED MOST APPROPRIATE  
FOR FEMALE PARTICIPATION

Sport	Number	Percentage
Swimming	34	40.5
Dance	20	23.8
Ice Skating	20	23.8
Tennis	16	19.0
Badminton	10	11.9
Gymnastics	10	11.9
Golf	9	10.7
Skiing	9	10.7
Archery	6	7.1
Riding	6	7.1
Volleyball	6	7.1
Bowling	5	6.0
Diving	5	6.0
Exercises	2	2.4
Fencing	2	2.4
Synchr. Swimming	2	2.4
Table Tennis	2	2.4
Water Skiing	2	2.4
Bicycling	1	1.2
Billiards	1	1.2

Named most often, in Table 26 on page 37, as least appropriate for female participation were track and field, basketball, and field hockey. Occasionally girls admitted that they considered certain sports which they enjoyed doing to be inappropriate for women. For example, ten girls chose basketball as one of their three favorite participation sports, and yet, several of these girls mentioned it as an unsuitable activity for women.

TABLE 26

SPORTS CONSIDERED LEAST APPROPRIATE  
FOR FEMALE PARTICIPATION

Sport	Number	Percentage
Track & Field	21	25.0
Basketball	16	19.0
Field Hockey	11	13.1
Soccer	10	11.9
Softball & Baseball	10	11.9
Judo	9	10.7
Lacrosse	6	7.1
Wrestling	6	7.1
Touch Football	5	6.0
Billiards	3	3.6
Sky Diving	3	3.6
Volleyball	3	3.6
Weight Training	3	3.6
Mountain Climbing	2	2.4
Roller Derby	2	2.4
Gymnastics	1	1.2

Sixty-eight percent of the girls felt sports were a good way to meet men. Ninety-four percent believed sports would be beneficial after marriage. Nearly one-half of the group cited swimming as an ideal activity for the above purposes. Other sports mentioned were, in descending order, bowling, golf, skiing, tennis, backyard games, boating, bicycling, hiking, camping, ice skating, badminton, softball, riding, social and square dance, table tennis, and billiards; in other words, the numerous individual and dual recreational activities common to our modern sports-minded society.

Only two girls indicated that neither their male nor female friends favored sports participation for women, and five girls had girl friends opposed to female participation. Both parents of two of the subjects' and four of the mothers considered sports to be undesirable for their daughters.

The girls were asked to rank their first three favorite participation sports. The complete results appear in Table 27 on page 39. According to the total number of choices made, swimming collected over twice as many votes as the next activity, bowling. Following these two were tennis, ice skating, hiking, sailing, basketball, skiing, softball, golf, badminton, and so on. Swimming was the most frequently named activity under all three of the favorite choices, first, second, and third.

The favorite participation sports indicated on page 39 were most frequently learned within the family and with friends. Table 28, page 40, represents a complete breakdown of where favorite activities were learned.

Similar rankings of favorite spectator sports appear in Table 29 on page 40. Football was well ahead of the others as first choice, with basketball the favorite second choice, and baseball the most frequent third choice. The cumulative totals show football and basketball rated considerably higher than the rest, with baseball, swimming, ice hockey, gymnastics, tennis, and golf following in that order.

### Chi Square Analysis

The second part of the data analysis presented in this chapter involves the Chi Square Test of Independence. This method of statistical analysis was carried out on certain selected variables concerning the subjects' family and school backgrounds and their present choices of sports activities. The analysis was proposed to test the hypothesis of the study which stated that: no relationship exists between sports activities chosen by the respondents and certain family and educational

TABLE 27

## FAVORITE PARTICIPATION SPORTS

Sport	1st Choice	2nd Choice	3rd Choice	Total
Swimming	25	15	9	49
Bowling	5	9	7	21
Tennis	6	3	4	13
Ice Skating	3	8	2	13
Hiking	3	5	4	12
Sailing	3	5	3	11
Basketball	5	4	1	10
Skiing	2	1	7	10
Softball	4	4	1	9
Golf	3	3	2	8
Badminton	1	3	4	8
Riding	4	3	..	7
Water Skiing	3	2	2	7
Volleyball	3	..	4	7
Bicycling	1	2	4	7
Social Dance	3	..	3	6
Table Tennis	..	3	2	5
Canoeing	2	..	2	4
Modern Dance	2	..	2	4
Folk Dance	2	..	1	3
Dance in general	1	1	1	3
Fencing	..	3	..	3
Fishing	..	2	1	3
Billiards	..	..	3	3
Archery	1	1	..	2
Field Hockey	..	1	1	2
Touch Football	..	..	2	2
Camping	1	..	..	1
Skin/SCUBA Diving	1	..	..	1
Ballet	..	1	..	1
Boating	..	1	..	1
Mountain Climbing	..	1	..	1
Roller Skating	..	1	..	1
Hunting	..	..	1	1
Square Dance	..	..	1	1
Sports Car Racing	..	..	1	1

TABLE 28

## WHERE FAVORITE PARTICIPATION SPORTS WERE LEARNED

Source of Instruction	1st Choice	2nd Choice	3rd Choice	Total
Family	19	24	24	67
Friends	11	16	16	43
Lessons	13	11	7	31
High School	11	8	10	29
College	6	8	9	23
Camp	9	4	2	15
Club	6	7	1	14
On own	5	2	5	12
Elementary School	4	2	1	7

TABLE 29

## FAVORITE SPECTATOR SPORTS

Sport	1st Choice	2nd Choice	3rd Choice	Total
Football	44	20	5	69
Basketball	18	28	7	53
Baseball	9	4	12	25
Swimming	1	5	11	17
Ice Hockey	2	5	8	15
Gymnastics	3	4	2	9
Tennis	1	2	4	7
Golf	..	1	6	7
Ice Skating	2	3	1	6
Skiing	1	..	4	5
Track & Field	..	..	3	3
Horse Racing	..	2	..	2
Auto Racing	..	1	1	2
Bowling	..	1	1	2
Crew	1	..	..	1
Soccer	1	..	..	1
Wrestling	1	..	..	1
Water Skiing	..	1	..	1
Regattas	..	..	1	1

variables. The hypothesis would be accepted as tenable at the .10 level of significance.

Chi Square analysis was conducted on the following sets of variables:

1. favorite participation sport and population of hometown.
2. favorite participation sport and number of brothers.
3. favorite participation sport and number of sisters.
4. favorite participation sport and first reason for participating in sports.
5. favorite participation sport and area of graduate study.
6. favorite spectator sport and population of hometown.
7. favorite spectator sport and number of brothers.
8. favorite spectator sport and number of sisters.
9. favorite spectator sport and area of graduate study.

All nine of the above comparisons showed no significance at the .10 level when subjected to Chi Square analysis. The closest relationship occurred between favorite spectator sport and number of brothers. The least related of the sets of variables was favorite participation sport and number of sisters. The hypothesis which predicted no relationship between any of the above sets of variables was accepted as tenable at the .10 level of significance.

## CHAPTER V

### SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

#### Summary

The major role played by sports and recreational activities in the lives of undergraduate college women has been substantiated in studies conducted by a number of physical educators.<sup>1</sup> The present study constituted an effort to partially answer the need for a survey of graduate women students' needs and desires for physical activity.

The author carried out an investigation of the family and school sports' backgrounds, as well as the present patterns of participation and attitudes towards sports for women of eighty-four resident graduate women at Michigan State University.

A questionnaire constructed to obtain information concerning the subjects' childhood, high school, undergraduate and graduate college sports practices and preferences was administered to each of the eighty-four Owen Hall graduate women students chosen for the study. A personal interview was held between the author and subject during which the latter's responses were recorded immediately on the interview schedule.

Statistical analysis of the data included frequency and percentage tables derived for each item on the questionnaire. Rank orderings of

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<sup>1</sup>See Chapter II for a review of these studies.

activity choices, reasons for and against participating in sports, and similar particulars were tabulated.

In addition, selected variables were subjected to the Chi Square Test of Independence to determine whether or not activities chosen for participation and spectating had relationship to certain information concerning the subjects. Chi Square analysis revealed that no relationship existed at the .10 level of significance between the selected sets of variables. Despite the graduate women's widely varying family and school backgrounds, common patterns were evidenced among the girls' present choices of participation and spectator sports, their reasons for and against participating, and their attitudes towards sports for women.

## Conclusions

Analysis of the results of this study has led to the following conclusions:

1. Resident Graduate women students, for the most part, indicated extensive and varied sports backgrounds.
2. Swimming was the most popular family sport, and the activity in which the greatest number of the subjects received instruction during their childhood years.
3. The following activities were among the most predominant, both in childhood participation and as the favorite activities of the girls as graduate students: badminton, bowling, hiking, ice skating, softball, swimming, and tennis.
4. The most popular spectator sports as viewed with the family, in high school, and in undergraduate and graduate college were football,

basketball, and baseball, all three of which are nation-wide favorites.

5. Football, basketball, and baseball likewise dominated the girls' choices of favorite spectator sports. Football, in particular, was ranked very highly by the subjects.

6. The girls' high school physical education programs were generally quite inadequate. Class activities, as well as intramural and interschool sports were limited mainly to the team sports of basketball and volleyball. Hence, the majority of the girls chose these two activities as their favorites in high school.

7. Very little carry-over was found between high school physical education activities and present sports activities. There was a de-emphasis on team sports as the girls reached college.

8. Undergraduate college physical education programs were much improved over high school programs, with a greater variety of activities offered and more opportunity for participation. Individual and dual activities showed dominance over team sports, which were popular in high school. Most frequently taken class activities were tennis, swimming, modern dance, volleyball, bowling, basketball, archery, golf, badminton, and body mechanics. Although basketball and volleyball accumulated high over-all frequencies, they were the two activities most often taken against the girls' wishes, and were ranked third as required activities.

9. Undergraduate recreational activities included swimming, bowling, tennis, ice skating, bicycling, hiking, volleyball, skiing, canoeing, golf, badminton, and social dance. All of these activities provided coeducational, social dating, and leisure time possibilities. In addition, the same activities were chosen by the girls as their

favorite participation sports, as the most appropriate sports activities for women, and as the best sports for purposes of meeting men and benefiting marriage.

10. Extent of participation in sports was greatly limited for most of the girls upon becoming graduate students. This was due mainly to study interference; and lack of time, interest, and interested companions. Concentration upon academic endeavours was generally felt to be essential at this stage in their lives.

11. However, when the opportunity arose, and especially during the summer months, the girls still participated considerably in those sports which were popular in undergraduate college--swimming, social dance, bowling, hiking, and table tennis. Participation was usually with boys and girls together in the above sports, or when alone, primarily in exercising, hiking, and bicycling.

12. Major reasons given by the graduate women for participating in sports included relaxation, fun, and enjoyment; exercise and health; and figure and posture improvement. The first reason is evidenced in their choices of the coeducational, social dating, and leisure time activities. The latter two reasons substantiate the popularity of such activities as exercising, hiking, and bicycling, which were often done alone.

13. A large majority of the girls indicated a preference for participating in sports rather than spectating. A concern with their own personal health and appearance, and a belief in the contributions of physical activity to these essentials were evidenced in their attitudes.

14. Even though many of the girls were unable to participate

in sports to the extent that they desired, nevertheless, all of them approved of sports participation for women, in varying amounts.

15. With the single exception of basketball, the subjects' favorite participation activities did not contradict their choices of activities most appropriate for women.

16. Likewise, the activities considered to be least appropriate for female participation were those with little or no participation nor favorite choices. The only exception to this was basketball, which ranked second as the least appropriate sport for women, and seventh as the favorite activity.

17. Favorite participation sports were most frequently learned within the family and with friends. This indicated the strong carry-over influence of the girls' childhood sports experiences.

18. The eighty-four girls interviewed in the study were found to be generally broad-minded, intellectually mature and alert, outgoing, pleasant, physically attractive, and ambitious to pursue a future career in the professions. These attributes, which characterized most of the girls, contradict a common stereotype of the predominantly academically-minded, reserved graduate woman student.

19. Despite the widely varying family and school backgrounds of the subjects, there were no significant differences between them in their choices of sports activities and reasons for participating in sports. Certain activities were found to be generally more desirable than others for both participation and spectating.

20. The resident graduate women students involved in this study indicated the need and desire for physical activity as an integral part of their present and future lives.

## Recommendations

Findings related to this study have prompted the following recommendations:

1. Inclusion of the foreign resident graduate women students as well as those of North American Caucasian origin, in a study of current physical activity interests and attitudes.
2. A more extensive study of graduate women's physical activity interests and needs, including both resident and non-resident (off-campus) students.
3. A comparison study between graduate women students and undergraduate women students attending the same school to determine if differences and changes occur in sports practices and attitudes.
4. A companion study on graduate men students, especially concerning their attitudes toward sports for women and sports after marriage.
5. Construction of an inventory to be used by graduate residences in setting up physical activity programs for their graduate women students.
6. Development of an actual sports and recreational program for graduate women students, both resident and off-campus.

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## APPENDIX A

### INTRODUCTORY LETTER TO SUBJECTS

Harry Webb  
Dept. of Sociology and Physical Education,  
Coralie Phillips  
Dept. of Physical Education

February 9, 1966.

Dear \_\_\_\_\_ :

Your name has been drawn in a random sample of the Owen Hall graduate women students for a study being conducted in the Department of Physical Education for Women.

The study will involve a personal interview of one-half hour in length, to be held within the next few weeks at a time and place convenient to you.

The purpose of the research is to determine and evaluate the graduate woman's physical activity interests and needs. As Social-Recreational Chairman of Owen Hall, I am investigating the past and present patterns of participation in sports and related activities of the women residents. The information received will then be applied to the development of a future recreational program.

Could you please complete the form below, and return it to my box by February 16th.

Your cooperation will be greatly appreciated.

Sincerely,

Coralie Phillips, Graduate Assistant,  
Dept. of Physical Education for Women

---

Name \_\_\_\_\_ Room No. \_\_\_\_\_ Phone No. \_\_\_\_\_

Are you willing to serve as a subject for the study?

Yes \_\_\_\_\_ No \_\_\_\_\_

If so, I will contact you shortly to arrange an interview.

Return to: Coralie Phillips, W705 Owen Hall

**APPENDIX B**

**SPORTS ACTIVITY QUESTIONNAIRE**

## SPORTS ACTIVITY QUESTIONNAIRE

7. List any country clubs, winter clubs, or other recreational clubs in which your family has, or did have membership. Indicate the activities in which you participate(d) and if instruction was received.

<u>Club</u>	<u>Activity(ies)</u>	<u>Instruction</u>
_____	_____	_____
_____	_____	_____

#### B. School Life

##### High School:

1. Where did you attend high school? \_\_\_\_\_
2. What was the size of the high school from which you graduated?  
 \_\_\_\_\_ 1500 and over \_\_\_\_\_ 900-1500 \_\_\_\_\_ 375-900  
 \_\_\_\_\_ 175-375 \_\_\_\_\_ under 175

3. How many years of required physical education did you have in high school? \_\_\_\_\_ 0, \_\_\_\_\_ 1, \_\_\_\_\_ 2, \_\_\_\_\_ 3, \_\_\_\_\_ 4.
4. Which high school physical education class activities did you prefer? List according to preference.

- (1) \_\_\_\_\_
- (2) \_\_\_\_\_
- (3) \_\_\_\_\_

5. Name the intramural sports in which you participated at the high school level (homeroom, noon hour, or after school).

- (1) \_\_\_\_\_ (2) \_\_\_\_\_ (3) \_\_\_\_\_  
 \_\_\_\_\_ (4) \_\_\_\_\_ (5) \_\_\_\_\_

6. Name the inter-school sports in which you participated and the number of years in each.

<u>Sport</u>	<u>Number of years</u>
_____	_____
_____	_____
_____	_____
_____	_____

7. What sports activities did you watch during high school?

- (1) \_\_\_\_\_ (2) \_\_\_\_\_ (3) \_\_\_\_\_  
 \_\_\_\_\_ (4) \_\_\_\_\_ (5) \_\_\_\_\_

8. Name the sports clubs, recreational and athletic, to which you belonged either within or outside the school, and the activities involved (e.g. YWCA).

<u>Club</u>	<u>Activities</u>
_____	_____
_____	_____

College:

Undergraduate Level: Name of School(s)	Location	Approx. Size	Years	Major	Degree	Date
Graduate Level: Name of School(s)						

1. How many years of required physical education did you have in college? \_\_\_\_0, \_\_\_\_1, \_\_\_\_2, \_\_\_\_3, \_\_\_\_4.

2. What activities did you take? Check those courses that you really wanted to take.

____(1)_____	____(6)_____
____(2)_____	____(7)_____
____(3)_____	____(8)_____
____(4)_____	____(9)_____
____(5)_____	____(10)_____

3. Name the intramural sports in which you participated and the number of years in each. (dorm, sorority leagues, etc.)

Sport	Number of years
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

4. Name the varsity sports in which you participated and the number of years in each.

Sport	Number of years
_____	_____
_____	_____
_____	_____

5. Name the sports clubs, within and outside the college, to which you belonged, the number of years, and the activities involved (e.g. Ski Club).

Club	No. of years	Activities

6. Name the recreational sports in which you participated at college. (1) \_\_\_\_\_ (2) \_\_\_\_\_  
 (3) \_\_\_\_\_ (4) \_\_\_\_\_  
 (5) \_\_\_\_\_ (6) \_\_\_\_\_
7. Name the sports activities which you watched as an undergraduate. (1) \_\_\_\_\_ (2) \_\_\_\_\_  
 (3) \_\_\_\_\_ (4) \_\_\_\_\_ (5) \_\_\_\_\_  
 \_\_\_\_\_ (6) \_\_\_\_\_
8. Name the extracurricular activities in which you participated as an undergraduate. (1) \_\_\_\_\_ (2) \_\_\_\_\_  
 \_\_\_\_\_ (3) \_\_\_\_\_ (4) \_\_\_\_\_  
 (5) \_\_\_\_\_ (6) \_\_\_\_\_

## II. Present Patterns

### A. General Information

1. In what department in the university are you enrolled?  
 \_\_\_\_\_
2. What is your major area of study? \_\_\_\_\_
3. What degree do you seek, and when do you expect to obtain it?  
 Degree \_\_\_\_\_ Date \_\_\_\_\_
4. How many credits are you carrying this term? \_\_\_\_\_
5. Do you have an assistantship. Yes \_\_\_\_\_ No \_\_\_\_\_ Type \_\_\_\_\_
6. What is your probable future career? \_\_\_\_\_
7. What extracurricular activities do you have, and approximately how many hours do you spend in each per week?
- | Club or Activity | Hours per week |
|------------------|----------------|
| _____            | _____          |
| _____            | _____          |
| _____            | _____          |
8. What outside jobs do you hold? How many hours per week?
- | Job   | Hours per week |
|-------|----------------|
| _____ | _____          |
| _____ | _____          |
| _____ | _____          |

### B. Choices of Sports Activities during the past 12 months.

#### Participation:

1. Place an "X" beside those activities in which you have participated during the past 12 months.
2. Under the column indicating how often you participated in the activity place the appropriate letter to show with whom you participated the majority of the time:
- "A" if participated alone  
 "G" if participated with girls(s)  
 "B" if participated with boy(s)  
 "BG" if participated with both sexes together

Activities ("X")	Occasionally (few times)	Moderately/Frequently (more than 6 times)
Individual Sports:		
Archery		
Billiards		
Bowling		
Conditioning Exercises		
Golf		
Gymnastics		
Horsemanship		
Ice Skating		
Judo		
Roller Skating		
Skiing-Snow		
Skin and Scuba Diving		
Swimming		
Water Skiing		
Dual Sports:		
Badminton		
Fencing		
Table Tennis		
Tennis		
Dance:		
Folk		
Modern (Creative)		
Social		
Square		
Team Sports:		
Basketball		
Field Hockey		
Football-Touch		
Softball		
Volleyball		
Recreational Activities:		
Backyard Games - Horseshoes, etc.		
Bicycling		
Boating - Motor, Rowing		
Canoeing		
Fishing		
Hiking		
Sailing		

3. Rank your 3 favorite sports activities according to the chart,  
and where you learned them.

	Sport	Where Learned
(1)	_____	_____
(2)	_____	_____
(3)	_____	_____

## Spectating:

1. Place an "X" beside those activities which you have watched during the past 12 months. (This includes television viewing.)
2. Under the column indicating how often you watched the activity place the appropriate letter to show with whom you watched the majority of the time:

"A" if watched alone

"G" if watched with girl(s)

"B" if watched with boy(s)

"BG" if watched with both sexes together

Activity watched (X)	Occasionally (few times)	Moderately/Frequently (over six times)
Fall:		
___ Cross Country ___		
___ Football ___		
___ Rugby ___		
___ Soccer ___		
___		
Winter:		
___ Basketball ___		
___ Gymnastics ___		
___ Fencing ___		
___ Ice Hockey ___		
___ Indoor Track ___		
___ Swimming ___		
___ Wrestling ___		
___		
Spring:		
___ Baseball ___		
___ Golf ___		
___ Lacrosse ___		
___ Tennis ___		
___ Track and Field ___		
___		

3. Rank your 3 favorite spectator sports according to the above chart. (1) \_\_\_\_\_ (2) \_\_\_\_\_  
(3) \_\_\_\_\_

## C. Attitudes toward Sport:

1. Do you participate now, as a graduate student, more than/  
less than/ or the same amount as you did as an undergraduate?  
\_\_\_more \_\_\_less \_\_\_same

2. Rank, by number, the 3 most important reasons for the following:

Why I do participate in sports:

- ☐ a. exercise and health
- ☐ b. improve figure and posture
- ☐ c. relaxation - fun and enjoyment
- ☐ d. develop new skills
- ☐ e. meet people
- ☐ f. my friends do
- ☐ g. pressure from parents
- ☐ h. occupy leisure time
- ☐ i. encouragement from parents

Why I do not participate in sports:

- ☐ a. study interference
- ☐ b. lack of interest
- ☐ c. lack of time
- ☐ d. lack of information
- ☐ e. lack of knowledge and skill
- ☐ f. transportation problem
- ☐ g. lack of interested companions
- ☐ h. health
- ☐ i. laziness

3. Do you consider sports participation an appropriate activity for graduate women? Yes\_\_\_ No\_\_\_
4. Which sports do you think are most appropriate for female participation? (1)\_\_\_\_\_ (2)\_\_\_\_\_  
(3)\_\_\_\_\_
5. Which sports do you think are least appropriate for female participation? (1)\_\_\_\_\_ (2)\_\_\_\_\_  
(3)\_\_\_\_\_
6. Do you think sports are, or would be: a. a good way to meet men? Yes\_\_\_ No\_\_\_ Examples\_\_\_\_\_  
b. beneficial after marriage? Yes\_\_\_ No\_\_\_ Egs.\_\_\_\_\_
7. Do your friends and parents favour sports for women (in general)?  
Female friends - Yes\_\_\_ No\_\_\_ Male friends - Yes\_\_\_ No\_\_\_  
Parents: Father - Yes\_\_\_ No\_\_\_ Mother - Yes\_\_\_ No\_\_\_

## APPENDIX C

### PARTICIPATION SPORTS, RECREATIONAL ACTIVITIES, AND SPECTATOR SPORTS

## PARTICIPATION SPORTS AND RECREATIONAL ACTIVITIES

I. Individual Sports

Archery  
Billiards (or Pool)  
Bowling  
Conditioning Exercises  
Diving  
Golf (course, driving range, pitch and putt)  
Gymnastics - Apparatus and Free Exercise  
Horsemanship (Riding)  
Ice Skating - Figure  
Ice Skating - Speed  
Judo  
Roller Skating  
Skin and Scuba Diving  
Sky Diving  
Snow Skiing  
Swimming  
Synchronized Swimming  
Track and Field  
Tumbling  
Trampoline Tumbling  
Water Skiing  
Weight Training

II. Dual Sports

Badminton  
Fencing  
Table Tennis  
Tennis

III. Dance

Ballet  
Creative - Modern  
Jazz  
Social  
Square  
Folk

IV. Team Sports

Basketball  
Curling  
Field Hockey

Team Sports--Continued

Football - Touch  
 Lacrosse  
 Soccer  
 Softball  
 Volleyball

V. Recreational Activities

Backyard Games - Croquet, Horseshoes, Shuffleboard, etc.  
 Bicycling  
 Boating - Motor, Rowing  
 Campcraft  
 Canoeing  
 Fishing  
 Hiking  
 Hunting  
 Mountain Climbing  
 Sailing  
 Skeet Shooting

## SPECTATOR SPORTS

Auto Racing  
 Baseball  
 Basketball  
 Bowling  
 Boxing  
 Cricket  
 Football  
 Golf  
 Gymnastics  
 Horse Racing  
 Ice Hockey  
 Judo  
 Lacrosse  
 Polo  
 Rodeos  
 Roller Derby  
 Rugby  
 Sailboat Racing  
 Skiing  
 Soccer  
 Swimming (including Diving)  
 Synchronized Swimming  
 Tennis  
 Water Skiing  
 Wrestling  
 Figure Skating  
 Crew

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